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## ABOUT AVAILABILITY OF THE NAMES OF TIGER BEETLES (COLEOPTERA, CICINDELIDAE) GIVEN BY HEINRICH BEUTHIN

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**About Availability of the Names of Tiger Beetles (Coleoptera, Cicindelidae) Given by Heinrich Beuthin. Matalin, A. V., Putschkov, A. V.** — The availability of the names of Palaearctic tiger beetles, given by Heinrich Beuthin, is discussed. The unavailable names are listed, and the available names associated with the valid species or subspecies names are presented.

**Key words:** Coleoptera, Cicindelidae, tiger beetles, available name, unavailable name.

**О пригодности названий жуков-скакунов (Coleoptera, Cicindelidae), предложенных Генрихом Бойтином. Маталин А. В., Пучков А. В.** — Обсуждается пригодность названий Палеарктических видов жуков-скакунов, предложенных Генрихом Бойтином. Приведены список непригодных названий, а также список пригодных названий, ассоциированных с валидными видами или подвидами.

**Ключевые слова:** Coleoptera, Cicindelidae, жуки-скакуны, пригодные названия, непригодные названия.

After publication of the first volume of the Catalogue of Palaearctic Coleoptera (Löbl, Smetana, 2003) unclear situation with the availability of the names of tiger beetles given by Heinrich Beuthin still remained. The fact is that some of these names were accepted as available, whereas the others were rejected.

In most cases the new variations were described by Beuthin in the same publication, but only some of them were considered consequently as available in the Catalogue (Putschkov, Matalin, 2003). For example, the variations *fabricii* Beuthin, 1892 and *in-humeralis* Beuthin, 1892 were accepted as available names for *Calomera littoralis littoralis* Fabricius, 1787, but the variation *rectangularis* Beuthin, 1892 was neglected (Putschkov, Matalin, 2003: 100).

A similar situation is observed in the Systematic List of Extant Ground Beetles of the World (Lorenz, 1998, 2005). Thus, the variation *fennica* Beuthin, 1890 was accepted as an available name for *Cicindela sylvatica* Linnaeus, 1758, whereas the variation *hungarica* Beuthin, 1890 was indicated as an unavailable name (Lorenz, 1998: 45, 2005: 45).

In the present paper, preceding the second edition of the Catalogues, we tried to solve this problem.

Despite the fact that all names were proposed by Beuthin for variations, some of them are really unavailable. According to the Article 45.5 of ICZN (1999) the fourth name published as an addition to the trinomen are infrasubspecific and unavailable. Thus, the following names should be excluded from consideration of the Catalogue<sup>1</sup>:

*Cicindela flexuosa flexuosa*: var. *wimmeli* Beuthin, 1892 a [Catalonien], var. *siciliana* Beuthin, 1892 a [Sicilien], var. *inhumeralis* Beuthin, 1892 a [—], var. *egena* Beuthin, 1892 a [Catalonien, Tunis], var. *muelleriana* Beuthin, 1892 a [Catalonien], var. *manca* Beuthin, 1892 a [—]; *Cicindela flexuosa sardea*: var. *dusrupta* Beuthin, 1892 a [Tunis], var. *humeralis* Beuthin, 1892 a [Sardinien, Sicilien], var. *apicalis* Beuthin, 1892 a [—], var. *semiapicalis* Beuthin, 1892 a [—];

*Cicindela caucasica caucasica*: var. *inhumeralis* Beuthin, 1893 f [Kaukasus], var. *disapicalis* Beuthin, 1893 f [Amasia], var. *dismarginalis* Beuthin, 1893 f [Amasia], var. *destituta* Beuthin, 1893 f [Amasia], var. *adamsi* Beuthin, 1893 f [Araxesthal, Amasia], var. *dishumeralis* Beuthin, 1893 f [Kaukasus], var. *subapicalis* Beuthin, 1893 f [Amasia];

*Cicindela caucasica sturmi*: var. *inhumeralis* Beuthin, 1893 f [Turkestan], var. *interrupta* Beuthin, 1893 f [Osch], var. *disapicalis* Beuthin, 1893 f [Lenkoran], var. *semiapicalis* Beuthin [Turkestan], 1893 f, var. *semihumeralis* Beuthin, 1893 f [Turkestan], var. *circumflexa* Beuthin, 1893 f [Turkestan];

*Cicindela turkestanica turkestanica*: var. *interrupta* Beuthin, 1895 [Chodjent, Margelan], var. *abbreviata* Beuthin, 1895 [Chodjent, Neu-Margelan], var. *subhumeralis* Beuthin, 1895 [Neu-Margelan], var. *marginalis* Beuthin, 1895 [Samarkand];

*Cicindela sylvatica sylvatica*: var. *humeralis* Beuthin, 1893 b [Frankreich, England, Scandinavien, Finnland, Norddeutschland], var. *abbreviata* Beuthin, 1893 b [Fürstenberg in Mecklenburg], var. *interrupta* Beuthin, 1893 b [Hamburg], var. *semihumeralis* Beuthin, 1893 b [Kusamo: Finnland]; *Cicindela sylvatica fasciatopunctata*: var. *virescens* Beuthin, 1893 b [Türkei, Brussa], var. *humeralis* Beuthin, 1893 b [Türkei, Brussa];

*Cicindela hybrida riparia*: var. *humeralis* Beuthin, 1893 e [Schweiz, Tyrol], var. *ruderala* Beuthin, 1893 e [Schweiz], var. *inhumeralis* Beuthin, 1893 e [Suanetien, Kaukasus], var. *menetriese* 1893 e [Kaukasus]; *Cicindela hybrida hybrida*: var. *abbreviata* Beuthin, 1893 e [Westpreussen], var. *adjuncta* Beuthin, 1893 e [Fontainebleau], var. *circumflexa* Beuthin, 1893 e [Rostok], var. *copulata* Beuthin, 1893 e [Fontainebleau, Potsdam], var. *dilacerata* Beuthin, 1893 e [Fürstenberg: Mecklenburg], var. *semiapicalis* Beuthin, 1893 e [Frankreich], var. *semihumeralis* Beuthin, 1893 e [Marseille, Ungarn], var. *merkli* Beuthin, 1893 e [Ungarn];

*Cicindela hybrida maritima*: var. *abbreviata* Beuthin, 1893 e [Swinemünde], var. *copulata* Beuthin, 1893 e [Swinemünde], var. *semihumeralis* Beuthin, 1893 e [Südrussland], var. *circumflexa* Beuthin, 1893 e [Südrussl.];

*Cicindela hybrida sahlbergi*: var. *fischeri* Beuthin, 1893 e [Sibirien].

In all other cases the names of the variations of tiger beetles given by Beuthin according to the Article 45.6.4 of ICZN (*International...*, 1999) are available. The following list shows these names, as well as the valid species or subspecies names (in bold), with which they are associated.

<sup>1</sup> In the brackets (here and hereinafter) the type locality as in original publication is specified, and a symbol “—” indicates that the type locality was not stated.

*Cicindela aphrodisia*: var. *biinterrupta* Beuthin, 1893 c, var. *copulata* Beuthin, 1893 c, var. *disapicalis* Beuthin, 1893 c, var. *inhumeralis* Beuthin, 1893 c [all — Syrien] — ***Calomera aphrodisia aphrodisia*** (Baudi di Selve, 1864); var. *connata* Beuthin, 1893 c [Sicilien, Cypern, Syrien] — ***Calomera aphrodisia panormitana*** (Ragusa, 1906).

*Cicindela fischeri*: var. *apicalis* Beuthin, 1892 c [Türkei, Südrusland, Caucasus], var. *boeberi* Beuthin, 1892 c [Araxesthal], var. *connata* Beuthin, 1892 c [Türkei], var. *disapicalis* Beuthin, 1892 c [Türkei, Südrusland], var. *exsuturalis* Beuthin, 1892 c [Türkei], var. *marginalis* Beuthin, 1892 c [Türkei, Brussa], var. *motschulskyi* Beuthin, 1892 c [Türkei], var. *subhumeralis* Beuthin, 1892 c [Südrusland], var. *tuerki* Beuthin, 1886 [Süd-Rusland] — ***Calomera fischeri fischeri*** (M. F. Adams, 1817); var. *sempunctata* Beuthin, 1892 c [Turkestan] — ***Calomera fischeri elongatosignata*** (W. Horn, 1922).

*Cicindela littoralis*: var. *fabricii* Beuthin, 1892 b [Catalonien, Portugal, Frankreich, Sicilien, Ungarn, Russland, Siebenbürgen], var. *disapicalis* Beuthin, 1892 b [—], var. *inhumeralis* Beuthin, 1892 b [—], var. *mediterranea* Beuthin, 1892 b [Spanien, Sicilien] — ***Calomera littoralis littoralis*** (Fabricius, 1787); var. *horni* Beuthin, 1892 b [Istrien], var. *koltzei* Beuthin, 1890 c [Ungarn, Siebenbürgen, Griechenland], var. *ragusai* Beuthin, 1890 c [Catalonien, Krim], var. *rectangulata* Beuthin, 1890 c [Catalonien, Frankreich, Sicilien], var. *sexmaculata* Beuthin, 1890 c [Catalonien], var. *centralis* Beuthin, 1892 b [—], var. *connata* Beuthin, 1892 b [—], var. *manca* Beuthin, 1892 b [—], var. *obliterata* Beuthin, 1892 b [—], var. *podai* Beuthin, 1892 b [—], var. *sublateralis* Beuthin, 1892 b [—], var. *tripunctata* Beuthin, 1892 b [—] — ***Calomera littoralis nemoralis*** (Olivier, 1790); var. *turcestanica* Beuthin, 1892 b [Turkestan] — ***Calomera littoralis conjunctaepustulata*** (Dokhtourov, 1887).

*Cicindela maura*: var. *humeralis* Beuthin, 1890 b [Catalonien], var. *muelleri* Beuthin, 1890 b [Catalonien], var. *marginalis* Beuthin, 1894 b [Tunis, Marocco, Algier, Spanien, Sicilien, Cypern, Syrien] — ***Cassolaia maura maura*** (Linnaeus, 1758); var. *angulata* Beuthin, 1894 b, var. *sexmaculata* Beuthin, 1894 b, var. *stricta* Beuthin, 1894 b, var. *transversalis* Beuthin, 1894 b [all — Tunis, Marocco, Algier, Spanien, Sicilien, Cypern, Syrien] — ***Cassolaia maura cupreothoracica*** (Korell et Cassola, 1987).

Last four variations are associated with *C. maura cupreothoracica* because of the brown-bronze colour of their head and pronotum.

*Cicindela atrata*: var. *albomarginata* Beuthin, 1890 e [Süd-Russland] — ***Cephalota (Taenidia) atrata*** (Pallas, 1776).

*Cicindela galathea*: var. *ramosa* Beuthin, 1894 a [Turkestan], var. *viridescens* Beuthin, 1894 a [Turkestan] — ***Cephalota (Taenidia) galathea*** (Thieme, 1881).

*Cicindela lyoni*: var. *connata* Beuthin, 1894 c, var. *impunctata* Beuthin, 1894 c, var. *modesta* Beuthin, 1894 c, var. *virescens* Beuthin, 1894 c [all — Tunis, ?Tripolis] — ***Cephalota (Taenidia) tibialis lyonii*** (Vigors, 1825).

*Cicindela campestris*: var. *confluens* Beuthin, 1889 a [Schweiz, Russland], var. *exsuturalis* Beuthin, 1899 [Hausbruch], var. *luetgensis* Beuthin, 1889 a [Russland], var. *palustris* Beuthin, 1896 [Umgegend Hamburgs], var. *quadrimaculata* Beuthin, 1889 a [Tyrol], var. *quinque-maculata* Beuthin, 1889 a [Hamburg, Tyrol, Schweiz, Ungarn, Siebenbürgen], var. *rufipennis* Beuthin, 1885 [Harburg], var. *semiapicalis* Beuthin, 1896 [Umgegend Hamburgs], var. *subapicalis* Beuthin, 1899 [Hausbruch] — ***Cicindela campestris campestris*** Linnaeus, 1758.

*Cicindela gallica*: var. *abbreviata* Beuthin, 1893 a [Schweiz, Frankreich], var. *alpestris* Beuthin, 1888 [Gadmenthale], var. *copulata* Beuthin, 1890 a [Domo d'Ossola], var. *humeralis* Beuthin, 1893 a [Basses-Alpes], var. *saussurei* Beuthin, 1890 a [Furkahorn] — ***Cicindela gallica*** Brullé, 1834.

*Cicindela burmeisteri*: var. *apicalis* Beuthin, 1894 c, var. *bimaculata* Beuthin, 1894 c, var. *margellanica* Beuthin, 1894 c, var. *marginalis* Beuthin, 1894 c, var. *semihumeralis* Beuthin, 1894 c [all — Turkestan, Dsungarei, Altai-Gebirge, Persien] — ***Cicindela granulata granulata*** Gebler, 1843; var. *circumflexa* Beuthin, 1894 c [Turkestan, Dsungarei, Altai-Gebirge, Persien] — ***Cicindela granulata stoliczkana*** Bates, 1878.

The lateral band, coupling the humeral and the apical lunules as well as the middle band, allows to associate the variation *circumflexa* with *C. granulata stoliczkana*.

*Cicindela hybrida*: var. *dilacerata* Beuthin, 1899 [Geesthacht], var. *striatoscutellata* Beuthin, 1885 [Zürich, Engelberg] — *Cicindela hybrida hybrida* Linnaeus, 1758, var. *korbi* Beuthin, 1888 [Cuença: Andalusien] — *Cicindela lagunensis* Gautier des Cottés, 1872.

*Cicindela japonica*: var. *abbreviata* Beuthin, 1905 a, var. *apicalis* Beuthin, 1905 a, var. *dilacerata* Beuthin, 1905 a, var. *disrupta* Beuthin, 1905 a, var. *exapicalis* Beuthin, 1905 a, var. *exhumerosa* Beuthin, 1905 a, var. *heydeni* Beuthin, 1905 a, var. *humerosa* Beuthin, 1905 a, var. *interrupta* Beuthin, 1905 a, var. *japanensis* Beuthin, 1905 a, var. *media* Beuthin, 1905 a, var. *morawitzi* Beuthin, 1905 a, var. *nigra* Beuthin, 1905 a, var. *prima* Beuthin, 1905 a [all — Korea, Japan] — *Cicindela japana japana* Motschulsky, 1858, var. *inhumeralis* Beuthin, 1905 a [Korea, Japan] — *Cicindela japana yezoana* Nakane, 1957.

*Cicindela raddei*: var. *humeralis* Beuthin, 1905 b [Insel Yesso] — *Cicindela sachalinensis nihozana* Bates, 1883.

*Cicindela undata*: var. *divisa* Beuthin, 1890 e [Turkestan] — *Cicindela lacteola lacteola* Pallas, 1776.

*Cicindela soluta*: var. *kraatzi* Beuthin, 1890 c [Süd-Russland], var. *nigra* Beuthin, 1898 [Jekaterinoslaw] — *Cicindela soluta soluta* Dejean, 1822; var. *sengstacki* Beuthin, 1890 c [Ungarn] — *Cicindela soluta pannonica* Mandl, 1936.

*Cicindela sylvatica*: var. *fennica* Beuthin 1890 e [Kusamo: Finnland], var. *hungarica* Beuthin, 1890 e [Ungarn], var. *subinterrupta* Beuthin, 1899 [Hausbruch] — *Cicindela sylvatica sylvatica* Linnaeus, 1758.

*Cicindela sylvicola*: var. *disapicalis* Beuthin, 1893 d [Bönigen: Brienzer See], var. *humeralis* Beuthin, 1893 d [Schweiz, Bayern, Oesterreich], var. *laeviscutellata* Beuthin, 1885 [Engelberg], var. *marginalis* Beuthin, 1893 d [Bönigen], var. *palpalis* Beuthin, 1893 d [Schweiz: Oberengadin], var. *schwabi* Beuthin, 1893 d [Mistek: Mähren], var. *semiapicalis* Beuthin, 1893 d [—], var. *viridis* Beuthin, 1893 d [Schweiz, Oesterreich] — *Cicindela sylvicola* Dejean, 1822.

*Cicindela germanica*: var. *caprea* Beuthin, 1889 b [Munster, Paderborn: Westfalen], var. *jordani* Beuthin, 1889 b [Hildesheim] — *Cylindera* (s. str.) *germanica germanica* (Linnaeus, 1758); var. *catalonica* Beuthin, 1890 c [Catalonien] — *Cylindera* (s. str.) *germanica sobrina* (Gory, 1833); var. *oberthueri* Beuthin, 1904 [Moidrey: Département Manche], var. *semiapicalis* Beuthin, 1905 b [Moidrey: Département Manche] — *Cylindera* (s. str.) *germanica bleusei* (Beuthin, 1904).

The rank of *C. germanica bleusei* is discussed in the separate paper (Matalin, 2014).

*Cicindela paludosa*: var. *coerulea* Beuthin, 1894 c [süd. Frankreich, Spanien], var. *dufouri* Beuthin, 1890 c [Catalonien], var. *hopffgarteni* Beuthin, 1890 c [Catalonien], var. *viridis* Beuthin, 1894 c [süd. Frankreich, Spanien] — *Cylindera* (s. str.) *paludosa* (L. Dufour, 1820).

*Cicindela flexuosa*: var. *albocincta* Beuthin, 1890 d [Corsica, Sicilien], var. *angulosa* Beuthin, 1890 d [Catalonien], var. *lunata* Beuthin, 1890 d [Catalonien], var. *lyrophora* Beuthin, 1890 d [Spanien], var. *smaragdina* Beuthin, 1890 d [Corsica, Catalonien] — *Lophyra* (s. str.) *flexuosa flexuosa* (Fabricius, 1787).

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