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# *Exomala (Neoblitopertha) campestris* (LATREILLE, 1804) and *Exomala (Neoblitopertha) succincta* (CASTELNAU, 1840): two distinct European species

(Coleoptera, Scarabaeidae, Rutelinae, Anomalini)

With 36 figures

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## Zusammenfassung

Es wird gezeigt, dass entsprechend dem Code *Melolontha campestris* LATREILLE, 1804, obwohl ein jüngeres primäres Homonym von *Melolontha campestris* HERBST, 1783, als gültiger Name für die Art *Exomala (Neoblitopertha) campestris* verwendet werden muss. *Exomala (Neoblitopertha) succincta* (CASTELNAU, 1840), welche bislang als Synonym von *Exomala (Neoblitopertha) campestris* LATREILLE, 1804 betrachtet wurde, ist eine valide Art. Diagnostische Merkmale, die die Separation von *succincta* und *campestris* ermöglichen, sowie ein Bestimmungsschlüssel für die Arten der Untergattung *Neoblitopertha* BARAUD, 1991, werden präsentiert.

## Summary

Evidence is presented showing that, according to the Code, *Melolontha campestris* LATREILLE, 1804, albeit a junior primary homonym of *Melolontha campestris* HERBST, 1783 must be used as the valid name for the species currently known as *Exomala (Neoblitopertha) campestris*. *Exomala (Neoblitopertha) succincta* (CASTELNAU, 1840), currently considered synonym of *Exomala (Neoblitopertha) campestris* (LATREILLE, 1804), is rehabilitated as a good species. Diagnostic features enabling the separation of *succincta* from *campestris* are provided, as well as a key to the species of *Neoblitopertha* BARAUD, 1991.

## Keywords

Taxonomy, nomenclature, new synonymy, key to species, Coleoptera, Scarabaeidae, Anomalini, *Exomala (Neoblitopertha)*, Palearctic region.

## Introduction

LATREILLE (1804) described, from southern France, *Melolontha campestris*, currently *Exomala (Neoblitopertha) campestris*. A few decades later CASTELNAU (1840) described two species of *Anisoplia*: *arenaria* from southern France, and *succincta* from Austria and Italy. Both names are currently considered synonyms of *E. campestris*. Subsequent authors recognized a great variability of the latter species, particularly the colour pattern of the elytra, and named several varieties (MULSANT 1842, BÁGUENA 1955). PETROVITZ (1968) defined a *Blitopertha campestris*-group, comprising *Bl. campestris*, *Bl. leonii* (LUIGIONI, 1932), *Bl. adriatica* PETROVITZ, 1968, and *Bl. bileki* PETROVITZ, 1968, he provided an identification key, and illustrated the aedeagi of these

species. In his revision of the genus *Blitopertha* REITTER, 1903, BARAUD (1991) elevated *Exomala* REITTER, 1903 to the rank of genus and created the subgenus *Neoblitopertha* for the species of the *Bl. campestris*-group. BARAUD's 1991 taxonomic arrangement is currently upheld (ZORN, 2006). Puzzlingly, BARAUD (1991) did not notice the significant differences between the aedeagus figures of *Bl. campestris* in PETROVITZ (1968: 484, fig. 14c) and his own drawings (BARAUD, 1991: 59, fig. 8a-8c, and BARAUD 1992: 740, fig. 857 [it should be noted that the legends of figures 857 and 858 are transposed]). It was this discrepancy that led one of us (E.R.) to re-examine this taxon and to conclude that *Exomala campestris* auctorum actually includes two very similar but distinctly different species.

## Material and Methods

The Coleoptera collection of LATREILLE was split at an early date, whereas the Lamellicornia collection of CASTELNAU was deposited via RENÉ OBERTHÜR at the Muséum National d'Histoire Naturelle, Paris (HORN et al., 1990). However, no type material of the species-group names in the subgenus *Neoblitopertha* could be traced at a first search in the MNHN collections. This is unproblematic since the two recognized species can be differentiated both morphologically and geographically, and all published names can be assigned to either of the species with certainty by their original descriptions. Therefore, according to Article 75.3 of the Code, even if the types were proven lost we would refrain from designating neotypes.

The examined material is housed in the following collections:

MNHN	Muséum National d'Histoire Naturelle, Paris
NSMW	Naturwissenschaftliche Sammlung des Museum Wiesbaden
SMNS	Staatliches Museum für Naturkunde Stuttgart
SMTD	Senckenberg Museum für Tierkunde Dresden
MNHB	Zoologisches Museum der Humboldt-Universität zu Berlin
ZSM	Zoologische Staatssammlung München
CAW	coll. A. WEIGEL, Wernburg
CCZ	coll. C. ZORN, Gnoien
CER	coll. E. RÖSSNER, Schwerin
CJS	coll. J. SCHULZE, Berlin
CHK	coll. H. KALZ, Schlabendorf
CTB	coll. T. BRANCO, Porto

The body length was measured from the apex of the clypeus to the apex of the elytra. Descriptive statistics and the statistical analysis (t-test) were performed with SPSS 14.0. The significance level was set at 99 % ( $p < 0.01$ ).

## Nomenclature

As already pointed out by ÁDÁM (2003) and ZORN (2006), the name *Melolontha campestris* LATREILLE, 1804, currently in prevailing usage as *Exomala (Neoblitopertha) campestris*, is a junior primary homonym of *Melolontha campestris* HERBST, 1783.

According to Article 23.9.1 of the Code (ICZN, 1999), prevailing usage must be maintained when the following conditions are both met:

- 23.9.1.1. the senior synonym or homonym has not been used as a valid name after 1899, and
- 23.9.1.2. the junior synonym or homonym has been used for a particular taxon, as its presumed valid name, in at least 25 works, published by at least 10 authors in the immediately preceding 50 years and encompassing a span of not less than 10 years.

HERBST (1783) noting many differences amongst specimens from Berlin that he had identified as "*Melolontha horticola*. FABR. sp. 41" (i.e., *Melolontha horticola*: FABRICIUS, 1781 = *Scarabaeus horticola* LINNAEUS, 1758, currently *Phyllopertha horticola*) split them into three species, *Melolontha horticola* and the two new species *Melolontha segetum* and *Melolontha campestris*.

FABRICIUS (1787) described as *Melolontha fruticola* the species that he believed HERBST (1783) had described on the male as *Melolontha segetum*, and as *Melolontha campestris* on the female. *Melolontha fruticola* FABRICIUS, 1787 was then adopted as the valid name by subsequent authors, e.g., OLIVIER (1789), GMELIN (1790), SCHÖNHERR (1817), CASTELNAU (1840), ERICHSON (1847).

In his catalogue of Coleoptera, HAROLD (1869) recorded *Melolontha segetum* HERBST, 1783 (currently *Chaetopteroptia segetum*) as the valid name, and that was adopted as the valid name by subsequent authors, e.g., MULSANT & REY (1871), REITTER (1903), BEDEL (1911), OHAUS (1918).

In summary, two names have been used as the valid name for the species currently known as *Chaetopteroptia segetum* (HERBST, 1783), *Melolontha fruticola* FABRICIUS, 1787 in the period between FABRICIUS's 1787 and HAROLD's 1869 publications, and *Melolontha segetum* HERBST, 1783 thereafter. *Melolontha campestris* HERBST, 1783 has hardly ever been used as a valid name, certainly not after 1899. Therefore, the first condition of Article 23.9.1 is met.

The list below includes in chronological order 28 works, by 22 (first) authors, encompassing a period of 49 years, where the name *Melolontha campestris* LATREILLE, 1804 was used as the presumed valid name, fulfilling the second condition of Article 23.9.1.

1. MIKŠIČ (1959) [p. 120: *Phyllopertha campestris* (LATR.)],
2. PAULIAN (1959) [*Phyllopertha campestris* (LATR.)],
3. BÁGUENA (1967) [p. 434: *Blitopertha campestris* (LATR.)],
4. PETROVITZ (1968) [p. 483: *Blitopertha campestris* (LATR.)],
5. MACHATSCHKE (1969) [p. 347: *Blitopertha campestris* (LATR.)],
6. PETROVITZ (1969a) [p. 866: *Blitopertha campestris* (LATR.)],
7. PETROVITZ (1969b) [p. 104: *Blitopertha campestris* (LATR.)],
8. ALLENSPACH (1970) [p. 124: *Phyllopertha campestris* (LATR.)],
9. MIKŠIČ (1970) [p. 42: *B. (B.) campestris* (LATR.)],
10. BARAUD (1977) [p. 291: *Blitopertha campestris* (LATR.)],
11. PAULIAN & BARAUD (1982) [p. 363: *Blitopertha campestris* (LATR.)],
12. BENITEZ-DONOSO, A. & GARCIA-PARRÓN, M. J. (1984) [p. 100: *Blitopertha campestris* (LATR.)],
13. GALANTE (1984) [p. 6: *Blitopertha campestris* (LATR.)],

14. LUCHT (1987) [p. 238: *Blitopertha campestris* (LATR.)],
15. BARAUD (1991) [p. 50: *Exomala (Neoblitopertha) campestris* (LATR.)],
16. KOCH (1991) [p. 375: *Blitopertha campestris* (LATR.)],
17. BARAUD (1992) [p. 739: *Exomala (Neoblitopertha) campestris* (LATR.)],
18. ROBERT (1992) [p. 175: *Blitopertha campestris* (LATR.)],
19. PIATTELLA & SABATINELLI (1994) [p. 156: *Exomala campestris* (LATR.)],
20. CARPANETO & PIATTELLA (1995) [p. 15: *Exomala campestris* (LATR.)],
21. KRELL (1995) [p. 75: *Blitopertha campestris* (LATR.)],
22. KLAUSNITZER & KRELL (1996) [p. 71: *Blitopertha campestris* (LATR.)],
23. BAHILLO & LÓPEZ-COLÓN (1998) [p. 169: *Exomala (Neoblitopertha) campestris* (LATR.)],
24. LEPLAT (1998) [p. 60: *Blitopertha campestris hispanica*],
25. MICÓ & GALANTE (2002) [p. 55: *Exomala (Neoblitopertha) campestris* (LATR.)],
26. PESARINI (2004) [p. 92: *Exomala campestris* (LATR.)],
27. ZORN (2006) [p. 266: *Exomala (Neoblitopertha) campestris* (LATR.)],
28. JAMESON et al. (2007) [p. 432: *Exomala campestris* (LATR.)].

Since both conditions of Article 23.9.1 are met, *Melolontha campestris* LATREILLE, 1804 ought to be given precedence (as a *nomen protectum*) over *Melolontha campestris* HERBST, 1783 (a *nomen oblitum*), and must be used as the valid name.

## Taxonomy

### *Exomala (Neoblitopertha) campestris* (LATREILLE, 1804)

*Melolontha campestris* LATREILLE, 1804: 195 (type locality: „midi de la France“).

*Anisoplia arenaria* CASTELNAU, 1840: 151 (type locality: „France méridionale“).

*Phyllopertha campestris* var. *occidentalis* MULSANT, 1842: 497 (type locality: Bordeaux and Mont-de-Marsan).

*Phyllopertha campestris* var. *circumcincta* MULSANT, 1842: 497 (type locality: Bordeaux and Mont-de-Marsan).

*Phyllopertha campestris* var. *sabulosa* MULSANT, 1842: 497 (type locality: Bordeaux and Mont-de-Marsan).

*Blitopertha campestris* var. *hispanica* BÁGUENA, 1955: 293 (type locality: Spain); LEPLAT, 1958: 60 [*Blitopertha campestris hispanica*].

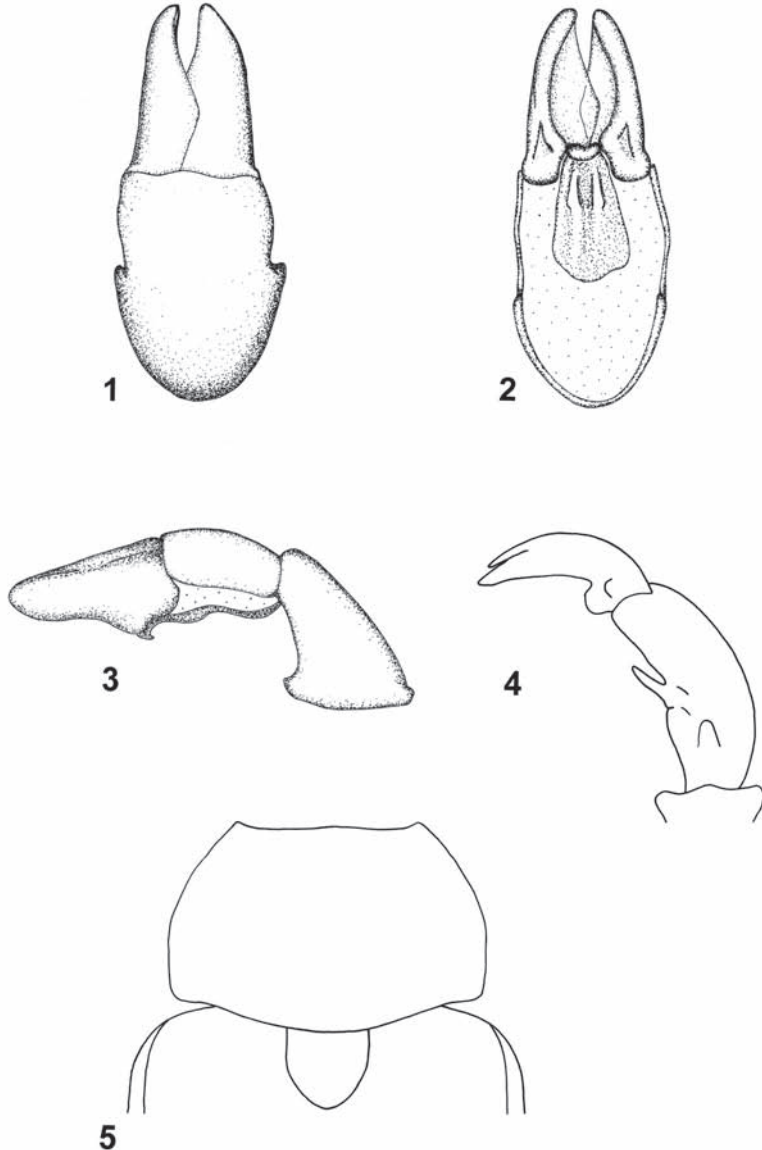
*Blitopertha campestris* var. *mulsanti* BÁGUENA, 1955: 293 (type locality: Bordeaux and Mont-de-Marsan).

#### Examined material:

France: „Gall. mer., occ. ...[partly illegible] | 24645“ (1 ♂, historical collection, MNHB). – „24645“ (2 ♀ ♀, historical collection, MNHB). – „Frankreich“ (1 ♂, 2 ♀ ♀, MNHB). – „Gall. austr.“ (1 ♂, coll. Hänel, SMTD). – „Gironde: Cap Ferret, dune océan, cote 99, fleurs, 15.VI.[19]66“ (1 ♀, CTB). – „Gironde: La Teste, 4.VII.[18]84“ (1 ♂, CTB). – „Gironde: Le Haillan, 20.VI.[19]43, G.Tempère legit“ (1 ♀, CTB). – „Gironde: Le Pilat, VI.[19]47, G.Tempère legit“ (1 ♀, CTB). – „Gironde: Le Porge, 11.VI.[19]61, J. Aubry legit“ (2 ♂ ♂, CTB). – „Gironde: St. S. de Cadourne, à Barclès en fouettant, VI.[19]24“ (2 ♀ ♀, CTB). – „Gironde: Soulac-sur-Mer, H.Gouin legit“ (1 ♀, CTB). – „Gironde: Villeneuve d'Ornon, 2.VII.1926, G.Tempère legit“ (1 ♀, CTB). – „Haute-Garonne, 1924, Duffort legit (ex col. G.Tempère)“ (1 ♀, CTB). – „Landes, J. Feytaud legit“ (2 ♀ ♀, CTB). – „Landes: env. de Mont de Marsan, 1955, J. Feytaud legit“

(2 ♂♂, 1 ♀, CTB). – „Cauterets, Hautes Pyrenées | Coll. Piesbergen“ (1 ♂, 1 ♀, SMNS). – „Süd Europa | Coll. Jäger“ (1 ♂, 3 ♀♀, SMNS).

Andorra: „Andorra e.V. 1.7.[19]10 J | Sammlung J. Daniel“ (4 ♂♂, 9 ♀♀, ZSR).



**Figs 1-5:** *Exomalpa campestris*, France, Gironde, La Teste, ♂. – 1: Aedeagus, dorsal. – 2: Aedeagus, ventral. – 3: Aedeagus, lateral. – 4: Last joint and inner claw (outer claw not shown) of right fore tarsus. – 5: Pronotum and scutellum.

Spain: „Spanien, Prov. Lerida: Sepeira (12 km nw Tremp), 1200 m, 22.VI.1992, leg. H. Kalz“ (3 ♀ ♀, CHK). – dto., nur „leg. A. Schröder“ (1 ♀, CER). – „Spanien, Prov. Teruel: Mas de las Matas (13 km sö Alcorisa), 500 m, 17.-21.VI.1992, leg. E. Rößner“ (1 ♂, 1 ♀, CER). – „Ponferrada, Paganetti“ (1 ♂, SMTD). – „Hispania“ (1 ♀, coll. Felsche, SMTD).

### Description:

Head, pronotum and scutellum black, shining, often with weak metallic lustre. Elytra yellowish brown, moderately shining; dark marks usually weakly developed: narrowly darkened along the periphery, umbone with a dark mark, the dark transversal band sometimes indicated.

Clypeus broadly rectangular; sides parallel; fore edge reflexed and weakly convex; anterior angles rounded; punctuation transversely rugose.

Forehead and vertex with erect, light-coloured pilosity; with very dense, rugose punctuation. Antennal club elongate; outer face of last antennomere weakly convex.

Pronotum (fig. 5) evenly rounded at the sides; base convex, completely margined, margin extending to the postero-lateral angles though here sometimes very thin; punctuation transversely dense to rugose.

Scutellum (fig. 5) most often elongate, sometimes semicircular; densely punctate, setose.

Elytra (figs 11-16) broadest approximately in the middle; odd intervals feebly convex and weakly setose; all intervals with more or less distinct transverse, rugose punctuation.

Pygidium densely transversely rugose; with moderately dense, long light-coloured pilosity.

Ventral face and femora with rather long light-coloured setae.

Inner claw of fore tarsi in males (fig. 4) relatively short, less than half as long as last tarsal joint.

### *Exomala (Neoblitopertha) succincta* (CASTELNAU, 1840), *stat. rest.*

*Anisoplia succincta* CASTELNAU, 1840: 151 (type locality: Austria and Italy)

*Phyllopertha campestris* var. *abbreviata* MULSANT, 1842: 496 (type locality: Lyon), *syn. nov.*

*Phyllopertha campestris* var. *cruciata* MULSANT, 1842: 496 (type locality: Lyon), *syn. nov.*

*Phyllopertha campestris* var. *maculata* MULSANT, 1842: 496 (type locality: Lyon), *syn. nov.*

*Phyllopertha campestris* var. *pauperata* MULSANT, 1842: 496 (type locality: Lyon), *syn. nov.*

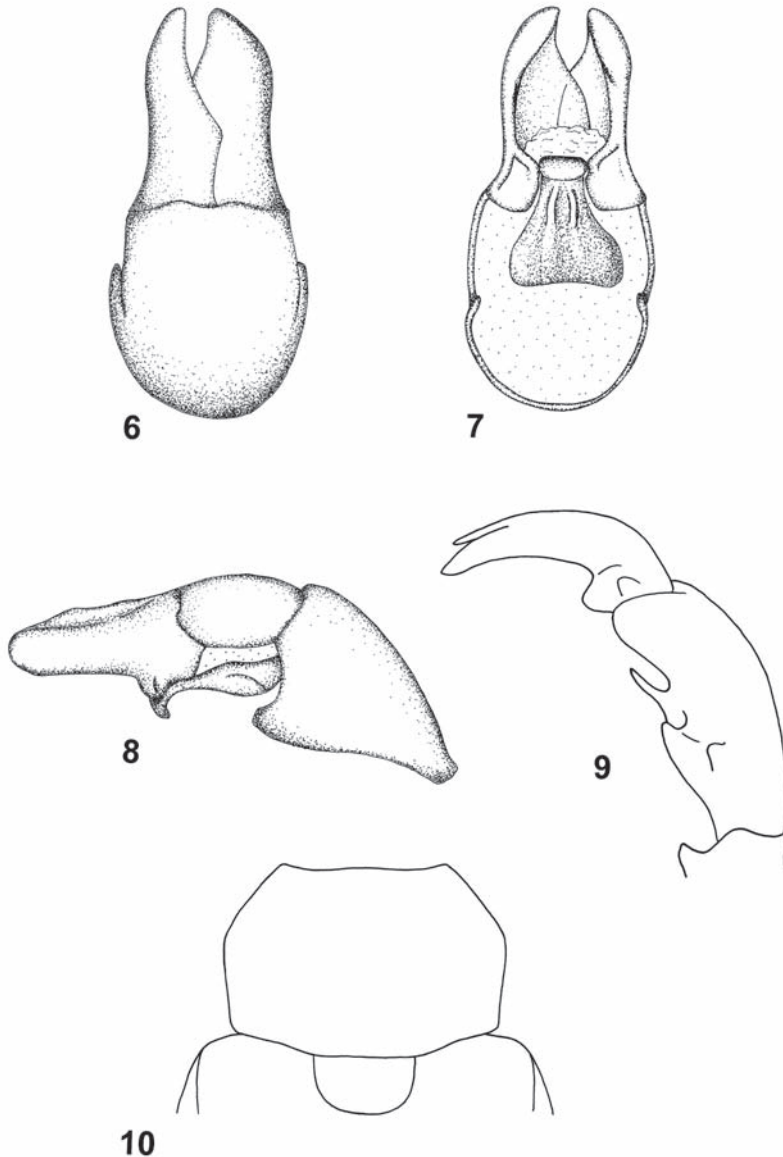
### Examined material:

France: „Savoie, [illegible:] Voison“ (1 ♀, MHNG). – „Frankreich“ (1 ♂, MNHB). – „Lyon“ (3 ♂ ♂, MNHB). – „Basses Alpes, St. Andire, Juni 1966“ (3 ♂ ♂, 6 ♀ ♀, CJS). – „Gall. mer.“ (3 ♂ ♂, 1 ♀, coll. Fehse, SMTD).

Italy: „Tirol mer. | 24645“ (3 ♂ ♂, historical collection, MNHB). – „Südtirol, VI.1931, leg. Schadewald“ (2 Ex., CAW). – „Tirol | 24645“ (2 ♂ ♂, 1 ♀, historical collection, MNHB). – „Tyrol. Stentz. | 24645“ (1 ♂, historical collection, MNHB). – „24645“ (5 ♂ ♂, 4 ♀ ♀, historical collection, MNHB). – „Trient, Schmidt“ (1 ♀, MNHB). – „Trient | 89946 | Coll. Thieme“ (1 ♂, historical collection, MNHB). – „Verona“ (3 ♂ ♂, 1 ♀, MNHB). – „Toscana, [illegible:] Sinca | 69“ (1 ♂, MNHB). – „Bozen“ (3 ♀ ♀, MNHB). – „Bozen | Kollektion Dr. Fuchs“ (3 ♂ ♂, NSMW). – „Atzwang [Südtirol, zu Renon] 7.1910, g. W. Maus“ (1 ♀, NSMW). – „Emilia, Fiumalbo, VI.[18]94, A. Fiori | 110616“ (3 ♀ ♀, MNHB). – „Emilia, Reno, 6.VI.[18]90, A. Fiori | 110617“ (1 ♀, MNHB). – „Emilia, Rimini, 6. [19]11, A. Fiori | 110618“ (1 ♀, MNHB). – „Piemonte, [illegible:] Garearel, VI.[18]90, A. Fiori | 110619“ (1 ♀, MNHB). – „Trient, [leg.] Kirsch“ (2 ♂ ♂, SMTD). – „Tirol, [leg.] Märkel“ (3 ♂ ♂, 3 ♀ ♀, SMTD). – „Bozen, VI.1903 [leg.] Dr. Noesske“ (2 ♂ ♂, 2 ♀ ♀, SMTD). – „Italia, [leg.] Märkel“ (2 ♂ ♂, SMTD). – „Tirolis mer. | alte Sammlung“ (1 ♀, ZSM). – „Bozen | Sammlung Cl. Müller“ (2 ♂ ♂, ZSM). – „Bozen 4.6.[18]84 J | Sammlung J. Daniel“ (2 ♂ ♂, 2 ♀ ♀, ZSM). – ohne Fundortetiketten: 4 ♂ ♂, 5 ♀ ♀, ZSM. – „Italien, Meeralpen, Entraque >700 m, 29.-31.V.1992, leg. Zorn“ (2 ♂ ♂, CCZ).

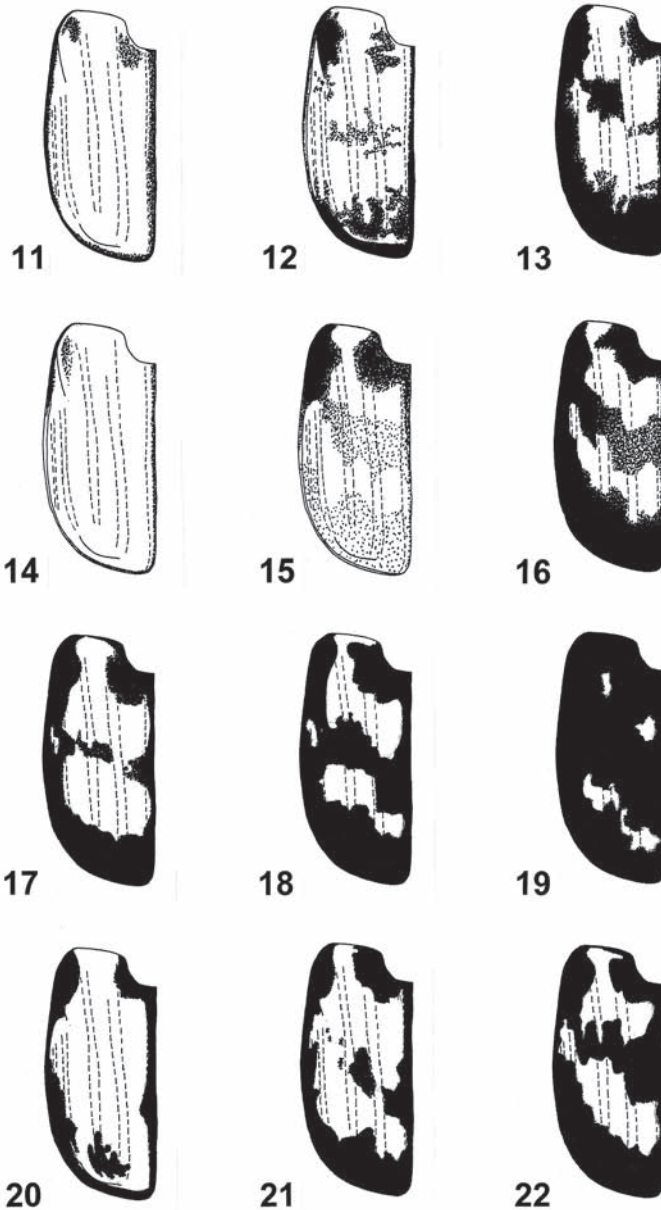
Switzerland: „Helvet. | 24645“ (1 ♂, historical collection, MNHB). – „Helvetia | alte Sammlung“ (1 ♀, ZSM).

[We have also seen the following specimens that we believe were wrongly labelled: France: „Bordeaux | ex museo W. Weber“ (1 ♂, MNHB). – Spain: „Spanien, Malaga“ (1 ♀, MNHB). – Germany: „Germania, Erlangen“ (5 ♂♂, MNHB). – Bulgaria: „Bulgaria oc., Kamtschia, 22.VI.1985, leg. F. Wolf“ (1 ♂, CER).] – Russia: „Ross. m. | Sammlung Cl. Müller“ (1 ♀, ZSM).]



**Figs 6-10:** *Exomalta succincta*, France, Basses Alpes, St. Andire, ♂. – 6: Aedeagus, dorsal. – 7: Aedeagus, ventral. – 8: Aedeagus, lateral. – 9: Last joint and inner claw (outer claw not shown) of right fore tarsus. – 10: Pronotum and scutellum.





Figs 11-22: Colour pattern of left elytron. – 11-16: *Exomala campestris* – 17-22: *Exomala succincta* – 11-13, 17-19: ♂♂. – 14-16, 20-22: ♀♀. – 11, 14, 17, 20: Specimens with reduced dark marks. – 12, 15, 18, 21: Specimens with moderately developed dark marks. – 13, 16, 19, 22: Specimens with well developed dark marks. – 11: Gallia mer. – 12: France. – 13: Gironde: La Teste. – 14: France. – 15: France. – 16: Gironde: Soulac-sur-Mer. – 17: Tirol. – 18: Tirol mer. – 19: Tirol. – 20: Emilia, Reno. – 21: Piemonte: Garearel. – 22: Bolzano.





Figs 23-34: Male genitalia. – 23, 25, 27, 29, 31, 33: parameres in dorsal view. – 24, 26, 28, 30, 32, 34: parameres in ventral view and ventral plate. – 23-26: *Exomala campestris*. – 23, 24: [Spain] Ponferrada (SMTD). – 25, 26: [France] Cauterets, Hautes Pyrenées (SMNS). – 27-30: *Exomala succincta*. – 27, 28: [Italia] Tirol (ZMHUB). – 29, 30: [Italia] Bozen (SMTD). – 31, 32: *Exomala adriatica* [Albania] Valona (SMTD). – 33, 34: *Exomala bileki* [Turkey] Buglan Gecidi (CER).

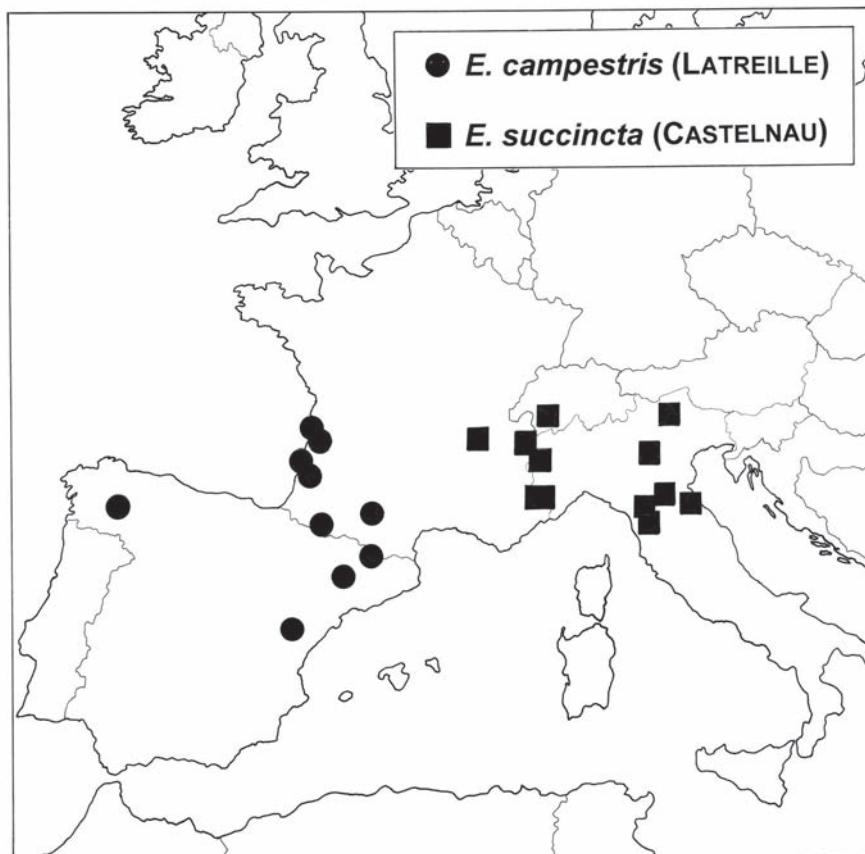


Fig. 35: Collecting localities of the examined material of *Exomala campestris* (circles) und *Exomala succincta* (squares).

#### Description:

Head, pronotum and scutellum black, shining, often with weak metallic lustre. Elytra yellowish brown, moderately shining; dark marks almost always well developed (figs 17-22); usually more or less broadly blackened along the periphery, on the umbone and on the area around the scutellum, and with a transversal black band.

Clypeus broadly rectangular; sides parallel; fore edge reflexed and weakly convex; anterior angles rounded; punctation transversely rugose; clypeus sparsely, forehead and vertex densely covered with erect, light-coloured setae; with very dense, rugose punctation.

Antennal club rather short, outer face of last antennomere distinctly convex.

Pronotum laterally with an obtuse, blunt angle (fig. 10); basal margin disappearing before the postero-lateral angles; base straight in front of scutellum (fig. 10); with dense transverse, somewhat rugose punctation and long, erect light-coloured setae.

Scutellum (fig. 10) broadly semicircular; densely punctate, setose.

Elytra (figs 17-22) broadest approximately in the middle; odd intervals feebly convex and weakly setose; all intervals with more or less distinct transverse, rugose punctation.

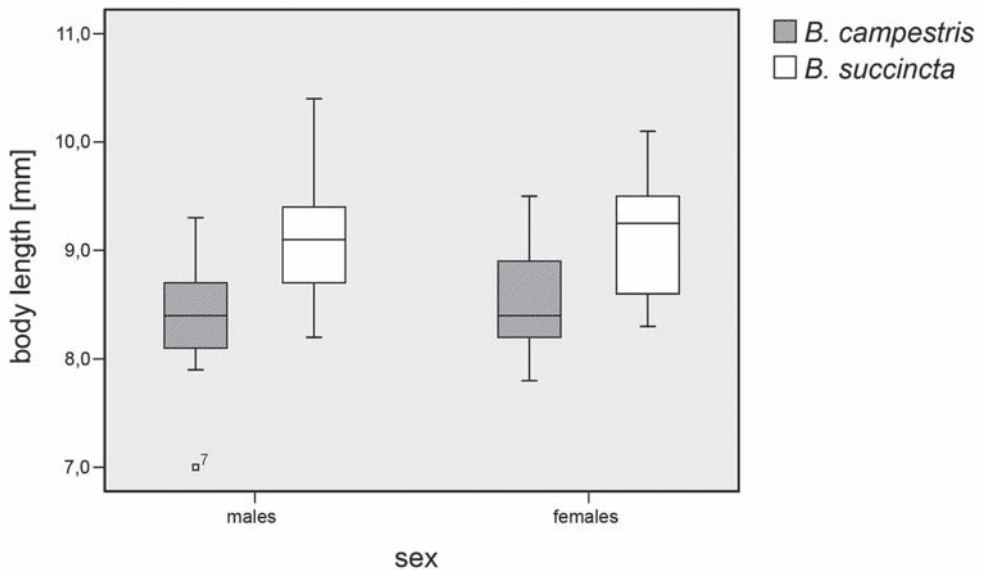


Fig. 36: Boxplots of the body length of males and females of *E. campestris* and *E. succincta*.

Pygidium densely transversely rugose; with moderately dense, long, light-coloured pilosity.

Ventral face and femora with rather long light-coloured setae.

Inner claw of fore tarsi in males (fig. 9) relatively long, approximately half as long as last tarsal joint.

#### Distribution:

In fig. 23 the locality data of the examined material are mapped. According to our data and recent literature, the distribution patterns of *E. campestris* and *E. succincta* can be described as follows.

The distribution area of *Exomala campestris* lies roughly in the triangle between the Pyrenees, the Cantabric mountains and the Iberian Central sierras (Sistema Central). In the south the species reaches Madrid and Guadalajara (BÁGUENA 1967: 435, sub: *Blitopertha campestris*). In the north its distribution area includes the French Pyrenees and the lowlands of Landes and Médoc up to the Atlantic Ocean.

In general terms *E. succincta* is a species of the southern Alp valleys, distributed from Lyon in the west to Slovenia in the east. In Italy its distribution area does also include the northern Apennines (Emilia-Romagna, Toscana).

Therefore, according to the available data, *E. campestris* and *E. succincta* show an allopatric distribution, their respective geographic ranges are neither overlapping nor connected. They are separated by the Rhône valley, the Massif Central and the Cévennes in central France.

#### Differential diagnosis:

The differences on which the very similar species *E. campestris* and *E. succincta* can be separated are given in the table below.

Tab. 1: Morphological differences between *E. campestris* and *E. succincta*.

character	<i>E. campestris</i>	<i>E. succincta</i>
inner claw of fore tarsi ( $\sigma$ )	shorter than half the length of last tarsal joint (fig. 4)	as long as half the length of last tarsal joint (fig. 9)
body length	7.0-9.5 mm (mean 8.48 mm) (fig. 6, table 2)	8.2-10.4 mm (mean 9.13 mm) (fig. 36, table 2)
antennal club ( $\sigma$ )	elongate, outer face of last antennomere weakly convex	less elongate, outer face of last antennomere distinctly convex
pronotum	sides evenly rounded (fig. 5); basal margin reaching postero-lateral angles, sometimes very faint there; base in front of scutellum evenly rounded, convex (fig. 5)	sides with an obtuse, blunt angle (fig. 10); basal margin disappearing before the postero-lateral angles; base in front of scutellum straight (fig. 10)
scutellum	mostly narrow and elongate, rarely semicircular (fig. 5)	wide, semicircular (fig. 10)
elytra	dark marks usually reduced, transversal band rarely distinct (figs 11-16)	dark marks, including the transversal band, almost always well developed (figs 17-22) [cf. ROBERT (1992): fig. 2, sub: <i>Blitopertha campestris</i> LATR.]
male genitalia	sides of parameres straight in dorsal view (fig. 1); each paramere evenly narrow before the apex, in ventral view (fig. 2); ventral plate narrow and elongate (fig. 2)	sides of parameres sinuate in dorsal view (fig. 6); each paramere broadened before the apex, in ventral view (fig. 7); ventral plate trapezoidal, very wide basally (fig. 7)

Tab. 2: Body length of males and females of *E. campestris* and *E. succincta* (minimum, maximum, mean, standard deviation, median). The differences in mean between *E. campestris* and *E. succincta* (males, females and overall) are highly significant (T-test,  $p < 0.01$ ).

	sex (n)	min	max	mean	SD	median
<i>E. campestris</i>	males (13)	7.0	9.3	8.35	.555	8.40
	females (29)	7.8	9.5	8.54	.455	8.40
	overall (42)	7.0	9.5	8.48	.489	8.40
<i>E. succincta</i>	males (45)	8.2	10.4	9.09	.505	9.10
	females (34)	8.3	10.1	9.18	.524	9.25
	overall (79)	8.2	10.4	9.13	.512	9.20

Key to the species of *Neoblitopertha*

- 1 Sides of clypeus parallel; combined lengths of joints 1-4 of fore tarsi in males as long as joint 5 or longer. .... 2
- Clypeus dilated; combined lengths of joints 1-4 of fore tarsi in males distinctly shorter than joint 5; male genitalia: figs 33, 34. (eastern Turkey) ..... *bileki* PETROVITZ, 1968
- 2 Pronotum glabrous on disc, only sides setose; widest a little before the base; basal margin reaching the postero-lateral angles; male genitalia: figs 31, 32. (Montenegro, Albania, Greece) ..... *adriatica* PETROVITZ, 1968

- Pronotum entirely setose; widest approximately in the middle; basal margin indistinct or missing in the area of the postero-lateral angles. .... 3
- 3 Spur of protibia inserted opposite to excision between the two lateral teeth in males (Italy: Calabria, Sicily). .... *leonii* (LUIGIONI, 1932)
- Spur of protibia inserted opposite to basal lateral tooth in males. .... 4
- 4 Inner claw of fore tarsi in males less than half as long as last tarsal joint; sides of pronotum evenly rounded; scutellum most often narrow, rarely semicircular; dark marks of elytra often reduced; male genitalia: figs 1-3, 23-26. (northern Spain, Pyrenees, southwestern France) ..... *campestris* (LATREILLE, 1804)
- Inner claw of fore tarsi in males as long as half the length of the last tarsal joint; sides of pronotum with an obtuse, blunt angle; scutellum broad, semicircular; dark marks of elytra almost always extensive; male genitalia: figs 6-8, 27-30. (Alps and northern Apennines: France, Switzerland, Austria, Italy, Slovenia) ..... *succincta* (CASTELNAU, 1840)

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