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On the *Alevonota* species of the Western Palaearctic region

(Coleoptera: Staphylinidae: Aleocharinae: Athetini)

With 73 figures and 5 maps

Volker Assing and Paul Wunderle

Summary

Types and additional material of Western Palaearctic species of *Alevonota* Thomson, 1858 are revised. 25 species are recognised, two of them are new to science: *A. cretica* sp. n. (Greece: Crete) and the anophthalmous *A. hierroensis* sp. n. (Canary Islands: El Hierro). The genus group name *Liota* Mulsant & Rey, 1874 is revalidated as a subgenus to include only the type species *A. gracilenta* (Erichson, 1839). Within the nominal subgenus, two species groups are distinguished, the *A. rufotestacea* group (9 species) and the *A. kiesenwetteri* group (4 species); the phylogenetic affiliations of most Canarian species have not been examined. 12 species are (re-)described and illustrated. *Alevonota elegantula* (Brisout de Barneville, 1863) and *A. ocaloides* (Brisout de Barneville, 1863) are revalidated. The following synonymies are established: *A. kiesenwetteri* (Kraatz, 1856) = *A. krausei* (Sainte-Claire Deville, 1914), syn. n.; *A. rufotestacea* (Kraatz, 1856) = *A. aurantiaca* (Fauvel, 1895), syn. n. Lectotypes are designated for *Homalota rufotestacea* Kraatz, *H. kiesenwetteri* Kraatz, *H. splendens* Kraatz, 1856, *Aleuonota aurantiaca* Fauvel, and *Homalota mirabilis* Eppelsheim, 1884. Bionomic and zoogeographic data are compiled. The distributions of 9 species are mapped. A diagnostic key and a synonymic catalogue including all the *Alevonota* species of the Western Palaearctic region are provided. Two species are excluded from the genus: *Tropimenelytron mirabilis* (Eppelsheim, 1884), comb. n., and "*Alevonota*" *punctipennis* (Eppelsheim, 1893).

Key words

Coleoptera, Staphylinidae, Athetini, *Alevonota*, *Tropimenelytron*, Western Palaearctic region, taxonomy, new species, revalidation, new synonymies, new combinations, lectotype designations, key to species, catalogue, zoogeography, distributions, ecology, wing dimorphism

New species

Alevonota cretica sp. n.; *Alevonota hierroensis* sp. n.

Zusammenfassung

Typen und weiteres Material von westpaläarktischen Arten der Gattung *Alevonota* Thomson, 1858 werden revidiert. 25 valide Arten werden unterschieden, zwei davon neu für die Wissenschaft: *A. cretica* sp. n. (Griechenland: Kreta) und die anophthalme *A. hierroensis* sp. n. (Kanarische Inseln: El Hierro). *Liota* Mulsant & Rey, 1874 wird als Untergattung mit der Typusart *A. gracilenta* (Erichson, 1839) revalidiert. Innerhalb der Untergattung *Alevonota* werden zwei Artengruppen unterschieden, die *A. rufotestacea*-Gruppe (9 Arten) and die *A. kiesenwetteri*-Gruppe (4 Arten); die phylogenetischen Beziehungen der meisten kanarischen Arten wurden bisher nicht untersucht. 12 Arten werden beschrieben bzw. redeskribiert und abgebildet. *Alevonota elegantula* (Brisout de Barneville, 1863) und *A. ocaloides* (Brisout de Barneville, 1863) werden revalidiert. Die folgenden Synonymisierungen werden vorgenommen: *A. kiesenwetteri* (Kraatz, 1856) = *A. krausei*

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(SAINTE-CLAIRE DEVILLE, 1914), syn. n.; *A. rufotestacea* (KRAATZ, 1856) = *A. aurantiaca* (FAUVEL, 1895), syn. n. Für *Homalota rufotestacea* KRAATZ, *H. kiesenwetteri* KRAATZ, *H. splendens* KRAATZ, 1856, *Aleuonota aurantiaca* FAUVEL und *Homalota mirabilis* EPPELSHEIM, 1884 werden Lectotypen designiert. Für die revidierten Arten werden ökologische und zoogeographische Daten zusammen gestellt. Die Verbreitungsgebiete von neun Arten werden anhand von Karten illustriert. Für die westpaläarktischen Vertreter der Gattung werden eine Bestimmungstabelle und ein Katalog erstellt. Zwei Arten werden aus der Gattung ausgeschlossen: *Tropimenelytron mirabilis* (EPPELSHEIM, 1884), comb. n. und *„Alevonota" punctipennis* (EPPELSHEIM, 1893).

Introduction

In the Palaearctic region, the genus *Alevonota* THOMSON, 1858 is currently represented by 34 species, 22 of them confined to the Western Palaearctic and 12 to the Eastern Palaearctic region (ASSING 2002a; PACE 1999, 2004; SMETANA 2004). The majority of the Western Palaearctic species are microphthalmous or anophthalmous, have reduced hind wings, and are locally endemic to the Canary Islands (eleven species), Malta (one species; not listed by SMETANA (2004)), and central and southern Italy (one species) (ASSING 2002a; PACE 1977, 1999).

The genus has had a history of taxonomic confusion. There have been numerous synonymisations, revalidations, misidentifications, and different interpretations of names by various authors, even in more recent years (see e. g. ALLEN 1991; BENICK & LOHSE 1974; FAUVEL 1895); for more details see the species sections. Moreover, the zoogeographic data currently available from the literature are highly unsatisfactory; the distributions of most widespread species are largely unknown, not plausible, or contradictory.

One of the reasons for this situation may be the "rarity" of virtually all the representatives of the genus. Although at least some of the winged or wing-dimorphic species are more or less widespread, they are collected only accidentally, particularly because of their apparently cryptic and presumably subterranean, but essentially unknown habitats. Several species (e. g. *A. egregia* (RYE, 1876)) are almost exclusively collected on the wing (car-net, window traps), others (e. g. *A. gracilenta* (ERICHSON, 1839)) mostly by pitfall traps.

Material and methods

The material referred to in this study is deposited in the following public and private collections:

BMNH	The Natural History Museum, London (R. G. Booth)
DEI	Deutsches Entomologisches Institut, Müncheberg (L. Zerche)
DZUL	Departamento de Biología Animal (Zoología), Universidad de La Laguna (P. Oromí)
FMNH	Field Museum of Natural History, Chicago (J. Boone, A. F. Newton)
IRSNB	Institut royal des Sciences naturelles de Belgique, Bruxelles (D. Drugmand)
MCSNV	Museo Civico di Storia Naturale, Verona (L. Latella)
MGHNL	Musée Guimet d´Histoire Naturelle, Lyon (J. Clary)
MHNG	Muséum d´histoire naturelles Genève (G. Cuccodoro)
MNHNP	Muséum National d'Histoire Naturelle, Paris (N. Berti)
NHMW	Naturhistorisches Museum Wien (H. Schillhammer)
NMP	Národní Muzeum v Praze (J. Jelínek)
TAU	National Museum of Natural History, Tel Aviv University (A. Freidberg, via B. Feldmann)

DOI: 10.21248/contrib.entomol.58.1.145-189

ZMH	Zoological Museum Helsinki (J. Muona)
cAss	first author´s private collection
cBor	private collection Arnaldo Bordoni, Firenze
cFel	private collection Benedikt Feldmann, Münster
cHen	private collection Sonja Hennicke, Weitenhagen
cKap	private collection Andreas Kapp, Götzis
cKöh	private collection Frank Köhler, Bornheim
cRen	private collection Klaus Renner, Bielefeld
cRos	private collection Armin Rose, Wardenburg
cSch	private collection Michael Schülke, Berlin
cTro	private collection Marc Tronquet, Molitg-les-Bains
cWun	second author´s private collection
cZan	private collection Adriano Zanetti, Verona

The morphological studies were conducted using a Stemi SV 11 microscope (Zeiss Germany) and a Jenalab compound microscope (Carl Zeiss Jena) with a drawing tube. For the photographs a digital camera (Nikon Coolpix 995) was used.

The measurements are abbreviated as follows: HL: length of head from anterior margin of clypeus to posterior constriction; HW: maximal head width; EyL: length of eye in lateral view; PoL: length of postocular region from posterior margin of eye to posterior constriction of head in lateral view; PL: length of pronotum along midline; PW: maximal width of pronotum; EL: length of elytra at suture, from apex of scutellum to elytral hind margin; ML: length of median lobe of aedeagus from apex of ventral process to base; RL: reduced length, from apex of mandibles to posterior margin of elytra.

Elytral length was generally measured from the apex of the scutellum to the elytral hind margin. The length of the postocular region is defined as the distance between the posterior margin of the eyes to the posterior angles of the head in dorsal view.

The maps were generated using the online generic mapping tool (GMT) of the Geomar website at www.aquarius.ifm-geomar.de/omc.

The *Alevonota* species of the Western Palaearctic region

The present study focusses primarily on the winged and wing-dimorphic species of the Western Palaearctic region. The Canarian representatives were studied earlier (Assing 2002a), but are included in the key to species and in the catalogue at the end of this paper. Three species were not studied either because the type material was not found in the collections of the MNHNP (*A. lentipes* (Peyerimhoff), *A. fulvastra* (Peyerimhoff) (Taghavian, e-mail 4 March, 2008) or because an interpretation was possible based on the original description, as was the case for the locally endemic species *A. melitensis* Pace.

Morphologically, the genus is weakly defined. *Alevonota* species generally share the following characteristics: subparallel body shape (not applicable to most Canarian representatives); weakly transverse pronotum; small (often completely reduced) to moderately large eyes; usually more or less pale-coloured antennae; antennomeres V-X moderately to strongly transverse; postgenal carinae more or less reduced (usually visible only posteriorly in lateral view); short and slender, apically bifid ligula; pubescence of pronotal midline directed caudad (occasionally except for anterior 1/5); metatarsomeres I and II of subequal length; abdomen sparsely punctate; median lobe of aedeagus of the usual athetine morphology, without distinctly sclerotised structures in internal sac; apical lobe of paramere rather slender; spermatheca more or less S-shaped.

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Based on morphological evidence, the genus group name *Liota* MULSANT & REY, 1874 is revalidated to include the type species of *Liota*, *A. gracilenta*; for a more detailed discussion see the section on this species. The remaining Western Palaearctic representatives of the genus, including also *A. sollemnis* ASSING, but exclusive of other Canarian species, are attributed to the nominal subgenus. Owing to the highly derived morphology of the vast majority of Canarian *Alevonota*, which can be explained as the result of an adaptation to subterranean crevices and other endogean habitats, their phylogenetic affiliations are difficult to assess based on morphological data alone.

Within the nominal subgenus, two species groups can be distinguished. The species of the *A. rufotestacea* group are characterised by strongly transverse antennomeres IV-X (2.5-3 times as wide as long), pronounced microreticulation of the head and pronotum, and by the unmodified male abdominal tergite VII. The members of the *A. kiesenwetteri* group, on the other hand, share antennae with less transverse antennomeres IV-X, a usually less pronounced microsculpture of the forebody, and a pronounced, clearly synapomorphic sexual dimorphism of the male abdominal tergite VII. The latter group includes *A. kiesenwetteri*, *A. ocaloides*, *A. egregia*, and *A. laeviceps*. The remaining species, including the Canarian *A. sollemnis*, refer to the *A. rufotestacea* group.

All Western Palaearctic representatives of the genus seem to have a subterranean habitat. The microphthalmous and anophthalmous species are usually collected only by methods such as soil-washing, soil sifting, and traps placed in deeper soil strata or cave systems. The winged or wing-dimorphic species are mostly recorded - more or less accidentally, either on the wing or with pitfall traps, rarely with other methods - during their dispersal period in spring and summer; records from other seasons are extremely rare or absent. According to previous authors (e. g. BENICK & LOHSE 1974), they are associated with burrows of mammals, but this hypothesis is supported neither by systematic studies of the entomofauna of mammal nests and burrows, nor by other evidence. The true reproduction habitats of these species are essentially unknown. Thus, the ecological data available are remarkably similar to those known for the previously revised aleocharine genera *Callicerus* GRAVENHORST, 1802 and *Pseudosemiris* MACHULKA, 1935 of the Athetini, as well as *Ilyobates* KRAATZ, 1856 and *Amarochara* THOMSON, 1858 of the Oxypodini (ASSING 1999a, 2001a, 2002b).

Alevonota (*Alevonota*) *rufotestacea* (KRAATZ, 1856) (Figs 1-19, Map 1)

Homalota rufotestacea KRAATZ, 1856: 245 f.
Homalota atricapilla MULSANT & REY, 1852: 21.
Aleuonota aurantiaca FAUVEL, 1895: 95; **syn. n.**

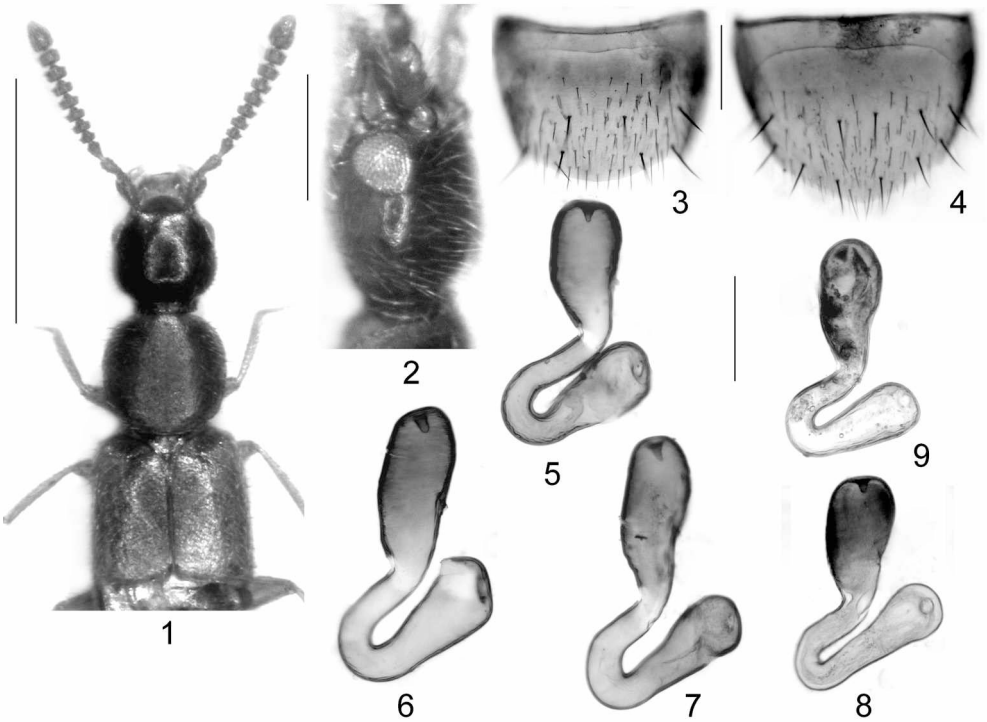
Type material examined:

H. rufotestacea: Lectotype ♀, here designated: "Syntypus / coll. Kraatz / atricapilla Muls. German. / testacea Kr. / Lectotypus ♀ *Homalota rufotestacea* Kraatz desig. V. Assing 2007 / Alevonota rufotestacea (Kraatz) det. V. Assing 2007" (DEI). Paralectotype ♀ [without head]: "Bonn / coll. Kraatz / Syntypus / Alevonota elegantula (Brisout) det. V. Assing 2007" (DEI).

A. aurantiaca: Lectotype ♂, here designated: "Fresney le Puceux / Coll. et Det. Fauvel, Ath. (Aleuonota) aurantiaca Fvl., R. I. Sc. N. B. 17.479 / Lectotypus ♂ *Aleuonota aurantiaca* Fauvel desig. V. Assing 2007 / Alevonota rufotestacea (Kraatz) det. V. Assing 2007" (IRSNB). Paralectotypes: 1 ♀: "Croatie / =rufotestacea of my coll. / aurantiaca Fvl. / Coll. et Det. Fauvel, Ath. (Aleuonota) aurantiaca Fvl., R. I. Sc. N. B. 17.479" (IRSNB); 1 ex.: "Croatie / Coll. et Det. Fauvel, Ath. (Aleuonota) aurantiaca Fvl., R. I. Sc. N. B. 17.479" (IRSNB); 1 ♀: "Guildford, Surrey, G. C. C. / rufotestacea / Coll. et Det. Fauvel, Ath. (Aleuonota) aurantiaca Fvl., R. I. Sc. N. B. 17.479" (IRSNB); 1 ♂: "[locality illegible] / Coll. et Det. Fauvel, Ath. (Aleuonota) aurantiaca

DOI: 10.21248/contrib.entomol.58.1.145-189

Fvl., R. I. Sc. N. B. 17.479" (IRSNB); 1 ♀: "Limoges, 4 / Coll. et Det. Fauvel, Ath. (Aleuonota) aurantiaca Fvl., R. I. Sc. N. B. 17.479" (IRSNB); 1 ex.: "Ozieri, Sardaigne / Coll. et Det. Fauvel, Ath. (Aleuonota) aurantiaca Fvl., R. I. Sc. N. B. 17.479" (IRSNB); 1 ex.: "Corse / Coll. et Det. Fauvel, Ath. (Aleuonota) aurantiaca Fvl., R. I. Sc. N. B. 17.479" (IRSNB); 1 ♂: "Miskoutine / Coll. et Det. Fauvel, Ath. (Aleuonota) aurantiaca Fvl., R. I. Sc. N. B. 17.479" (IRSNB); 1 ♀: "Apennins d'Ombrie, feuilles mortes / Coll. et Det. Fauvel, Ath. (Aleuonota) aurantiaca Fvl., R. I. Sc. N. B. 17.479" (IRSNB).



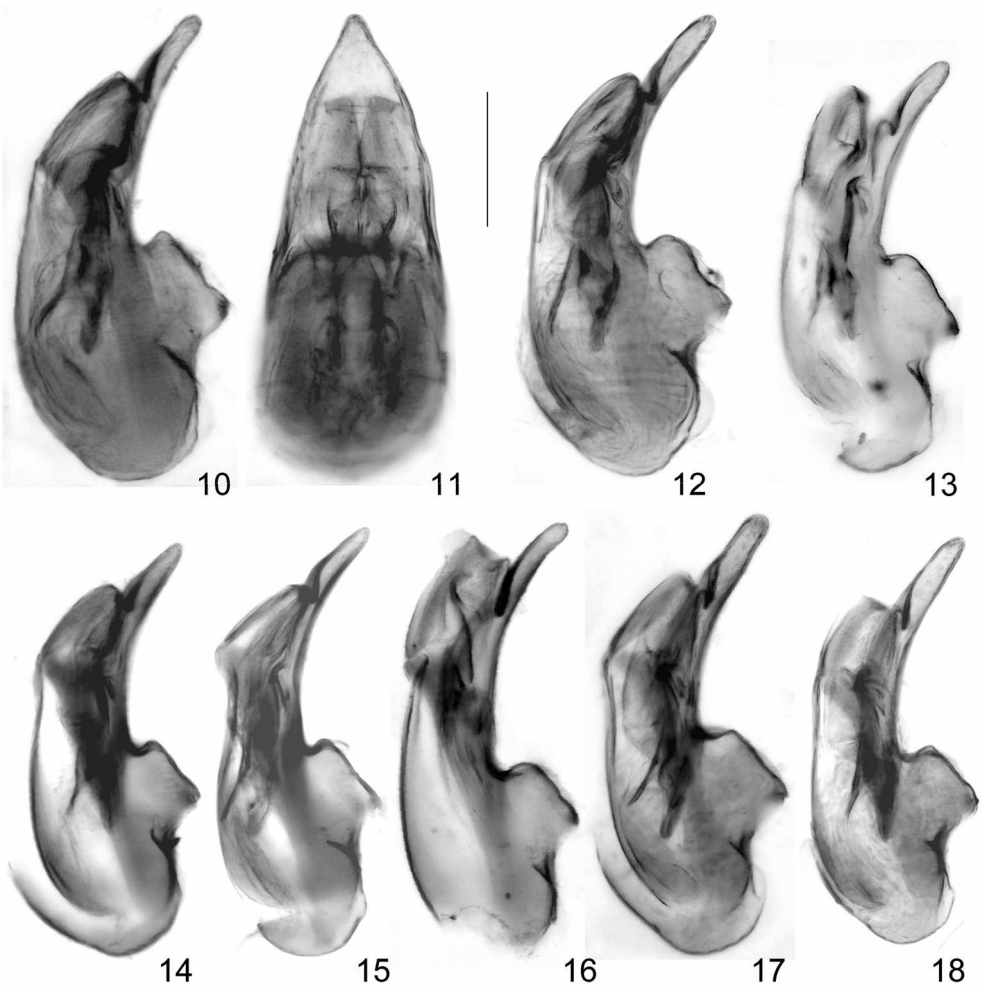
Figs 1-9: *Alevonota rufotestacea* (Kraatz): forebody (1); head in lateral view (2); male tergite VIII (3); male sternite VIII (4); spermathecae of females from Germany (5-7) and Turkey (8-9). Scale bars: 1: 1.0 mm; 2-4: 0.2 mm; 5-9: 0.1 mm.

Comments:

The original description of *H. rufotestacea* is based on an unspecified, but apparently low number ("aeusserst selten") of syntypes collected "im mittleren und südlichen Deutschland" (Kraatz 1856). Two female syntypes were located in the Kraatz collection at the DEI; they are apparently not conspecific. One of them is in agreement with the present interpretation of *A. rufotestacea*, the other, a specimen without head, probably refers to *A. elegantula*. The former is here designated as the lectotype.

Evidently misinterpreting *A. rufotestacea* (Kraatz), Fauvel (1895) made the name *Aleuonota aurantiaca* available as a "nom. nov." for the interpretation [sic] of *A. rufotestacea* by "Rye, Sharp, Fowler (non Kr.)". Consequently, his referring the new name to descriptions provided by the three British authors represents an original description through indication. Since types are not specified, the specimens in the Fauvel collection identified by him as *A. aurantiaca* are here considered syntypes. All of them are conspecific with *A. rufotestacea* (Kraatz). A male from northwestern France is here designated as the lectotype.

DOI: 10.21248/contrib.entomol.58.1.145-189



Figs 10-18: *Alevonota rufotestacea* (KRAATZ): median lobe of aedeagus of males from Germany (**10-13**), Mallorca (**14-15**), Istanbul [identification doubtful] (**16**), Antalya (**17**), and Antakya (**18**). Scale bar: 0.1 mm.

Additional material examined:

Tunisia: 1 ex., Le Kef, leg. Normand (ZMH); 1 ex., Le Kef (ZMH); 1 ex., "Tunis", leg. Sahlberg (ZMH); 1 ex., "Tunesien", leg. Reitter (DEI).

Algeria: 1 ♀, Djurdjura, Col de Tizi-N'Kouilal, 1700-1800 m, 7.V.1988, leg. Besuchet, Löbl & Burckhardt (MHNG).

France: Languedoc-Roussillon: 1 ex., Gard, Monoblet, hazelnut litter, 22.X.1982, leg. Löbl (MHNG).

Spain: Mallorca: 9 exs., Son Carrió, swept from water surface of swimming pool, 28.II.2003, leg. Feldmann (cFel, cAss); 3 exs., same data, but IV.2000 (cFel, cAss); 1 ♀ [identification uncertain], Valdemossa, leg. Breit (NHMW); 1 ex., locality not specified, leg. Breit (NHMW).

Switzerland: Genève: 1 ex. [teneral], Vernier, 15.XI.1961, leg. Comellini (MHNG); 1 ex., Vandoeuvres, 16.V.1962, leg. Comellini (MHNG); 1 ex., Bois de la Grille, 26.IV.1962, leg. Comellini (MHNG); 1 ex., Versoix, 20.IV.1988, leg. Besuchet (MHNG); 1 ex., Chancy env., Racleret, flood plain forest, sifted, 22.V.2004, leg. Schülke (Sch). **Ticino:** 1 ex., Mte. Generoso [45°55'N, 09°01'E], 1700 m, moss, 9.VI.1962,

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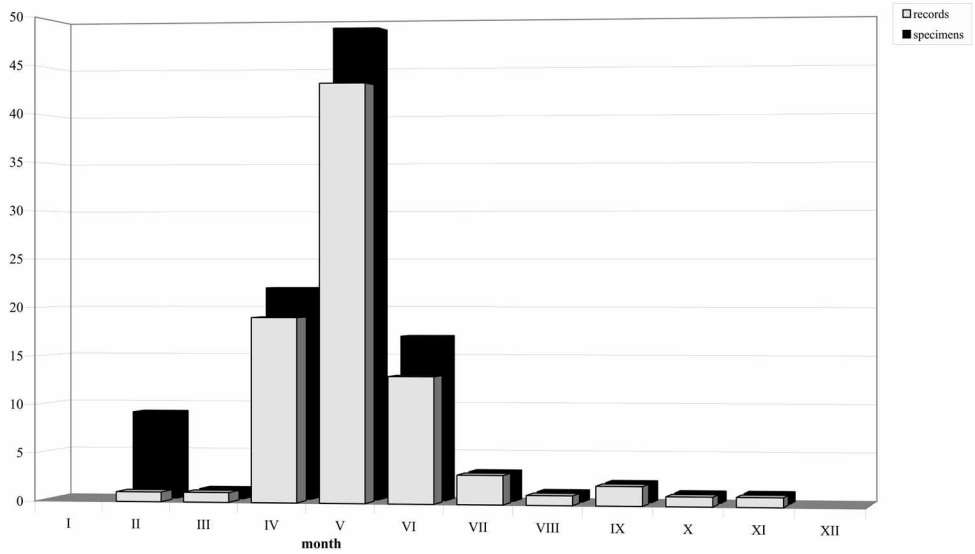

Fig. 19: *Alevonota rufotestacea* (Kraatz): Seasonal distribution of the examined specimens (black bars) and samples/records (grey bars).

leg. Besuchet (MHNG); 1 ex., Novaggio, "avec *Formica rufa*", 10.IX.1965, leg. Besuchet (MHNG); 2 exs., Malcantone Bedigliora, M. dei Mondini, 600 m, pitfall, 28.VI.1993, leg. Monga (cZan). **Valais:** 1 ex., Eich/ Visp, 1000 m, sifted, 12.IX.1984, leg. Besuchet (MHNG).

Italy: Trentino-Alto Adige: 1 ex., Vallarsa [ca. 45°49'N, 11°05'E], leg. v. Friedl (NMP); 1 ex., Terragnolo [ca. 45°53'N, 11°09'E], leg. Jureček (NMP); 1 ex., Folgaria [45°54'N, 11°10'E], leg. Jureček (NMP); 1 ex., Lago di Ledro [ca. 45°53'N, 10°44'E], leg. Strupi (NHMW). **Piemonte:** 1 ex., Terme di Valdieri [44°12'N, 7°16'E] **Veneto:** 1 ex., Bosco del Cansiglio [ca. 46°07'N, 12°28'E], 17.VII.1912 (DEI); 2 exs., Cansiglio, Val Seraie (BL), 5.VII.1956, leg. Bucciarelli (NHMW, cAss); 1 ex., Colli Euganei [ca. 45°19'N, 11°40'E] (NHMW). **Friuli-Venezia Giulia:** 1 ex., Fiume Veneto env., leg. Meyer (NHMW); 2 exs., Trieste, Opcina-Basovizza [45°39'N, 13°52'E], 21.-28.IV.1921, leg. Moczarski & Scheerpeltz (NHMW, cAss). **Emilia-Romagna:** 1 ex., Modena, Montegibbio [ca. 44°30'N, 10°47'E], 11.V.1893 (NHMW); 1 ex., Montegibbio, 1.V.1893, leg. Fiori (MNHUB); 1 ex., Modena, 5.V.1894, leg. Fiori (MNHUB); 1 ex., Santa Maria [ca. 43°55'N, 12°34'E], 10.IV.1897, leg. Fiori (MNHUB). **Toscana:** 1 ex., Alpi Apuane, leg. Paganetti (DEI). **Lazio:** 1 ex., Roma, Roviano, 28.V.1978, leg. Audisio (cZan). **Puglia:** 1 ex., Puglia, Monte Gargano, 25.V.1907, leg. Hilf (DEI). **Calabria:** 1 ex., Antonimina (RC), 800 m, mixed forest, 3.V.1003, leg. Angelini & Sabella (cWun). **Sardegna:** 2 exs., Seui, Mte. Arquieri, 7.V.1902, leg. Dodero (DEI); 1 ex., Mte. Aqueri (NHMW); 4 exs., Aritzo, Mte. Gennargentu, leg. Krüger (DEI, NHMW, cAss); 1 ex., Aritzo (NHMW); 1 ex., locality not specified (DEI); 1 ex., Dorgali, 7.III.1979, leg. Curti (MHNG).

Germany: Schleswig-Holstein: 1 ex., Eutin, Beutiner Holz, 12.V.1916 (DEI); 1 ex., same locality, 24.V.1917 (NHMW); 1 ex., same locality, 16.V.1918 (DEI); 1 ex., same locality, 16.VI.1909 (DEI); 1 ex., same locality, 13.V.1920 (DEI); 1 ex., same locality, 27.V.1908 (DEI). **Nordrhein-Westfalen:** 1 ex., Düren, Gürzenich-Schevenhütte, car-net, 16.V.1989, leg. Wunderle (cWun); 1 ex., Bielefeld, Teutoburger Wald, 30.VI.1987, leg. Renner (cRen); 1 ex. [teneral, nanistic], Höxter, mesobrometum, pitfall, VII.1989 (cAss); 1 ex., Höxter env., Beverungen, pitfall, V.1990 (cAss); 1 ex., Marsberg [51°27'N, 08°51'E], Dahlberg, mesobrometum, pitfall, 5.VII.1992, leg. Lückmann (cFel); 1 ex., same data, but 21.V.1994 (cFel); 1 ex., Marsberg, Kregenberg, mesobromentum, pitfall, 21.V.1994, leg. Lückmann (cFel); 1 ex., same data, but 14.V.1995 (cFel). **Rheinland-Pfalz:** 4 exs., Eifel, Fischbachtal, Neuerburg [49°59'N, 06°57'E], car-net, 1.VI.1990, leg. Wunderle (cWun); 1 ex., Nahetal, Heinzenberg, Kellenbachtal, car-net, 27.V.1986, leg. Wunderle (cWun); 1 ex., Nassau, leg. Buddeberg (NHMW). **Bayern:** 1 ex., Eschenlohe, 22.VI.1925, leg. Ihsssen (MNHUB).

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Hessen: 1 ex., Dautphe-Buchenau, Katzenbachtal, car-net, 30.IV.1988, leg. Wunderle (cWun); 2 exs., same data, but 9.V.1987 (cWun); 1 ex., Oberlais (DEI). **Niedersachsen:** 1 ex., SE Göttingen, Westerberg [ca. 51°30'N, 9°59'E], 2.VI.1992, leg. Borcherding (cAss); 1 ex., Göttingen, Niedernjesa, 15.V.1973, leg. Renner (cRen); 1 ex., Northeim env., Weper, mesobrometum, pitfall, VI.1990, leg. Joger (cAss); 2 exs., 2 km SE Wolfenbüttel, Öselberg, 150 m, pitfall, V.1998, leg. Schmidt (cAss); 1 ex., same data, but IV.1998 (cAss); 1 ex., Alfeld/Leine, Wrisbergholzen, Ortsberg, mesobrometum, pitfall, V.1986, leg. Assing (cAss); 1 ex., same locality, 8.VI.1992, leg. Sprick (cAss); 1 ex., Alfeld/Leine, Siebenberge, Ostenberg, V.2000, leg. Sührig (cAss); 2 exs., S Hildesheim, Steinberg, mesobrometum, pitfall, V.1997, leg. Schmidt (cAss); 1 ex., same data, but VI.1997 (cAss). **Sachsen-Anhalt:** 1 ex., Bad Kösen, Himmelreich [ca. 51°06'N, 11°42'E], 20.V.1929, leg. Maertens (MNHUB); 1 ex., same locality, 30.IV.1950, leg. Dorn (MNHUB). **Thüringen:** 1 ex., Kyffhäuser, "Drei Linden", 9.V.1915, leg. Petry (MNHUB); 1 ex., Sachsenburg, 22.V.1915, leg. Petry (MNHUB); 1 ex., Rüdigsdorf, 26.V.1928, leg. Petry (MNHUB). **Sachsen:** 1 ex., Görlitz, Landeskrone, pitfall, 16.V.1978, leg. Vogel (cZan); 1 ex., Moritzburg (MNHUB).

Poland: 1 ex., Legnica ["Liegnitz"] (DEI).

Czech Republic: 1 ex., Moravia, Brno-Hády, 1.V.1966, leg. Nohel (NHMW); 1 ex., Bohemia, locality not specified (NHMW).

Slovakia: 1 ex., NE Nitria, Jelenec, mixed deciduous forest, leaf litter sifted, 30.V.1983, leg. Dieckmann (cAss).

Austria: Oberösterreich: 1 ex., Steyr (NHMW). **Niederösterreich/Wien:** 1 ex., Schönbühel, VI.1918, leg. Käufel (NHMW); 2 exs., Perchtoldsdorf, Heide, leg. Scheerpeltz (NHMW); 2 exs., SW Wien, Dornbach (NHMW); 1 ex. [with worker of *Lasius fuliginosus* attached to the pin], Wien env., Mariabrunn, 9.V.1967, leg. Holzschuh (NHMW); 1 ex., Wechselgebirge (NHMW); 1 ex., Wechselgebirge, 1888, leg. Ganglbauer (NHMW); 1 ex., S Wiener Neustadt, Bucklige Welt, leg. Mader (NHMW); 1 ex., Kranichberg [47°38'N; 15°58'E], leg. Ganglbauer (NHMW); 2 exs., locality not specified, leg. Haberfelner (NHMW). **Steiermark:** 1 ex., Turnau (NHMW); 1 ex., Graz env. (NHMW); 3 exs., Rottenmanner Tauern (NHMW). **Kärnten:** 1 ex., Karnische Alpen, Doberbachtal [ca. 46°35'N, 13°15'E], leg. Strupi (NHMW); 1 ex., "Carinthia" (NHMW). **Locality not specified:** 1 ex., "Oestreich [sic]" (DEI).

Slovenia: 2 ex., "Wochein", leg. Moczarski (NHMW); 1 ex., Postojna, Trakova dolina, 23.VIII.1958, leg. Mandl (NHMW).

Croatia: 1 ex., N Rovinj, Canal di Leme, 21.-28.IV.1921, leg. Moczarski & Scheerpeltz (NHMW); 1 ex., Plitvica (DEI); 1 ex., Plitvica, leg. Strupi (cZan); 1 ex., Otočac (ZMH); 1 ex., Mljet island, leg. Moczarski (NHMW); 1 ex., Split road to Malaćka, 4.5 NW Kaštela, 300 m, 5.VI.2006, leg. Schuh (cAss); 1 ex., locality not specified (NHMW).

Romania: 3 exs., Baile Herculane, leg. Breit, Ganglbauer, Hilf (DEI, NHMW); 1 ex., Cocos Monastry near Niculitel [approx. 45°09'N, 28°27'E], leg. Breit (NHMW); 1 ex., Mehadia, leg. v. Bodemeyer (NHMW).

Bosnia-Herzegovina: 1 ex., Kraljevska Sutjesca [44°07'N, 18°12'E], 300-600 m, car-net, 15.V.1990, leg. Wunderle (cWun); 1 ex., Bjelasnica planina, leg. Leonhard (DEI); 1 ex., Bjelasnica planina, peak region (DEI); 1 ex., locality illegible, 1000 m, 26.VI.1891, leg. Leonhard (DEI).

Yugoslavia: 1 ex., E-Serbia, Rtanj planina, leg. Breit (NHMW); 1 ex., Tara planina, S Perućac, 500 m, 22.V.1984, leg. Besuchet (MHNG).

Montenegro: 1 ex., Col Crkvine, 1000 m, 22.V.1984, leg. Besuchet (MHNG).

Bulgaria: 1 ex., Ali Botusch, near Goleshovo, 41°24'N, 23°35'E, 1015 m, beech forest, 15.VI.1997, leg. Behne (DEI).

Greece: mainland: 1 ex., Ipiros, 11 km S Konitsa, 400-450 m, 30.IV.1973, leg. Löbl (MHNG); 1 ex., Thessalia, Larissa, Oros Ossa, above Stomio, 39°51'N, 22°24'E, 500 m, mixed deciduous forest, 5.IV.2001, leg. Zerche & Behne (DEI); 1 ex., Thessalia, Larissa, Oros Ossa, above Stomio, 39°51'N, 22°43'E, 700 m, oak and fir forest, 5.IV.2001, leg. Zerche & Behne (cAss). **Zakinthos:** 1 ex., Katastarion, 23.IV.1971, leg. Hauser (cB). **Corfu:** 1 ex., Val di Ropa, 1905, leg. Leonhard (DEI); 1 ex., Mathias, leg. Winkler (NHMW); 1 ex., locality not specified, leg. Winkler (NHMW); 1 ex., locality illegible (DEI).

Turkey: Istanbul: 2 exs., Istanbut-Sile, Taşdelen forest, 28.V.1967, leg. Besuchet (MHNG, cAss). **Zonguldak:** 1 ex., 17 km N Safranbolu, 1000 m, 16.V.1976, leg. Besuchet & Löbl (MHNG). **Sinop:** 1 ex.,

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Çangal Dağı, 7.–15.VI.1960, leg. Schubert (NHMW); 2 exs., Çangal Dağı, 16.-26.V.1957, leg. Schubert (NHMW, cAss). **Antalya:** 1 ex., Antalya env., Termessos, 36°59'N, 30°28'E, 700-850 m, 21.IV.2001, leg. Brachat & Meybohm (cAss); 1 ex., valley SE Termessos, 36°57'N, 30°29'E, 300 m, 22.IV.2001, leg. Brachat & Meybohm (cAss). **Isparta:** 1 ex., Eğridir-Çandır, 950 m, 6.V.1975, leg. Besuchet & Löbl (MHNG). **Konya:** 1 ex., Beyşehir env., Yeşildağ, swept from vegetation, 14.V.2000, leg. Brachat & Meybohm (cAss). **Mersin:** 1 ex., Anamur env., 10 m, swept from vegetation, 16.V.2000, leg. Brachat & Meybohm (cAss). **Kahramanmaraş:** 1 ♀, ca. 35 km SW Kahramanmaraş, Doluca, 37°22'N, 36°40'E, 1280 m, 27.IV.2004, leg. Brachat & Meybohm (cAss). **Antakya:** 2 exs., NW Teknepinar, Kızıldağ, 36°11'N, 35°59'E, 28.IV.2002, leg. Brachat & Meybohm (cAss); 1 ex., 22 km S Antakya, S Şenköy, 36°01'N, 36°07'E, 940 m, oak, beech, and laurel shrubs, sifted, 2.IV.2004, leg. Schülke (cSch).
Israel: 1 ex., Galilee, Mt. Meron, 900 m, 21.IV.1982, leg. Besuchet & Löbl (MHNG); 1 ex., coast, Mt. Carmel, 500 m, 17.IV.1982, leg. Besuchet & Löbl (MHNG).
Locality not specified or illegible: 7 exs. (DEI, NHMW); 3 exs., "Sondlig" [?] (MNHUB); 1 ex., "Carvini" [?] (MNHUB).

Redescription:

3.1-4.2 mm (abdomen fully extended); RL: 1.2-1.7 mm. Coloration variabel; usual coloration: head dark brown to blackish; pronotum reddish to reddish brown; elytra yellowish to reddish yellow; abdomen reddish, with most of tergite VI, the anterior half of tergite VII, and sometimes also the middle of tergites III-V infuscate; legs yellowish; antennae rufous.

Head approximately as wide as long (HW/HL: usually 0.93-1.02; exceptionally up to 1.08); microsculpture pronounced and composed of isodiametric meshes; puncturation variable, very fine and barely noticeable to moderately coarse and distinct (Fig. 1). Eyes of moderate size (Fig. 2) and usually weakly projecting from lateral contours of head, slightly shorter than postocular region in dorsal view; EyL/PoL: 0.50-0.68. Postgenal carina fine and short, visible only posteriorly in lateral view. Antenna distinctly incrassate apically; antennomere III distinctly shorter than II, coniform, approximately 1.5 times as long as wide; IV-X of gradually increasing width and strongly transverse, approximately 3 times as wide as long (Fig. 1).

Pronotum usually weakly transverse (PW/PL: 1.00-1.10); microsculpture similar to that of head (Fig. 1); puncturation similar to - and as variable as - that of head; along midline with or without very fine furrow; pubescence in midline directed caucad, occasionally cephalad in anterior 1/6-1/4.

Elytra usually approximately as long as pronotum (Fig. 1), more rarely somewhat shorter (EL/PL: 0.78-1.04); puncturation very fine; microsculpture present, but much shallower than that of head and pronotum. Hind wings apparently fully developed.

Abdomen subparallel; tergite IV without anterior impression; puncturation extremely fine and very sparse; microsculpture present everywhere, but shallow, composed of transverse meshes on anterior tergites and of isodiametric meshes on tergite VII; posterior margin of tergite VII with palisade fringe; posterior margin of tergite VIII distinctly convex in both sexes; tergites VII and VIII without apparent sexual dimorphism.

♂: tergite VIII and sternite VIII as in Figs 3-4; median lobe of aedeagus rather small, ML: 0.30-0.35 mm; ventral process weakly curved in lateral view and not conspicuously acute apically (Figs 10-18).

♀: spermatheca as in Figs 5-9.

Intraspecific variation:

Coloration and virtually all morphological characters, especially size, puncturation, and the shape of the pronotum are subject to considerable intraspecific variation. Specimens seen from Turkey and Israel are on average smaller and more slender (especially the pronotum), and their aedeagus

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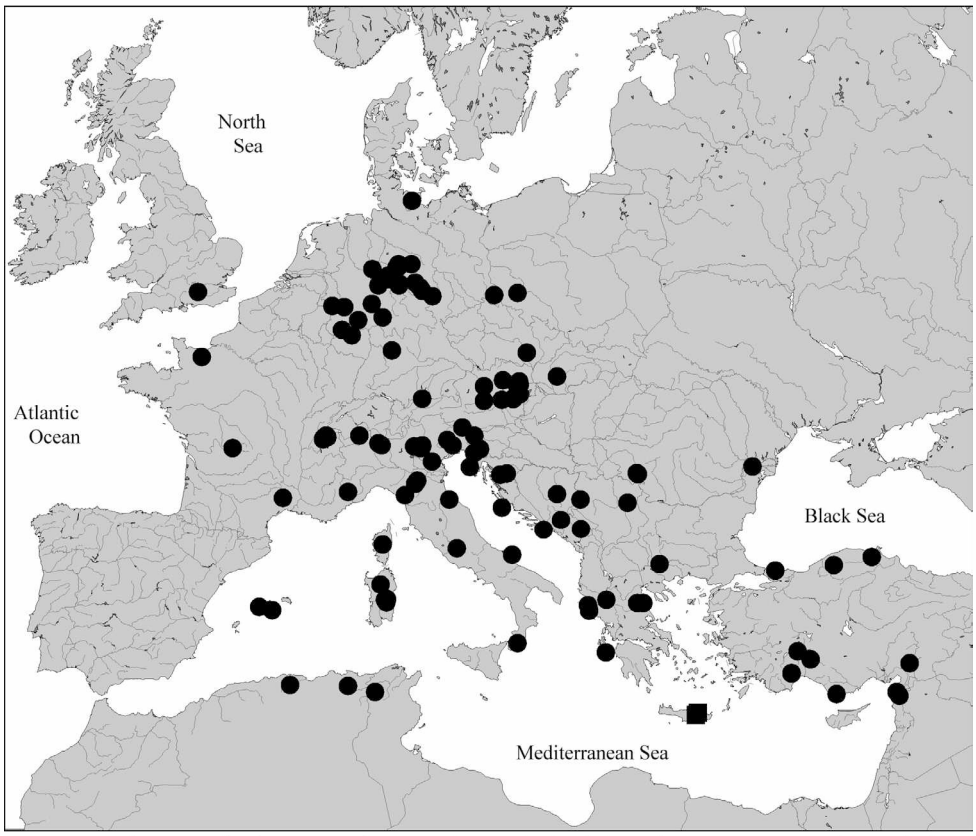


Map 1: Distributions of *Alevonota rufotestacea* (KRAATZ) (circles) and *A. cretica* sp. n. (squares), based on examined records.

is on average slightly smaller, but of similar shape. For illustrations of the variation of the primary sexual characters see Figs 5-18.

Distribution and bionomics:

Based on the revised material, the *A. rufotestacea* is widespread in the south of the Western Palaearctic region, its distribution including North Africa (Algeria, Tunisia), the Baleares, France, England, Central Europe, Italy, southeastern Europe, and the eastern Mediterranean (Turkey, Israel) (Map 1). Since the species was previously confounded with *A. elegantula*, all literature records require confirmation. This also applies to records from Scandinavia (Denmark, Sweden, Norway) (see e. g. LUNDBERG 1995; SÖRENSSON 1981). There is little doubt that records from Hungary (e. g. ÁDÁM 1996) refer to this species. The recent record from Lesbos (ASSING 2005) refers to *A. libanotica*.

The species has been collected in a wide range of forested (mixed forests) and unforested habitats, especially grassland, from near sea-level to 1800 m, with pitfall traps, car-nets, sweep-nets, and by sifting leaf litter; it has also been found in moss and in nests of ants (*Lasius fuliginosus*, *Formica "rufa"*). In northern Germany (Nordrhein-Westfalen, Niedersachsen), it is almost exclusively confined to unforested xerothermous biotopes (calcareous grasslands). The true reproduction habitat is unknown and probably cryptic, as can be inferred from the fact that, with very few exceptions, only single specimens have been collected during the dispersal period.

DOI: 10.21248/contrib.entomol.58.1.145-189

The vast majority of specimens were recorded during the period from April through June, in the Mediterranean on average slightly earlier (April-May) than in Central Europe (May-June). Almost all the records of flying specimens or of specimens evidently preparing for flight (car-net, sweep-net) are in this period. However, on one occasion, flying specimens were also observed in February (Mallorca; 9 specimens). Teneral adults have been collected in July and November (Fig. 19).

***Alevonota* (*Alevonota*) *elegantula* (Brisout de Barneville, 1863), revalidated**
(Figs 20-29, Map 2)

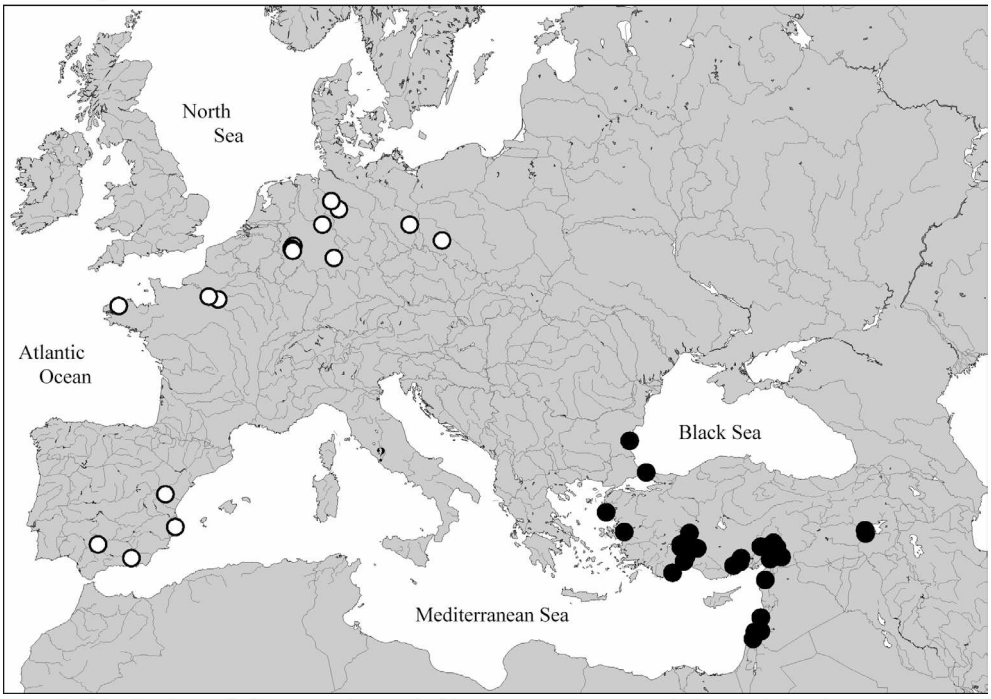
Homalota elegantula Brisout de Barneville 1863: 23 f.

Type material examined:

Syntype ♀: "S. Germain / elegantula" (MNHNP).

Comments:

The original description is based on an unspecified number of syntypes from "Forêt de Saint-Germain" (Brisout de Barneville 1863). The name remained valid until Fauvel (1895, 1897, 1902) placed both *A. elegantula* and *A. rufotestacea* in the synonymy of *A. atricapilla* (Mulsant & Rey, 1852), which was later discovered to represent a junior primary homonym. Reitter (1909) and Bernhauer & Scheerpeltz (1926) synonymised both *A. atricapilla* and *A. elegantula* with *A. rufotestacea*; this synonymy has remained unquestioned ever since (Smetana 2004). The present revision of the type and additional material, however, revealed that *A. elegantula* represents a distinct species, so that the name is here revalidated.



Map 2: Distributions of *Alevonota elegantula* (Brisout de Barneville) (open circles; ?: tentative record based on female only) and *A. libanotica* (Fagel) (filled circles), based on examined records.

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Additional material examined:

Spain: Aragón: 1 ex., 20 km SE Teruel, La Puebla de Valverde, 40°13'N, 00°57'W, 1100 m, sifted, 14.IV.2003, leg. Assing (cAss). **Valencia:** 1 ex., Alicante, Sierra d'Aitana, NW Sella, Port de Tudons, 38°39'N, 00°20'W, 1030 m, sifted, 28.III.2007, leg. Assing (cAss). **Andalucía:** 1 ex., Córdoba, Posadas, 18.IV.1925 (NHMW); 1 ex., Granada, Puerto de la Ragna, 2000-2100 m, 14.V.1960, leg. Besuchet (MHNG). Locality not specified: 1 ex., "Castilien", 9.IV.1887, leg. Korb (NHMW).

France: Bretagne: 1 ex., Morlaix (DEI); 1 ex., Morlaix, leg. Hervé (NHMW). **Île-de-France:** 1 ex., Paris, leg. Fauvel (NHMW).

Italy: Lazio: 1 ♀, Lago di Bracciano, Monti Sabatini, Monte Guerrano, 500 m, 7.V.1998, leg. Wolf (cSch).

Germany: Nordrhein-Westfalen: 1 ex., Köln-Flittard, 15.V.1979, leg. Boneß (cRen); 7 exs., Hürth, car-net, 1.V.1989, leg. Köhler, Wunderle (cWun); 14 exs., Köln env., Brühl, Staatsforst Ville, car-net, 3.V.1989, leg. Köhler (cKöh, cAss); 2 exs., same data, but 24.IV.1989 (cKöh, cAss); 1 ex., same data, but 2.V.1989 (cKöh); 1 ex., same data, but 18.V.1989 (cKöh); 1 ex., same data, but 11.VI.1989 (cKöh); 2 exs., same data, but 14.VI.1989 (cKöh); 1 ex., same data, but 29.VI.1989 (cKöh); 1 ex., Haustenbeck, Senne, 2.V.1995, leg. Renner (cRen). **Hessen:** 1 ex., Fulda, Blankenau, car-net, 1.V.1988, leg. Wunderle (cWun). **Niedersachsen:** 1 ex., Hannover, Eilenriede, car-net, 11.IV.1991, leg. Assing (cAss); 1 ex., same data, but 29.V.1991 (cAss); 1 ex., Nienburg, Lichtenmoor, car-net, 4.V.2006, leg. Lompe (cAss). **Brandenburg:** 1 ex., Spreewald, Burg [51°49'N, 14°09'E], window trap, 20.IV.-6.V.2000, leg. Pütz (cAss).

Poland: 1 ex., Legnica ["Liegnitz"], leg. Letzner (DEI).

Diagnosis:

For a colour image of the habitus see the photo of "*A. rufotestacea*" in TRONQUET (2006). In external appearance similar to *A. rufotestacea*, also rather variable, but distinguished as follows:

Size on average larger, 3.5-4.4 mm (abdomen extended); RL: 1.4-1.9 mm. Coloration on average darker; pronotum usually brown to dark brown; antennae often dark reddish to dark reddish brown; abdomen often almost completely dark.

Forebody as in Fig. 20. Head usually weakly transverse, HW/HL: 1.00-1.07; puncturation on average more distinct (Fig. 21). Eyes larger and more prominent, approximately as long as postocular region in dorsal view; EyL/PoL: 0.68-0.85 (Fig. 22).

Pronotum on average more transverse, PW/PL: 1.07-1.13; puncturation denser and usually distinct; midline with more pronounced furrow (Fig. 21).

Elytra usually slightly longer than pronotum, EL/PL: 1.00-1.08 (Fig. 20).

♂: median lobe of aedeagus larger, ML: 0.36-0.41 mm; ventral process more strongly curved and with more acute apex in lateral view (Figs 25-27).

♀: tergite VIII (Fig. 23), sternite VIII (Fig. 24), and spermatheca (Figs 28-29) of similar shape as in *A. rufotestacea*.

Distribution and bionomics:

Alevonota elegantula has become known from Spain, France, Germany, and Poland, suggesting an expansive Atlanto-Mediterranean distribution (Map 2). The record from Lazio (Italy) should be considered tentative, since it is based only on a female. The records of *A. rufotestacea* from the Pyrenées-Orientales by TRONQUET (2006) apparently refer to *A. elegantula*, as can be inferred from the photograph on plate 19.

Except for two sifted specimens from Spain, all the recently collected specimens were recorded on the wing with car-nets and a window-trap, almost exclusively in forests. The highest record is from 2000-2100 m. The reproduction habitat is unknown. All the known specimens were collected end of March (1 specimen/1 record), April (6/5), May (35/12), and June (4/3), evidently the dispersal period of this species.

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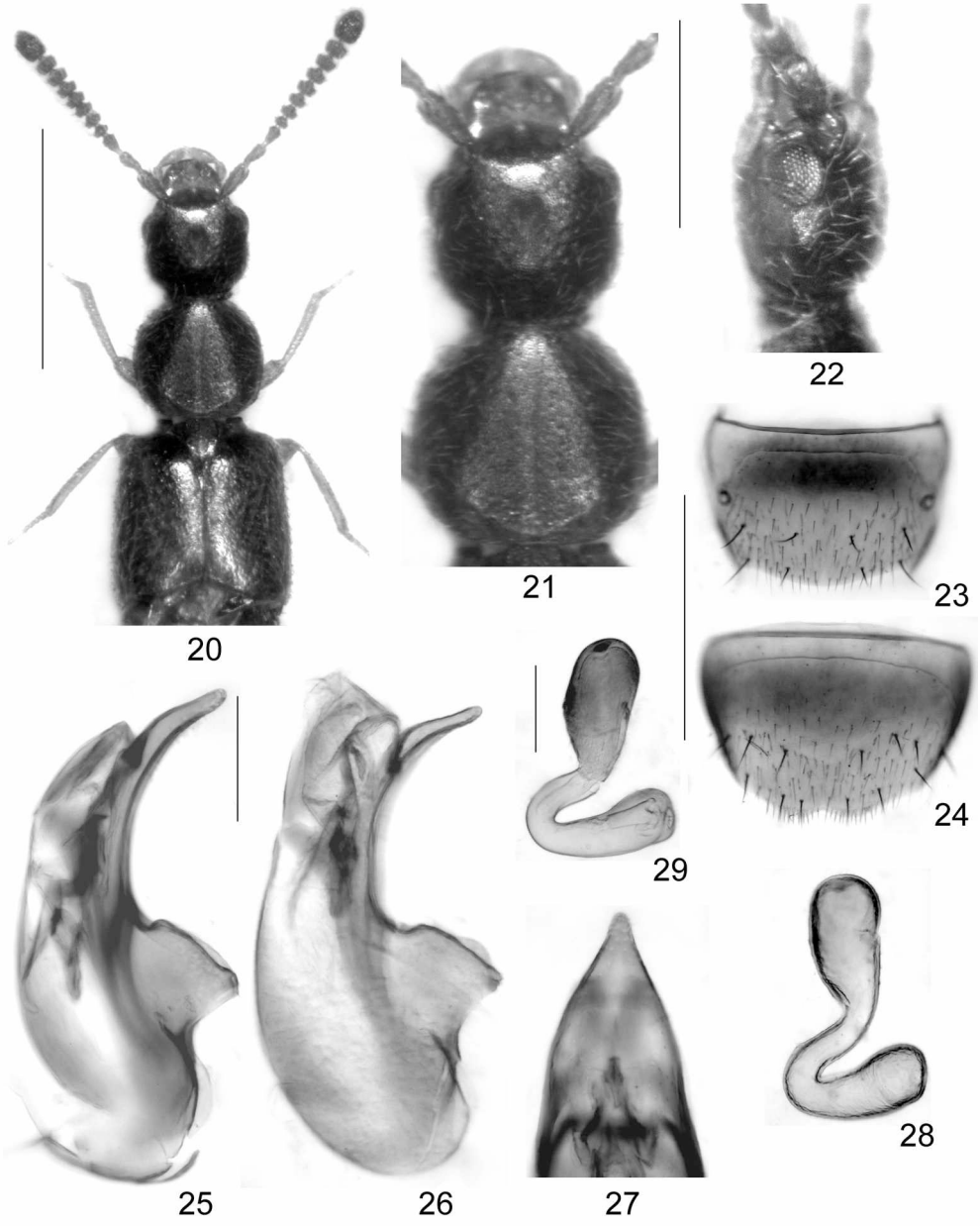

Figs 20-29: *Alevonota elegantula* (Brisout de Barneville): forebody (**20**); head and pronotum (**21**); head in lateral view (**22**); female tergite VIII (**23**); female sternite VIII (**24**); median lobe of aedeagus in lateral view of males from Germany (**25**) and southern Spain (**26**); ventral process of median lobe in ventral view (**27**); spermathecae of females from Germany (**28**) and Spain (**29**). Scale bars: 20: 1.0 mm; 21-24: 0.5 mm; 25-29: 0.1 mm.

DOI: 10.21248/contrib.entomol.58.1.145-189

Alevonota (*Alevonota*) *libanotica* (FAGEL, 1965) (Figs 30-39, Map 2)

Aleuonota libanotica FAGEL 1965: 261 ff.

Type material examined:

Holotype ♀: "Liban: Kartaba, 1200-1400 m, 117, V.1964, G. Fagel / G. Fagel det. Aleuonota libanotica n. sp. / Type / R. I. Sc. N. B., I. G. 24885 / *Alevonota libanotica* (Fagel) det. V. Assing 2007" (IRSNB).

Comment:

The original description is based on a single holotype female from "Liban: Kartaba (vallée du Nahr Ibrahim), 1300 m" (FAGEL 1965).

Additional material examined:
Bulgaria: 1 ♀, Eminska planina, Vlas, 13.V.1987, leg. Behne & Heinig (DEI).
Greece: Lesbos: 1 ♀, Lepetimnos, 39°22'N, 26°17'E, 300 m, 31.III.2005, leg. Lompe & Meybohm (cAss). **Turkey: Istanbul:** 1 ♂ [nanistic specimen with slightly different aedeagus], Belgrat Ormanı [=Belgrader Wald; 41°15'N, 28°45'E], IV.1959, leg. Schubert (cAss). **Izmir:** 1 ♀, Nif Dağı, 38°24'N, 27°24'E, 970 m, 24.IV.2006, leg. Brachat & Meybohm (cAss). **Antalya:** 6 exs., E Kumluca, 36°22'N, 30°22'E, 385 m, litter of sycamore and laurel sifted, 3.IV.2002, leg. Assing, Wunderle (cAss, cWun); 1 ex., N Serik, Selge, 500 m, 16.III.1997, leg. Winkelmann (cSch); 1 ex., 10 km N Beskonak, Köprülü Kanyon, 37°13'N; 31°13'E, 265 m, dry slope, dry litter sifted, 23.III.2002, leg. Rose (cRos). **Isparta:** 1 ex., S Eğridir, Kovada Gölü env., 12.IV.1984, leg. Brachat (cAss); 11 exs., Eğridir-Çandır, 950 m, 6.V.1975, leg. Besuchet & Löbl (MHNG). **Konya:** 5 exs., 18 km SE Beyşehir, 1200 m, 7.V.1978, leg. Besuchet & Löbl (MHNG); 1 ex., Akşehir env., 25.IV.1960, leg. Ressl & Petrowitz (NHMW). **Mersin:** 4 exs., road to Arslanköy, 5 km SE Aladağ, 36°55'N, 34°32'E, 700 m, 2.V.2004, leg. Brachat & Meybohm (cAss); 2 exs., same data, but 36°56'N, 34°30'E, 830 m, leg. Besuchet (cAss); 1 ex., Güzeloluk-Erdemli, S Aydinlar, 36°44'N, 34°08'E, 1380 m, 4.V.2004, leg. Besuchet (cAss); 3 exs., Çamlıyayla-Gözne, 37°06'N, 34°37'E, 570-610 m, 25.IV.2005, leg. Brachat & Meybohm (cAss). **Adana:** 1 ex., Kozan-Feke, 27 km from Kozan, 37°41'N, 35°51'E, 775 m, 25.IV.2007, leg. Brachat & Meybohm (cAss); 1 ex., Tekir, 1000 m, 30.IV.1978, leg. Besuchet & Löbl (MHNG). **Osmaniye:** 1 ex., E Osmaniye, Yarpuz, 37°04'N, 36°24'E, 920 m, 30.IV.2004, leg. Assing (cAss). **Kahramanmaraş:** 1 ex., Ahır Dağı, 10 km WNW Kahramanmaraş, 37°39'N, 36°50'E, 815 m, 11.IV.2005, leg. Assing (cAss); 1 ex., Cimen Dağı, Büyüksir, 37°29'N, 36°39'E, 1020 m, 1.V.2007, leg. Brachat & Meybohm (cAss); 4 exs., 25 km SW Kahramanmaraş, Yeşilyöre, 37°26'N, 36°45'N, 800 m, 23.IV.2007, leg. Brachat & Meybohm (cAss); 1 ex., Başkonuş Yaylası, 37°34'N, 36°34'E, 1270 m, 28.IV.2004, leg. Brachat & Meybohm (cAss). **Antakya:** 1 ex., 19 km S Antakya, SW Şenköy, 36°02'N, 36°07'E, 880 m, pasture, sifted, 5.IV.2004, leg. Schülke (cSch). **Gaziantep:** 1 ex., Kartal Dağı, 37°11'N, 37°08'E, 1070 m, 9.IV.2004, leg. Assing (cAss); 2 exs., Kartal Dağı, W Yamacoba, 37°10'N, 37°05'E, 1200 m, 25.IV.2004, leg. Besuchet, Brachat & Meybohm (cAss). **Bitlis:** 3 exs., Tatvan, 1800 m, V.1976, leg. Schubert (cAss); 2 exs., S Tatvan, 1700-2000 m, 21.V.-18.VI.1973, leg. Schubert (NHMW, cAss).
Israel: 6 exs., Galilee, Mount Meron, Hurfeish, 33°00'N, 35°22'E, 22.II.2005, leg. Starke (cFel, cAss); 2 exs., Golan, Mt. Hermon, 1600 m, 23.IV.1982, leg. Besuchet & Löbl (MHNG, cAss); 1 ex., 'En Ya'aqov [33°00'N, 35°14'E], 23.III.2006, leg. Shtirberg (TAU).

Diagnosis:

3.0-4.2 mm (abdomen extended); RL: 1.4-1.7 mm. In external appearance similar to *A. rufotestacea* (Fig. 30), also rather variable, but distinguished as follows:

Coloration usually similar to that of *A. rufotestacea*, but pronotum occasionally darker.

Head transverse, HW/HL: 1.07-1.13; puncturation on average more distinct; surface often (but not always!) with shallower microsculpture and more shine. Eyes larger and clearly more prominent (Fig. 31), usually longer than postocular region in dorsal view; EyL/PoL: 0.75-0.90 (Fig. 32).

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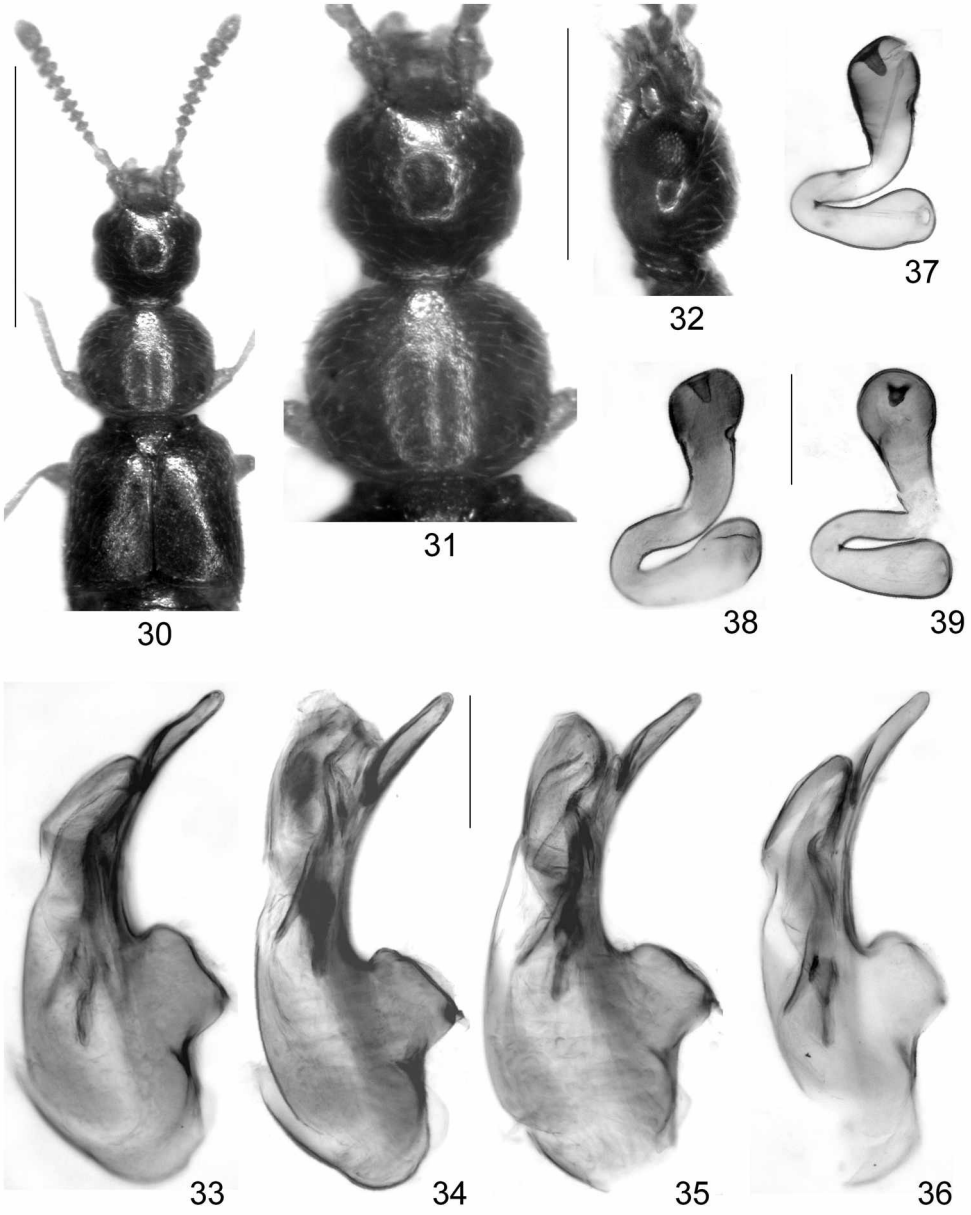

Figs 30-39: *Alevonota libanotica* (FAGEL): forebody (30); head and pronotum (31); head in lateral view (32); median lobe of aedeagus in lateral view of males from Antalya (33) Kahramanmaraş (34), Gaziantep (35), and Bitlis (36); spermathecae of females from Bulgaria (37), Lesbos (38), and Antalya (39). Scale bars: 30: 1.0 mm; 31-32: 0.5 mm; 33-39: 0.1 mm.

Pronotum more transverse, PW/PL: 1.13-1.25; puncturation usually distinct; surface often (but not always!) with shallower microsculpture and more shine; midline with or without fine shallow furrow (Fig. 31).

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Elytra slightly longer than pronotum, EL/PL: 1.02-1.08 (Fig. 30).

♂: median lobe of aedeagus larger, ML: 0.36-0.39 mm; ventral process more strongly curved and with more acute apex in lateral view (Figs 33-36).

♀: spermatheca of similar shape as in *A. rufotestacea* (Figs 37-39).

Distribution and bionomics:

The distribution of this Eastern Mediterranean species ranges from Lesbos and Bulgaria in the west and northwest to Israel in the southeast (Map 2).

As far as is known, the material examined was sifted from leaf litter in various biotopes. The fact that the species was collected in larger numbers on various occasions suggests that its ecology may be somewhat different from that of the preceding species. The upper end of the altitude range is at nearly 2000 m. The species was collected during the period from late winter through spring: February (8 specimens/1 record); March (3/3); April (28/16); May (31/10). Two of the specimens from Bitlis may also have been collected in early June, but the date range is rather inexact (21.V.-18.VI.).

Alevonota (*Alevonota*) *cretica* sp. n. (Figs 40-45, Map 1)

Type material:

Holotype ♂: "N35°11' E025°31', GR Kreta Lassithi, Selia Afhin 1000 m, Meybohm 10.3.2001 / Holotypus ♂ *Alevonota cretica* sp. n. det. V. Assing 2007" (cAss). Paratypes: 1 ♂, 1 ♀: "GR Ostkreta, Nordhang Katharo-Ebene, ca. 1200 m, Meybohm 15.4.2000" (cAss).

Description:

3.4-3.7 mm (abdomen extended); RL: 1.4-1.6 mm. Coloration as in *A. rufotestacea*.

Head as in *A. rufotestacea*, but more transverse, HW/HL: 1.08-1.13; puncturation more distinct and microreticulation shallower than in average *A. rufotestacea*. Eyes larger and clearly more prominent (Fig. 41), approximately as long as postocular region in dorsal view; EyL/PoL: 0.80-0.90 (Fig. 42).

Pronotum more transverse, PW/PL: ca.1.10; puncturation usually distinct; surface with shallower microsculpture and more shine than in average *A. rufotestacea*; midline with very shallow, almost obsolete furrow (Fig. 41).

Elytra slightly longer than pronotum, EL/PL: 1.03-1.12 (Fig. 40).

♂: median lobe of aedeagus slightly larger than in average *A. rufotestacea*, ML: 0.33-0.36 mm; ventral process more strongly curved in lateral view (Figs 43-44).

♀: spermatheca of similar shape as in *A. rufotestacea* (Fig. 45).

Etymology: The name (Latin, adjective) is derived from Crete, where the species was discovered.

Distribution and bionomics:

The species is apparently endemic to Crete (Map 1). The type specimens were collected in March and April at altitudes of 1000 and 1200 m. Additional bionomic data are not available.

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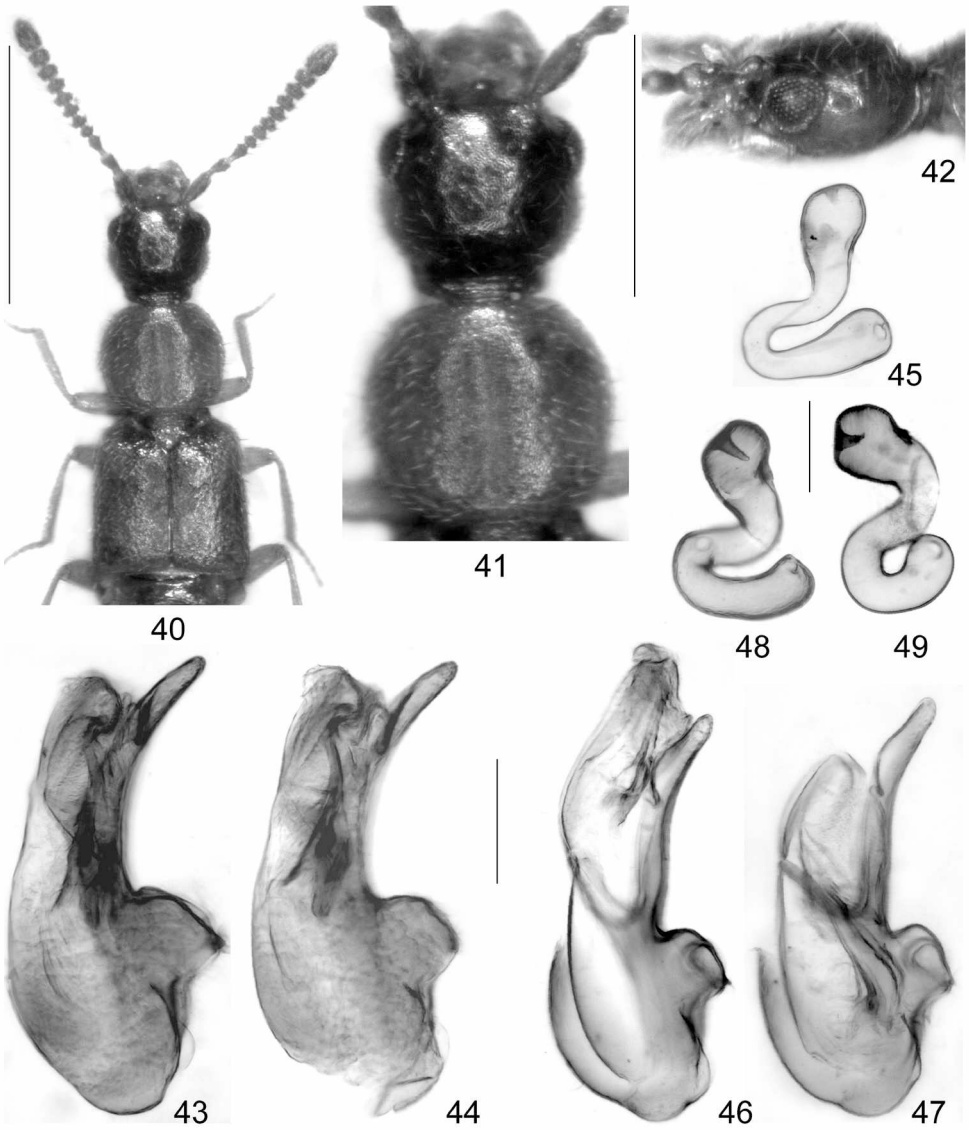

Figs 40-49: *Alevonota cretica* sp. n. (**40-45**) and *A. egregia* (RYE) (**46-49**): forebody (**40**); head and pronotum (**41**); head in lateral view (**42**); median lobe of aedeagus in lateral view of paratype (**43**), holotype (**44**), and of males from Austria (**46**) and Germany (**47**); spermathecae of females from Crete (**45**), Germany (**48**), and Greece (**49**). Scale bars: 40: 1.0 mm; 41-42: 0.5 mm; 43-49: 0.1 mm.

Alevonota (*Alevonota*) *vitalei* (BERNHAUER, 1932) (Figs 64-68)

Aleuonota vitalei BERNHAUER, 1932: 238 f.

Type material examined:

Lectotype ♂ [damaged, both antennae missing], here designated: "Sizilien, 30.1.10, P. Empedocle, Vitale / aurantiaca det. Bernh. / Elytris brevibus / Aleuonota Vitalei Brh. Typus / Chicago NHMus.

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M.Bernhauer Coll. / Lectotypus ♂ *Aleuonota vitalei* Bernhauer desig. V. Assing 2007 / Alevonota vitalei (Bernhauer) det. V. Assing 2007" (FMNH).

Comment:

The original description is based on at least two syntypes - both sexes are described - from "Sizilien: Porto Empedocle" collected by F. Vitale (BERNHAUER 1932). The above male from the Bernhauer collection is here designated as the lectotype. In external morphology, it is indistinguishable from the females seen from Israel (see below).

Additional material examined:

Israel: 1 ♀, Galilee, Mt. Meron, 900 m, 21.IV.1982, leg. Besuchet & Löbl (MHNG); 1 ♀, coast, Mt. Carmel, 500 m, 17.IV.1982, leg. Besuchet & Löbl (cAss).

Diagnosis:

3.0-3.2 mm (abdomen extended); RL: 1.3-1.4 mm. In external morphology (Figs 64-65) and sexual characters highly similar to small specimens of *A. rufotestacea*, but distinguished as follows:

Abdominal tergite VI with distinct anterior transverse impression, this impression almost as deep as those of tergites III-V.

♂: aedeagus with ventral process more strongly bent and apically more acute in ventral view (Fig. 66); ML: 0.30 mm.

♀: spermatheca of similar shape as that of *A. rufotestacea* (Figs 67-68).

Distribution and bionomics:

The species is known only from Sicily and Israel. However, the records from Israel are based only on females and require confirmation. The types and additional specimens were collected in January and April.

Alevonota (*Alevonota*) *crypticola* (PACE, 1977)

Aleuonota crypticola PACE, 1977: 171 ff.

Type material examined:

Holotype ♀: "Lazio, M. Lepini, 25-VI-1975, leg. R. Pace / Holotypus Aleuonota crypticola m., det. R. Pace 1976 / Alevonota crypticola (Pace) det. V. Assing 2008" (MCSNV).

Comment:

The original description is based on a female holotype and a female paratype from "Monti Lepini ... presso Carpineto Romano" (PACE 1977).

Additional material examined:

Italy, Basilicata: 1 ex., [locality illegible], Solari, leg. Fiori (MNHUB).

Diagnosis:

Of similar size as a small specimen of *A. rufotestacea*. Coloration reddish, with the elytra and the legs reddish yellow.

Head approximately as wide as long and of ovoid shape; posterior angles weakly pronounced. Puncturation extremely sparse and very fine, barely noticeable; surface with pronounced microreticulation. Eyes not projecting from lateral contours of head and very small, approximately

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as large as antennomere II in cross-section, composed of less than 10 ommatidia without pigmentation. Antennae of similar morphology as in *A. rufotestacea*, but slightly longer and with slightly less transverse antennomeres IV-X.

Pronotum slightly wider than head (PW/HW: 1.15) and weakly transverse (PW/PL: ca. 1.05); puncturation and microsculpture similar to those of head.

Elytra somewhat shorter than pronotum (EL/PL: ca. 0.75); puncturation fine and ill-defined; microsculpture less pronounced than that of head and pronotum. Hind wings reduced.

Abdomen with posterior tergites with very sparse fine puncturation; anterior tergites with less sparse puncturation; microsculpure shallow, but distinct, composed predominantly of isodiametric meshes; tergite VII without sexual dimorphism; posterior margin of tergite VII without palisade fringe.

♂: ML: 0.32 mm.

♀: spermatheca of similar shape as that of *A. rufotestacea*; for an illustration see the figure in Pace (1977).

Distribution and bionomics:

The species was described from the Monti Lepini in Lazio (Italy) and is here reported from Basilicata, suggesting that it may be more widespread in southern Italy. The adaptive reductions of the eyes, wings, and pigmentation suggest an endogean habitat.

Alevonota (*Alevonota*) *egregia* (Rye, 1876) (Figs 46-49, Map 3)

Homalota egregia Rye, 1876: 176.
Aleuonota egregia (Rye): Benick & Lohse (1974).
Aleuonota aurantiaca (Fauvel): Benick & Lohse (1974); misidentification.

Type material examined:

Holotype ♀: "Caterham, Surrey, G. C. C. / 68-73 (June) [overleaf] / egregia Rye, type / Holotype / Holotype Homalota egregia Rye, 1876; 176, det. R. G. Booth 2007 / *Alevonota egregia* (Rye) det. V. Assing 2007" (BMNH).

Comment:

The original description is based on a single specimen from "Caterham" collected by"evening sweeping in June, 1873" (Rye 1876).

Additional material examined:

France: Nord-Pas-de-Calais: 1 ex., Lille, leg. Desbroch (DEI). **Locality not specified:** 1 ex., "Frankreich" (DEI).
Switzerland: Bern: 1 ex., Burgdorf, 5.V.1978, leg. Kiener (MHNG).
Germany: Nordrhein-Westfalen: 2 exs., Bielefeld, Teutoburger Wald, Hünenburg, car-net, 13.V. 2001, leg. Renner (cFel); 1 ex., Teutoburger Wald, 24.V.1987, leg. Renner (cWun); 1 ex., Teutoburger Wald, Werther-Isingdorf, car-net, 29.IV.1994, leg. Renner (cAss); 1 ex., Bielefeld, 2.VI.1984, leg. Renner (cWun); 2 exs., Düren, Gürzenich-Schevenhütte, car-net, 26.V.1989, leg. Wunderle (cWun); 1 ex., Hürth, car-net, 17.V.1989, leg. Wunderle (cWun); 1 ex., Wuppertal, "Burgholz", 1.VI.1979, leg. Kolbe (cWun); 1 ex., Brühl near Köln, Staatsforst Ville, 9.V.1981, leg. Köhler (cWun); 3 exs., same data, but 3.V.1989 (cWun, cAss); 1 ex., Porta Westfalica, Wittekindsberg, window-trap, VI.1992, leg. Borcherding (cAss). **Hessen:** 1 ex., Dautphe-Buchenau, Katzenbachtal, car-net, 9.V.1988, leg. Wunderle (cWun).

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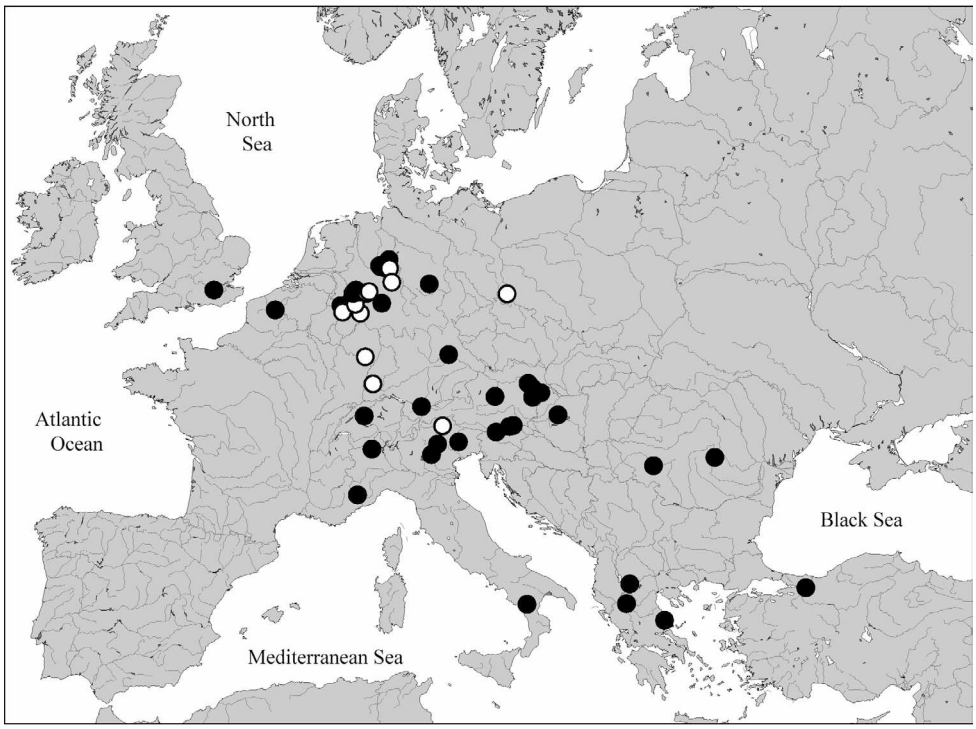

Map 3: Distribution of *Alevonota egregia* (RYE) based on examined records (filled circles) and selected literature records (open circles).

Bayern: 1 ex., Regensburg, Kallmünz env., Schwaighauser Forst, car-net, 30.V.1998, leg. Renner (cRen). **Sachsen-Anhalt:** 1 ex., Uftrungen, Reesberg cave, 17.VII.1988, leg. Hennicke (cHen). **Sachsen:** 1 ex., "Saxon.", leg. Märkel (DEI).

Italy: Trentino-Alto Adige: 1 ex., E Trento, N Roncegno, 700-1600 m, car-net, 26.VI.1995, leg. Assing (cAss). **Piemonte:** 1 ex., Rima San Guiseppe (NHMW); 1 ex., Terme di Valdieri (NHMW). **Veneto:** 2 exs., Alpi Lessini, Piano della Fugazza (NHMW); 1 ex., Cansiglio (NHMW). **Basilicata:** 1 ex., Casteluccio, T. Pesciera, 850 m, 28.V.2002, leg. Kapp (cKap).

Austria: Vorarlberg: 3 exs., Stanzach/Lech, car-net, 24.V.1995, leg. Renner (cAss, cWun); 1 ex., same data, but 28.V.1995 (cAss). **Tirol:** 1 ex., locality not specified (NHMW). **Oberösterreich:** 1 ex., Windischgarsten, leg. Skalitzky (NHMW). **Niederösterreich/Wien:** 1 ex., Wienerwald, Rekawinkel, leg. Skalitzky (NHMW); 1 ex., Rekawinkel, 10.VI.1901, leg. Pinker (NHMW); 2 exs., Baden (NHMW); 1 ex., S Wiener Neustadt, Bucklige Welt, leg. Mader (NHMW). **Steiermark:** 1 ex., Wies env. (NHMW); 1 ex., Soboth (NHMW); 1 ex., locality not specified (NHMW). **Kärnten:** 1 ex., Karawanken, locality illegible, 7.VII.1991, leg Gräf (cWun); 2 exs., locality not specified (MHNG, NHMW). **Burgenland:** 1 ex., Neusiedlersee (NHMW).

Hungary: 1 ex., Balatonfüred, Ajka, Bakony forest, car-net, 25.V.1999, leg. Renner (cFel).

Romania: 1 ex., SE Caransebeş, Munţii Ţarcului ["Mt. Sarco", 45°17'N, 22°28'E], leg. Breit (NHMW); 1 ex., Braşov, leg. Hopffgarten (NHMW).

Greece: 1 ex., Flórina, WNW Flórina, Oros Varnous, 40°49'N, 21°15'E, 1810 m, N-slope below snowfield, grass sifted, 23.V.2005, leg. Assing (cAss); 1 ex., Grevena, Smolikas, SW Smixi, 1450 m, 18.VI.2002, leg. Brachat (cAss); 2 exs., Thessalia, Pelion (NHMW, cAss).

Turkey: Sakarya: 2 exs., Sapanca ["Sabanca", 40°41'N, 30°16'E], V.1962, leg. Schubert (NHMW, cAss).

DOI: 10.21248/contrib.entomol.58.1.145-189

Locality not specified or not idientified: 1 ex., "Jugoslawien, Firžine [?]", VII.1969 (NHMW); 2 exs. (DEI).

Diagnosis:

2.8-3.6 mm; RL: 1.3-1.6 mm. Coloration moderately variable; usual coloration: head, abdominal segment VI, and anterior half of segment VII dark brown to blackish; pronotum reddish brown to dark brown; elytra yellowish brown; abdominal segments III-V and abdominal apex reddish brown; leg yellowish; antennae yellowish brown to reddish brown.

Head weakly transverse (HW/HL: 1.02-1.08); puncturation very fine and sparse, barely noticeable in the pronounced microreticulation. Eyes rather large and prominent, slightly longer than postocular region in dorsal view. Postgenal carina fine and short, visible only posteriorly in lateral view. Antenna rather slender; antennomere III approximately twice as long as wide; IV weakly transverse, usually less than 1.5 times as wide as long; V-IX increasingly transverse and of gradually increasing in width; IX and X approximately twice as wide as long or nearly so.

Pronotum slightly wider than head (PW/HW: 1.09-1.15) and weakly transverse (PW/PL: ca. 1.10); puncturation and microsculpture similar to those of head, occasionally puncturation more distinct.

Elytra slightly longer than pronotum (EL/PL: 1.04-1.12); puncturation usually as fine as that of head and pronotum; microsculpture as pronounced as that of head and pronotum or even coarser. Hind wings fully developed.

Abdomen subparallel; tergite IV with or without shallow anterior impression; puncturation sparse; microsculpture distinct, that of tergites III-VI composed of isodiametric meshes, that of tergite VII of weakly transverse meshes; posterior margin of tergite VII with palisade fringe; tergites VII and VIII with sexual dimorphism.

♂: tergite VII with pair of oblong tubercles near posterior margin; tergite VIII posteriorly produced and more or less truncate in the middle; sternite VIII convex posteriorly, median lobe of aedeagus as in Figs 46-47 (ML: 0.32-0.34 mm).

♀: tergite VIII convex posteriorly; posterior margin of sternite VIII more weakly convex than in ♂, in the middle truncate to weakly concave; spermatheca as in Figs 48-49.

Intraspecific variation:

The species is subject to some variation in size, coloration, and especially the puncturation of the pronotum (more distinct in specimens from Greece) and the microsculpture of the pronotum.

Distribution and bionomics:

The available data suggest a distribution of the Ponto-Mediterranean type. It ranges from northwestern Turkey and southern Greece in the southeast to western France and the south of the British Isles in the west and northwest (Map 3). The species is unknown from Scandinavia (Lundberg 1995; Smetana 2004). The records from Spain by Gamarra (1987) and Gamarra & Outerelo (2005) are erroneous and evidently refer to a species of *Atheta* Thomson, subgenus *Microdota* Mulsant & Rey, as can be inferred from the drawings of the genitalia provided by Gamarra (1987). In Germany, *A. egregia* has been reported from most regions, but is apparently absent from the extreme north (material examined; Köhler & Klausnitzer 1998). In Italy, it is known from the north and the south, including Sicily (material examined; Zanetti 1995).

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Old literature records should be considered doubtful, since the species was confounded with *A. gracilenta* by various authors (e. g. WÖRNDLE 1950). For additional reliable records from France, Belgium, Central Europe, and northern Italy see BAUMANN & KÖHLER (2000), BRUGE et al. (2007), KÖHLER (1996, 2000), KÖHLER & STUMPF (1992), PEEZ & KAHLEN (1977), RENNER (2001, 2005), TRONQUET (1972, 2006), and VOGEL (1982).

Alevonota egregia is a species typically found on the wing. Most of the examined specimens were collected with car-nets, sweep-nets, and window-traps, usually in forested areas; the same is true of literature records (KIENER 1986; PEEZ & KAHLEN 1977; RENNER 2005; RYE 1876; VOGEL 1982). On rare occasions, the species was found also by sifting moss, hazelnut litter, and grass roots near snow, once even in a cave (KRÁSA 1914; PEEZ & KAHLEN 1977; material examined). The altitudes range from near sea-level to 1810 m. The true reproduction habitat of the species is unknown.

The material examined was collected exclusively in spring and early summer, evidently the dispersal period of the species, with a clear maximum in May: April (1 specimens/1 record); May (22/15); June (6/6); July (3/3). Records from other seasons are unknown.

***Alevonota* (*Alevonota*) *laeviceps* (BRISOUT DE BARNEVILLE, 1863)** (Figs 50-51, Map 4)

Homalota laeviceps BRISOUT DE BARNEVILLE, 1863: 23 f.

Type material examined:

Syntype ♀: "Aleuonota laeviceps, Collioure" (MNHNP).

Comment:

The original description is based on an unspecified number of syntypes from "Collioure" (BRISOUT DE BARNEVILLE 1863).

Additional material examined:
Gibraltar: 1 ex., "Gibraltar", leg. Walker (cAss).
Portugal: 1 ex., Alvito (Beja), XII.1997, leg. Poot (cWun).
France: Provence: 1 ex., Cannes, Canal de la Siagne, leg. St. Claire-Deville (NHMW).

Diagnosis:

2.6-3.1 mm; RL: 1.2-1.5 mm. For a colour image of the habitus see the photo of *A. egregia* in TRONQUET (2006). In external appearance similar to *A. egregia*, but distinguished as follows:

Antennae of darker average coloration, usually dark brown to blackish brown. Microsculpture of forebody shallow, less pronounced. Eyes less prominent, approximately as long as or slightly shorter than postocular region in dorsal view. Elytra apparently with weakly pronounced sexual dimorphism.

Abdomen with transverse microsculpture; tergite IV with shallow anterior impression; tergites III-IV with weak, tergites VII-VIII with more pronounced sexual dimorphism.

♂: elytra on either side of suture weakly elevated; tergites III and IV in the middle with weak, ill-defined, almost obsolete elevation; tergite VII at posterior margin with pronounced smooth median tubercle; tergite VIII and sternite VIII as in *A. egregia*; median lobe of aedeagus as in Figs 50-51; ML: 0.30-0.33 mm.

♀: not available for examination.

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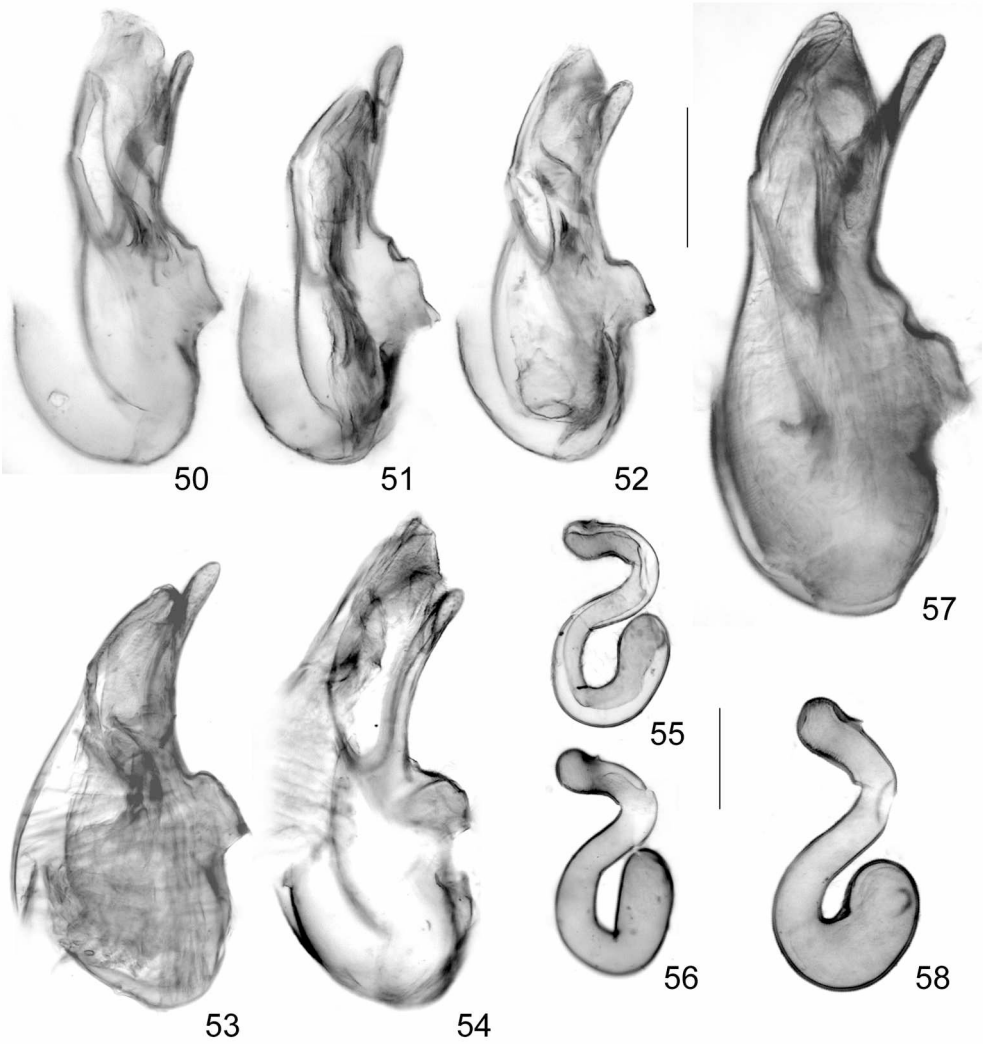

Figs 50-58: *Alevonota laeviceps* (Brisout de Barneville) (50-51), *A. kiesenwetteri* (Kraatz) (52-56), and *A. ocaloides* (Brisout de Barneville) (57-58): median lobe of aedeagus in lateral view of males from Portugal (50), Gibraltar (51), Kefallinia (52), Toscana (53), Corsica (54), and Spain (57); spermathecae of females from Greece (lectotype) (55), Corsica (56), and Spain (58). Scale bars: 0.1 mm.

Distribution and bionomics:

This apparently extremely rare species was previously known only from France and Spain (Smetana 2004). It is here reported from Portugal and Gibraltar for the first time (Map 4). The records of *A. egregia* from the Pyrénées-Orientales and the Forêt de Marly by Tronquet (1972, 2006) probably refer to this species, as can be inferred from the photograph in Tronquet (2006). One of the examined specimens was collected in December. Additional bionomic data are not available.

DOI: 10.21248/contrib.entomol.58.1.145-189

Alevonota (*Alevonota*) *kiesenwetteri* (KRAATZ, 1856) (Figs 52-56, Map 4)

Homalota kiesenwetteri KRAATZ, 1856: 245 f.
Aleuonota krausei SAINTE-CLAIRE DEVILLE: 517 f.; **syn. n.**

Type material examined:

H. kiesenwetteri: Lectotype ♀ [macropterous], here designated: "coll. Kraatz / Syntypus / Kiesenwetteri mihi, Graecia, v. Ksw. / Lectotypus ♀ *Homalota kiesenwetteri* Kraatz desig. V. Assing 2007 / Alevonota kiesenwetteri (Kraatz) det. V. Assing 2007" (DEI).

Comments:

The original description of *H. kiesenwetteri* is based on an unspecified number of syntypes from "Griechenland von Herrn v. Kiesenwetter aufgefunden" (KRAATZ 1856). The single syntype in the Kraatz collection at the DEI is here designated as the lectotype.

Aleuonota krausei was described from four syntypes from Corsica (SAINTE-CLAIRE DEVILLE 1914). The types were not examined, but the material seen from Corsica is in good agreement with the details indicated in the original description, especially regarding the conspicuous male secondary sexual characters. There are some differences in coloration and size between the material from Corsica, Sardinia, and other regions, but since convincing differences were found neither in the male primary and especially in the conspicuous secondary sexual characters nor in the shape of the spermatheca, these differences are attributed to intra- rather than interspecific variation. Consequently, *A. krausei* is here placed in the synonymy of the senior name *A. kiesenwetteri*.

Additional material examined:

France: Corsica: 1 ♂, 3 ♀♀ [macropterous], Col de Sorba [42°08'N, 09°11'E], 1300 m, pine litter, 10.IV.1990, leg. Wunderle (cWun, cAss).
Italy: Toscana: 1 ♀ [macropterous], Alberese (GR), 1.IV.1988, leg. Cenzi (cZan); 1 ♂, same data, but 1.V.1988 (cZan); 6 exs. [2 brachypterous], Monte Argentario, 400 m, sifted from leaves and roots, 22.III.1921, leg. Moczarski & Scheerpeltz (NHMW, cAss). **Lazio:** 1 ♀ [brachypterous], Mte. Circeo, ca. 50 m, *Quercus ilex* forest, 29.XII.1994, leg. Assing (cAss). **Sardinia:** 1 ♀, Monti del Gennargentu, Brunco Spina, 40°01'N, 09°18'E, 1650 m, bank of stream, *Alnus viridis*, 12.V.2005, leg. Hetzel (cFel); 1 ♀ [brachypterous], Sorgono, leg. Krause (NHMW).
Greece: Kefallinia: 1 ♂ [nanistic], Sámi, 2.IV.1971, leg. Löbl (MHNG).

Diagnosis:

2.5-3.3 mm; RL: 1.0-1.5 mm. Wing-dimorphic species. Coloration variable, in brachypterous morph usually paler than in macropterous morph: head and abdominal segments VI-VII/VIII dark brown to blackish; pronotum, elytra, and base of abdomen (segments III-V) usually distinctly paler, yellowish to brown, but occasionally as dark as head; legs with tibiae and tarsi yellowish to yellowish brown, femora usually slightly darker; antennae brown to blackish.

Head weakly transverse (HW/HL: 1.05-1.15); puncturation rather coarse and sparse; interstices with shallow microsculpture and rather shiny. Eyes moderately large and moderately prominent, approximately as long as postocular region in dorsal view, occasionally shorter. Postgenal carina fine and short, visible only posteriorly in lateral view. Antenna with antennomere III approximately twice as long as wide; IV weakly transverse, approximately 1.5 times as wide as long; V-IX increasingly transverse and of gradually increasing width; IX and X approximately twice as wide as long or nearly so.

Pronotum slightly wider than head (PW/HW: 1.08-1.20) and weakly transverse (PW/PL: 1.05-1.10); puncturation as coarse as that of head; interstices on average about as wide as diameter of punctures or narrower; surface with shallow to distinct microsculpture.

DOI: 10.21248/contrib.entomol.58.1.145-189

Elytra in macropterous morph slightly longer than pronotum (EL/PL: 1.05-1.10), in brachypterous morph shorter ((EL/PL: 0.82-0.90); puncturation much finer than that of head and pronotum; interstices with or without very shallow microsculpture. Hind wings fully developed.

Abdomen subparallel; tergite IV usually without, exceptionally with very shallow anterior impression; puncturation sparse, that of posterior tergites extremely sparse; interstices with distinct transverse microsculpture; posterior margin of tergite VII with narrow palisade fringe; tergites III, IV, and VII with sexual dimorphism.

♂: tergites III and IV with pronounced smooth median tubercles; tergite VII with pair of oblong tubercles near posterior margin; sternite VIII obtusely pointed in the middle; median lobe of aedeagus as in Figs 52-54 (ML: 0.28-0.38 mm).

♀: posterior margin of sternite VIII weakly concave in the middle; spermatheca with relatively long duct (Figs 55-56).

Intraspecific variation:

The species is subject to pronounced intraspecific variation of size (also of the aedeagus), coloration, wing length, and microsculpture. The male from Kefallinia is distinctly smaller and has a smaller aedeagus than the material from other localities. The two specimens seen from Toscana, on the other hand are somewhat larger (Figs 52-54). However, since no convincing differences were found in the shape of the aedeagus and in the male secondary sexual characters, the above material is regarded as conspecific.

Distribution and bionomics:

The species is apparenty very rare and known from Corsica, Italy (including Sardinia), and Greece (material examined) (Map 4). Owing to the previous confusion (synonymy) with *A. ocaloides*, most literature records are doubtful. The record from La Massane in the Pyrénées-Orientales by Tronquet (2006) refers to *A. ocaloides*, as can be inferred from the photograph on plate 19.

The material examined was collected at altitudes of 50-1650 m in April, May, and December. Based on the data specified on the labels some of the specimens were sifted from litter of pine, *Quercus ilex*, and *Alnus viridis*, respectively.

***Alevonota* (*Alevonota*) *ocaloides* (Brisout de Barneville, 1863), revalidated**
(Figs 57-58, Map 4)

Homalota ocaloides Brisout de Barneville, 1863: 27 f.

Type material examined:

Syntype ♀ [damaged]: "Vesinet, type unique" (MNHNP).

Comment:

The original description is based on an unspecified number of syntypes from "Vésinet près Paris" (Brisout de Barneville 1863). The name was previously treated as a synonym of *A. kiesenwetteri*, but refers to a distinct species.

Additional material examined:
Portugal: 1 ex., Serra da Estrela, S Manteigas, 40°21'N, 07°34'W, 1070 m, 19.III.2002, leg. Meybohm (cAss); 1 ex., Serra da Estrela (NHMW); 1 ex. Serra de S. Mamede, Marvao, 39°24'N, 07°26'W, 570 m, chestnut litter sifted, 17.III.2002, leg. Meybohm (cAss).

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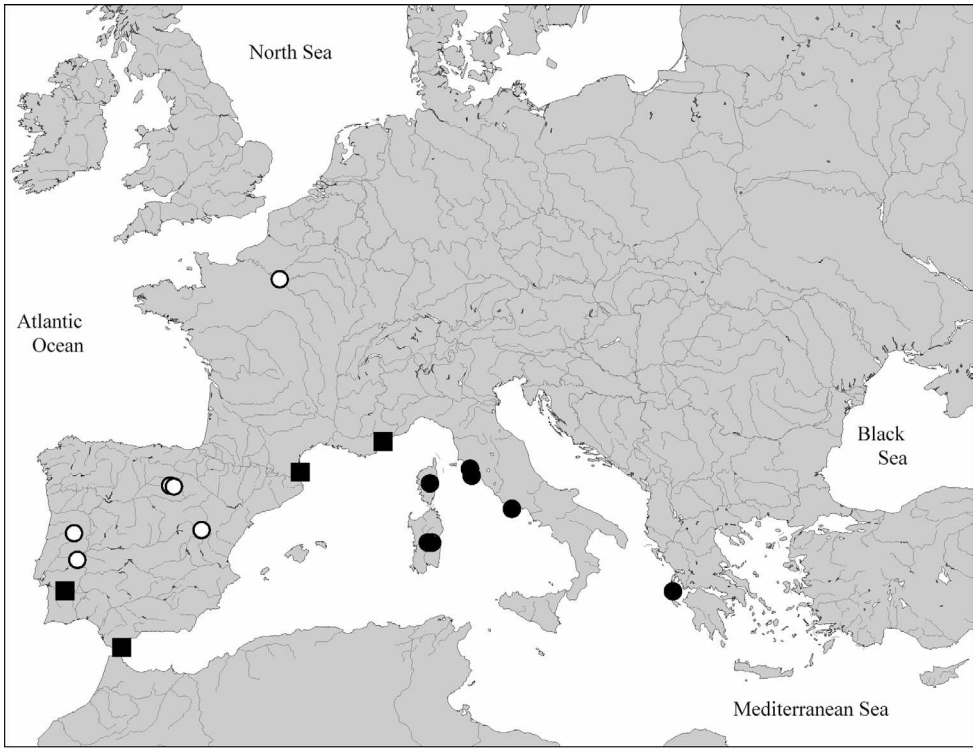
Spain: Aragón: 16 exs., WNW Teruel, Sierra de Albarracín, Sierra Alta, 40°29'N, 01°35'W, 1850 m, pine forest, pine and *Vaccinium* litter between stones sifted, 11.IV.2003, leg. Assing, Wunderle (cAss, cWun); 1 ex., same data, but 1825 m, leg. Wunderle (cWun). **Castilla-León:** 1 ex., Soria, Sierra de Urbion, above Laguna Negra, 1900 m, 21.V.1999, leg. Feldmann (cFel); 1 ex., Sierra de Urbion, path from Puerto de St. Ines to Pico de Urbion, 1800 m, nest of *Formica pratensis* [date not specified], leg. Schülke & Grünberg (cSch).
France: Locality not specified: 1 ex., "Seine inf.", leg. Fauvel (NHMW).



Map 4: Distributions of *Alevonota laeviceps* (BRISOUT DE BARNEVILLE) (squares), *A. kiesenwetteri* (KRAATZ) (filled circles), and *A. ocaloides* (BRISOUT DE BARNEVILLE) (open circles), based on examined records.

Diagnosis:

Rather large species, but size highly variable, 3.5-4.8 mm; RL: 1.4-1.9 mm. For a colour image see the photo of "*A. kiesenwetteri*" in TRONQUET (2006). Coloration variable: head and most of abdomen dark brown to blackish, in dark specimens only the broad posterior margins of tergites VII and VIII paler brown; pronotum and elytra brown to dark brown; legs yellowish brown to brown; antennae dark brown to black.

Head transverse (HW/HL: 1.10-1.15); puncturation rather coarse and sparse; interstices with shallow to distinct microreticulation. Eyes moderately large and moderately prominent, approximately as long as postocular region in dorsal view. Postgenal carina fine and short, visible only posteriorly in lateral view. Antenna with antennomere III approximately twice as long as wide; IV approximately 1.5 times as wide as long; V-IX increasingly transverse and of gradually increasing width; IX and X approximately twice as wide as long.

Pronotum distinctly wider than head (PW/HW: 1.18-1.27) and moderately transverse (PW/PL: 1.09-1.16), relatively larger and more transverse in larger than in smaller specimens; puncturation

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denser and usually even coarser than that of head; interstices on average somewhat narrower than diameter of punctures; surface with shallow to distinct microreticulation.

Elytra with moderately pronounced sexual dimorphism; approximately as long as pronotum (EL/PL: 0.97-1.05); puncturation much finer than that of head and pronotum, usually more or less ill-defined; interstices with or without very shallow microsculpture composed of micropunctures and/or microstriae. Hind wings fully developed.

Abdomen subparallel; tergite IV with or without shallow anterior impression; puncturation fine and sparse, sparser on posterior than on anterior tergites; interstices with very shallow microsculpture and glossy; microsculpture more distinct on tergites VII-VIII than on tergites III-VI; posterior margin of tergite VII with narrow palisade fringe; tergites VII-VIII with sexual dimorphism.

♂: elytra on either side of suture with shallow elevation and with rugose granulose puncturation; tergite VII near posterior margin with pronounced oblong smooth median tubercle; posterior margin of tergite VIII strongly convex, in the middle with pair of small tubercles, on either side crenulate (modifications more pronounced in larger than in smaller ♂♂); posterior margin of sternite VIII strongly convex; median lobe of aedeagus as in Fig. 57, of similar shape as in *A. laeviceps*; ML: 0.41-0.47 mm.

♀: elytra on either side of suture at most with very weak elevation, but without modified puncturation; posterior margin of tergite VIII simply convex; posterior margin of sternite VIII weakly convex; spermatheca of similar general morphology as in *A. kiesenwetteri* (Fig. 58).

Intraspecific variation:

The species is subject to pronounced variation of size (including that of the aedeagus), coloration, size of the pronotum, and the male secondary sexual characters, which are generally more developed in larger than in smaller males.

Distribution and bionomics:

Based on the available data, *A. ocaloides* has an Atlanto-Mediterranean distribution. The species was previously known only from France and is here recorded from Spain and Portugal for the first time (Map 4). The record of *A. kiesenwetteri* from the Pyrénées-Orientales by Tronquet (2006) probably refers to this species.

Most of the specimens listed above were sifted from forest litter (pine, *Vaccinium*). One specimen was found in the nest of *Formica pratensis*. The altitudes range from 570 to 1900 m. The material was collected in early spring (March through May).

Alevonota (*Alevonota*) *hierroensis* sp. n. (Figs 69-73)

Type material:

Holotype ♀: "Hierro, 22-II-2006, Cueva Longueras, P. Oromí / Holotypus ♂ *Alevonota hierroensis* sp. n. det. V. Assing 2008" (DZUL). Paratype ♂ [teneral]: same data as holotype (cAss).

Description:

2.0-2.2 mm; RL: 1.1-1.2 mm. Coloration of whole body pale yellowish. Habitus as in Fig. 69.

Head distinctly oblong, HL/HW: 1.2; puncturation extremely fine and sparse, barely visible; microsculpture very shallow, integument glossy (Fig. 70). Eyes reduced to minute, barely visible rudiments without ommatidia and pigmentation. Antenna rather long and slender, reaching posterior margin of elytra when directed caudad; antennomere IV approximately as long as wide;

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V weakly transverse; V-X gradually and weakly increasing in width; X less than 1.5 times as wide as long (Fig. 71).

Pronotum approximately as wide as long and 1.2 times as wide as head, widest in anterior half, distinctly narrowed caudad; posterior angles weakly marked; puncturation extremely fine, barely visible; microsculpture slightly more distinct than that of head (Fig. 70).

Elytra approximately 0.80-0.85 times as long as pronotum; puncturation fine, but more distinct than that of pronotum; microsculpture slightly more pronounced than that of pronotum. Hind wings completely reduced. Metatarsomere I approximately as long as II or slightly longer.

Abdomen distinctly broader than forebody, approximately 1.3 times as wide as pronotum, widest at segments V/VI; posterior margin of tergite VII without palisade fringe.

♂: posterior margin of tergite VIII broadly and distinctly concave, that of sternite VIII strongly convex; median lobe of aedeagus with ventral process distinctly curved in lateral view (Fig. 72); ML: 0.35 mm.

♀: posterior margin of tergite VIII very weakly concave, almost truncate; posterior margin of sternite VIII weakly convex; spermatheca with moderately enlarged capsule and with short, apically truncate duct (Fig. 73).

Etymology: The name (Latin, adjective) is derived from the name of the island, where the type locality is situated.

Distribution and bionomics:

Alevonota hierroensis is doubtlessly endemic to the Canarian island El Hierro, where it is the only known representative of the genus. As can be inferred from the adaptive reductions of the eyes, the pigmentation, and the wings, as well as from its habitus (moderately slender body with moderately long appendages), the species is probably microcavernicolous. The type specimens were collected with pitfall traps in a cave in February. The male paratype is teneral.

Alevonota (*Liota*) *gracilenta* (ERICHSON, 1839) (Figs 59-61, 63, Map 5)

Homalota gracilenta ERICHSON, 1839: 94.
Homalota venustula HEER, 1839: 340.
Homalota splendens KRAATZ, 1856: 246 f.; synonymy confirmed.
Liota hypogaea MULSANT & REY, 1875: 175 ff.; synonymy confirmed.

Type material examined:

Lectotype ♂ [damaged, head missing], here designated: "Cassel / coll. Kraatz / Syntypus / Lectotypus *Homalota splendens* Kraatz desig. V. Assing 2007 / Alevonota gracilenta (Erichson) det. V. Assing 2007" (DEI). Paralectotype ♀: "Misdroy [= Poland: Międzyzdroje] / coll. Kraatz / Syntypus / splendens mihi = gracilenta Er., German." (DEI).

Comments:

Homalota gracilenta was described from an unspecified number of syntypes from Paris ("Habitat Lutetiae") collected by Aubé (ERICHSON 1839).

The original description of *Homalota splendens* is based on an unspecified number of syntypes from Germany ("ueber ganz Deutschland verbreitet") (KRAATZ 1856). Two syntypes, a male without head and a female, were found in the Kraatz collection at the DEI. The male is here designated as the lectotype.

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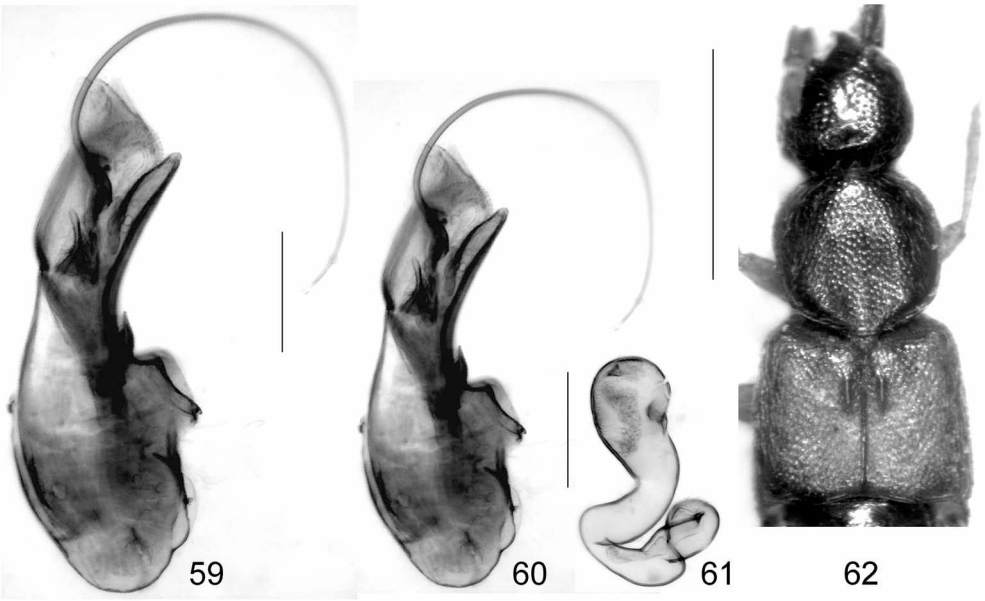

Figs 59-62: *Alevonota gracilenta* (Erichson) (59-61) and *Tropimenelytron mirabilis* (Eppelsheim) (62): median lobe of aedeagus in lateral view of male from Turkey (59) and of nanistic male from Italy (60); spermatheca (61); forebody (62). Scale bars: 0.1 mm.

Liota hypogaea was described from an unspecified number of syntypes from "Massane (Pyrénées-Orientales)" (Mulsant & Rey 1875). In the Rey collection, however, only a female labelled "Nice, Grouvelle" was found; this specimen is conspecific with *A. gracilenta*.

The genus *Liota* was described by Mulsant & Rey (1874) to include two species, *Homalota gracilenta* Erichson and *H. laeviceps* Brisout. Fenyes (1918) designated the former as the type species. *Liota* was later synonymised with *Alevonota* and has remained a synonym ever since (Bernhauer & Scheerpeltz 1926; Fauvel 1895; Smetana 2004). The present study revealed, however, that a revalidation as a subgenus appears justified for several reasons. Though somewhat similar in the general subparallel facies and in the morphology of the antennae, the type species of *Liota*, *H. gracilenta*, differs in various significant respects from other species of *Alevonota*, not only by external characters such as the distinctly transverse head, the more pronounced postgenal carinae, and the shape of the pronotum, but especially also in the the general morphology of the genitalia (aedeagus with long flagellum; spermatheca with twisted duct, somewhat resembling that of the genus *Geostiba* Thomson). Based on these observations, it does not seem unlikely that a thorough phylogenetic analysis, including also molecular data, may eventually reveal an even more distant relationship of *Liota* to *Alevonota*, so that both would have to be considered distinct genera.

Additional material examined:
Finland: 1 ex., Hanko, 11.V.-17.VI.1990, leg. Rutanen (ZMH).
Spain: Galicia: 1 ex., Pontevedra, Beloso ["Belus", 42°19'N, 08°45'W], leg. Franz (NHMW).
France: Île-de-France: 1 ex., Paris, leg. Fauvel (NHMW). **Provence:** 1 ex., Alpes Maritimes, St. Augustin, IV.1949 (MHNG); 1 ex., Alpes-Maritimes, Nice, leg. Grouvelle (MGHNL).
Switzerland: Vaud: 1 ex., Marchissy (MHNG).
Germany: Nordrhein-Westfalen: 1 ex., Marsberg, Dahlberg, mesobrometum, 5.VII.1992, leg. Lückmann (cFel); 1 ex., same data, but 3.VI.1995 (cFel); 1 ex., Münster-Kinderhaus, garden, V.2002, leg. Feldmann (cFel); 1 ex., same data, but 26.VI.2006 (cFel); 1 ex., Porta Westfalica, Wittekindsberg, car-net, 10.VI.1993, leg.

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Assing (cAss). **Rheinland-Pfalz:** 1 ex., "Wattenh."[= Wattenheim] (DEI); 1 ex., Eifel, Fischbachtal, Neuerburg [49°59'N, 06°57'E], car-net, 1.VI.1990, leg. Wunderle (cWun); 1 ex., Altenahr, pitfall, 21.VI.1988, leg. Büchs (cWun). **Baden-Württemberg:** 1 ex., Stuttgart, 9.V.1876, leg. Simon (NHMW). **Hessen:** 1 ex., Dautphe-Buchenau, Katzenbachtal, car-net, 30.IV.1988, leg. Wunderle (cWun). **Niedersachsen:** 1 ex., Lüneburger Heide, Schneverdingen env., Tütsberg, grassy heathland, pitfall, V.1995 (cAss); 4 exs., same data, but VI.1996 (cAss); 1 ex., same data, but V.1997 (cAss); 1 ex., same data, but VI.1997 (cAss); 3 exs., same data, but VII.1998 (cAss); 1 ex., same data, but IV.1999 (cAss); 2 exs., same data, but V.1999 (cAss); 1 ex., same data, but IX.1999 (cAss); 3 exs., same data, but IV.2000 (cAss); 1 ex., same data, but V.2000 (cAss); 3 exs., same data, but V.2001 (cAss); 1 ex., Hannover, garden, pitfall, V.1987, leg. Assing (cAss); 1 ex., same data, but VIII.1987 (cAss); 1 ex., Hannover, bank of Leine river, pitfall, V.1990 (cAss); 1 ex., Hannover-Buchholz, school grounds, meadow, pitfall, IX.1997, leg. Assing (cAss); 1 ex., Hannover, Kugelfangtrift, grassland, pitfall, V.2002, leg. Sprick (cAss); 1 ex., same data, but V.2001 (cAss); 1 ex., same data, but VIII.2002 (cAss); 1 ex., Braunschweig, arable land, pitfall, VII.1988 (cAss); 1 ex., 2 km SE Wolfenbüttel, Öselberg, 150 m, mesobrometum, pitfall, V.1998, leg. Schmidt (cAss); 1 ex., same data, but V.1999 (cAss); 1 ex., Hameln env., Großenwieden, arable land, pitfall, VI.1987, leg. Sprick (cAss); 1 ex., Hameln env., Düt, pitfall, VI.1988, leg. Sprick (cAss); 1 ex., same data, but V.1988 (cAss); 2 exs., Süntel, Rannenberg, arable land, limestone, pitfall, V.1987, leg. Sprick (cAss); 1 ex., same data, but VI.1987 (cAss); 4 exs., S Hildesheim, Steinberg, mesobrometum, pitfall, V.1997, leg. Schmidt & Sprick (cAss); 2 exs., same data, but VI.1997 (cAss); 1 ex., 3 km NE Alfeld/Leine, Wernershöhe, arable land, pitfall, V.1998, leg. Schmidt (cAss); 3 exs., same data, but VI.1998 (cAss); 1 ex., Northeim env., Fredelsloh, mesobrometum, pitfall, VII.1984 (cAss); 1 ex., Harz, St. Andreasberg env., Jordanshöhe, 700 m, pitfall, VII.1991, leg. Vowinkel (cAss); 1 ex., same data, but IX.1992 (cAss); 1 ex., same data, but V.1993 (cAss). **Mecklenburg-Vorpommern:** 1 ex., SE Stralsund, Devin, pitfall, 30.V.1967, leg. Zerche (DEI). **Sachsen-Anhalt:** 2 exs., Halle, S Gimritz, fallow, pitfall, 12.V.1993, leg. Teichmann (cFel, cAss); 1 ex., same data, but 21.VII.1993 (cFel); 1 ex., same data, but 4.VIII.1993 (cFel); 1 ex., same data, but 1.IX.1993 (cFel); 1 ex., same data, but 15.IX.1993 (cFel); 1 ex., same data, but 8.VI.1994 (cFel); 1 ex., same data, but 18.VII.1996 (cFel); 1 ex., same data, but 9.VII.1996 (cFel). **Brandenburg/Berlin:** 1 ex., Mehrow, 1.V.1990, leg. Arnold (cSch). **Thüringen:** 1 ex., Kyffhäuser, Rottleben env., 1.VI.1996, leg. Schülke (cSch).

Czech Republic: 2 exs., Praha, leg. Skalitzky (NHMW); 1 ex., Brandýs nad Labem, leg. Skalitzky (NHMW); 1 ex., Moravia, Černá Hora [50°50'N, 15°12'E], 12.-21.VIII.1926, leg. Stolz (NHMW); 1 ex., Moravia, Brno-Hády, 1.V.1966, leg. Nohel (NHMW); 1 ex., Moravia, Pálava ["Pollauer Berge"] (MNHUB).

Slovakia: 1 ex. [with worker of *Tetramorium* sp. glued on the label], Trenčin, Inovec, 5.V.1929, leg. Rambousek (NMP).

Italy: Trentino-Alto Adige: 1 ex., Biotopi Lago Pudro (TN), pasture, pitfall, 16.VI.-1.VII.1989, leg. Perini (cZan); 1 ex. [with 2 workers of *Formica lemani* attached to the pin], Lago di Molveno, 24.VII.1976, leg. Magrini (cZan). **Piemonte:** 1 ex., Biella, Sagliano Micca [ca. 45°36'N, 08°02'E], 30.VII.1958, leg. Rosa (MHNG). **Friuli-Venezia Giulia:** 1 ex., Trieste, Opcina-Basovizza [45°39'N, 13°52'E], 21.-28.IV.1921, leg. Moczarski & Scheerpeltz (NHMW); 1 ex., Maniago (PN), Magredi, 16.IV.1977, leg. Visentini (cZan); 1 ex., Pozzuolo del Friuli, 5.VII.1989 (cZan). **Emilia-Romagna:** 1 ex., Monteriolo near Sarsina [43°55'N 12°09'E], 800 m, 15.IV.1976, leg. Sama (cZan); 1 ex., locality illegible, 6.VI.1901, leg. Fiori (MNHUB). **Toscana:** 2 exs., Castelnuovo di Garfagnana, leg. Paganetti (DEI); 1 ex., Passo della Futa [44°05'N, 11°17'E], 3.XI.1962, leg. Castellini (cBor); 1 ex., Pratolino (FI), IV.1971, leg. Bordoni (cBor); 1 ex., Mte. Morello (FI), 3.V.1925, leg. Andreini (cBor); 1 ex., Elba [island], leg. Moczarski (NHMW). **Marche:** 1 ex., Ancona, Monte Conero [43°32'N, 13°35'E], leg. Paganetti (DEI). **Puglia:** 1 ex., Gargano, San Giovanni Rotondo, leg. Holdhaus (NHMW). **Basilicata:** 2 exs., Policoro (MT), 12.V.1987, leg. de Marzo (cAss). **Locality ambiguous:** 1 ex., "Belvedere", 3.VI.1894, leg. Solari (NHMW).

Austria: Vorarlberg: 2 exs., Feldkirch (NHMW); 1 ex., locality illegible, 10.V.1908 (NHMW). **Oberösterreich:** 1 ex., Linz, Lichtenberg, leg. Mader (NHMW). **Niederösterreich/Wien:** 1 ex., Wien env., Sievering [48°15'N, 16°20'E], leg. Skalitzky (NHMW); 2 exs., Wien env., leg. Breit, Winkler (NHMW); 1 ex., Mödling (NHMW); 1 ex., Langenzersdorf, leg. Luze (NHMW); 1 ex., Hainburg, Hundsheimer Berg [48°06, 16°57'E], 20.V.1942, leg. Bischoff (MNHUB). **Locality not specified:** 1 ex., "Austria", leg. Pipitz (NHMW).

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Hungary: 1 ex., Villany, V.1981, leg. Sieber (cWun); 2 exs., Bugac National Park, grassland, pitfall, IV.1983, leg. Galle (cAss); 1 ex., same data, but V.1983 (cAss); 1 ex., same data, but IX.1986 (cAss).
Romania: 1 ex., Munţii Rodnei [47°35'N, 24°40'E], leg. Deubel (NHMW).
Croatia: 1 ex., Črnica ["Cernizza", 45°27'N, 13°56'E], leg. Strupi (cAss); 1 ex., Mljet island, 1907, leg. Moczarski (NHMW); 1 ex., "Istrien", 30.VI.1984 (cWun).
Bosnia-Herzegovina: 1 ex., Vlasic planina, 600-1700 m, car-net, 5.V.1990, leg. Wunderle (cWun).
Bulgaria: 1 ex., Samokov, 1911, leg. Hilf (NHMW).
Greece: 1 ex., S Aristi, 850 m, 1.V.1973, leg. Löbl (MHNG); 1 ex., Flórina, ca. 20 km SSW Flórina, Oros Vitsi, 40°39'N, 21°23'E, N-slope, 1850-1900 m, grass and moss sifted, 22.V.2005, leg. Wunderle (cWun).
Turkey: Rize: 1 ex., Cağlayan D. river valley, 1800-1900 m, 23.VI.1998, leg. Solodovnikov (cAss). **Mersin:** 1 ex., Mut-Karaman, Sertavul Geçidi, 36°55'N, 33°16'E, 1570 m, 5.V.2004, leg. Brachat & Meybohm (cAss); 1 ex., Kırobası-Güzeloluk, 14 km W Güzeloluk, 36°45'N, 33°58'E, 1430 m, 8.V.2004, leg. Brachat & Meybohm (cAss).
Armenia: 1 ex., Yerevan, 1.VI.1952 (cAss).
Georgia: 1 ex., Khashuri ["Michailowo am Suramgebirge"; 41°59'N, 43°35'E], leg. Leder (NHMW).
Locality not specified or not identified: 1 ex., 13.VII.1993 (ZMH); 1 ex., ["Hungar"] (DEI); 1 ex., "Hungaria" (NHMW); 2 exs. (DEI).

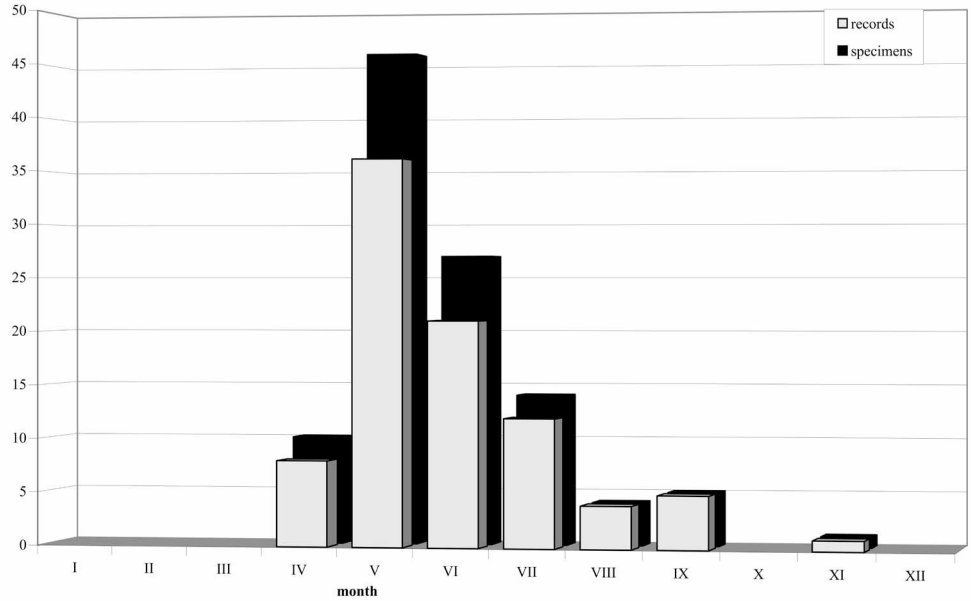

Fig. 63: *Alevonota gracilenta* (Erichson): Seasonal distribution of the examined specimens (black bars) and samples/records (grey bars).

Diagnosis:

Extremely variable species, 1.8-3.4 mm; RL: 0.85-1.4 mm. Usual coloration: head and abdomen, except for the posterior margins of the segments and the apex, dark brown to blackish; pronotum brown to dark brown; elytra yellowish brown to brown; legs yellowish; antennae yellowish to yellowish brown. Occasionally, the whole body may be considerable darker or paler.

Head transverse (HW/HL: 1.10-1.25 [sic]), of transversely rectangular to distinctly wedge-like shape (i. e. lateral margins subparallel to distinctly diverging in dorsal view); puncturation very fine, often barely noticeable; microreticulation very shallow to pronounced. Eyes of very variable

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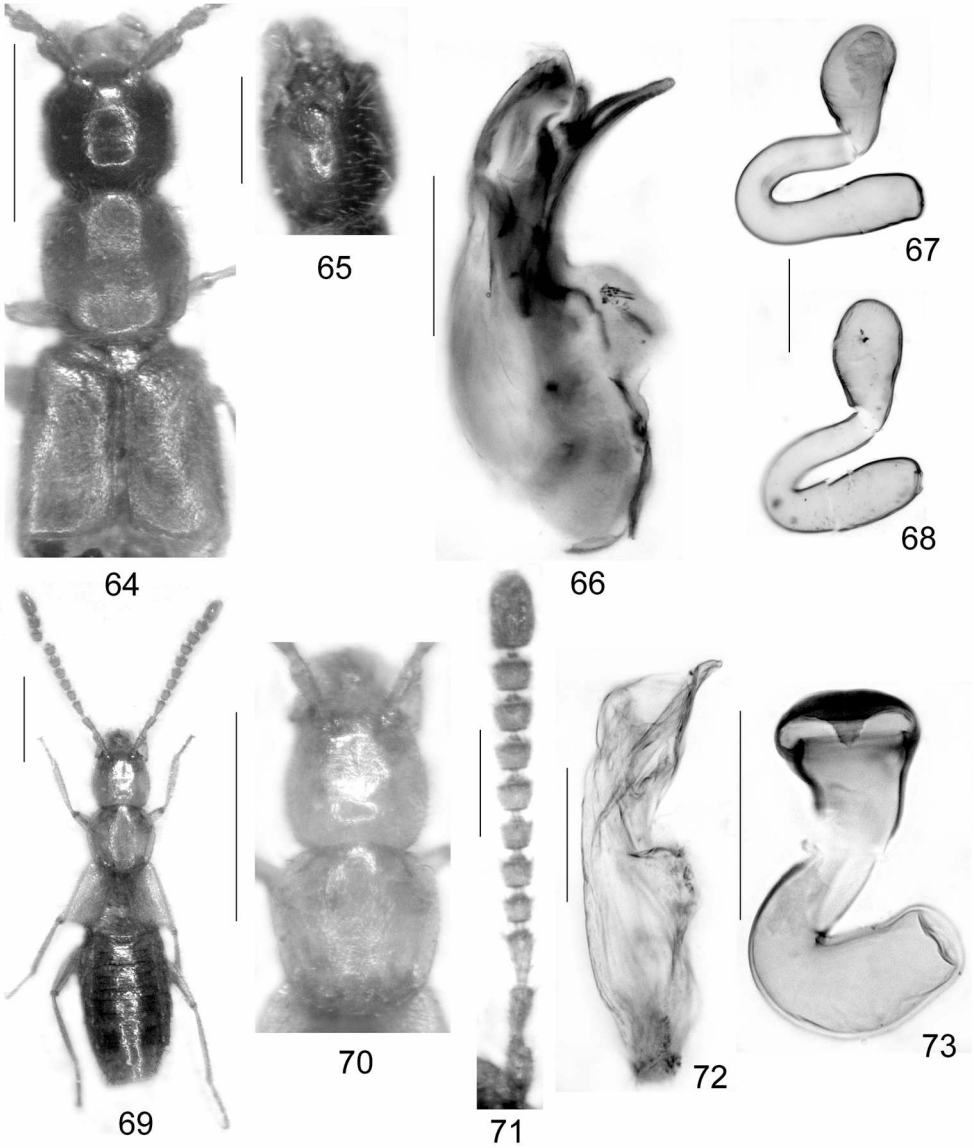

Figs 64-73: *Alevonota vitalei* (BERNHAUER) (64-68) and *A. hierroensis* sp. n. (69-73): forebody of specimen from Israel (64); head of lectotype in lateral view (65); median lobe of aedeagus of lectotype in lateral view (66); spermathecae of females from Israel (67-68); habitus of holotype (69); head and pronotum of holotype (70); antenna of paratype (71); median lobe of aedeagus in lateral view (teneral and somewhat deformed) (72); spermatheca of holotype (73). Scale bars: 64, 69-70: 0.5 mm; 65, 71: 0.2 mm; 66-68, 72-73: 0.1 mm.

shape and size, in small-eyed specimens weakly protruding from lateral contours of head and little more than half the length of postocular region in dorsal view, in large-eyed specimens distinctly prominent and approximately as long as postocular region or nearly so. Postgenal carina distinct and longer than in the preceding species, extending below eyes or nearly so. Antenna variable;

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usual morphology: antennomere III approximately twice as long as wide; IV approximately 1.5 times as wide as long; V-IX increasingly transverse and of gradually increasing width; IX and X approximately twice as wide as long.

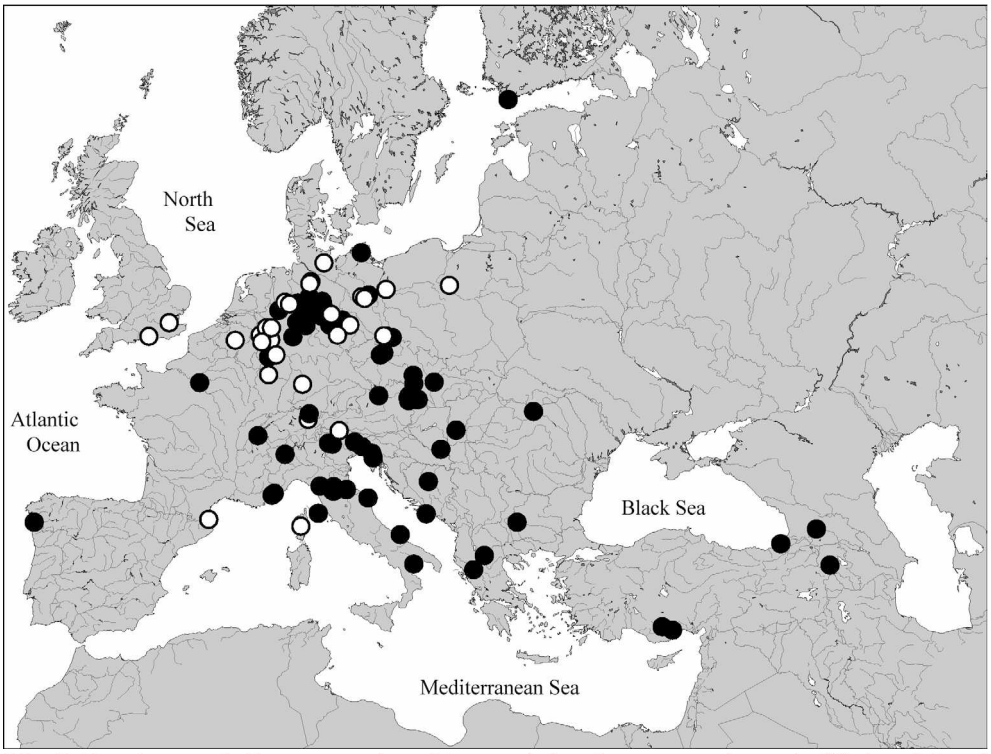
Pronotum of remarkably variable shape, slightly to distinctly wider than head (PW/HW: 1.12-1.25) and weakly to distinctly transverse (PW/PL: 1.05-1.30 [sic]); maximal width approximately in the middle, in posterior half only weakly tapering, i. e. posterior margin broader than anterior margin; puncturation similar to that of head; microreticulation pronounced to practically absent.

Elytra dimorphic, without sexual dimorphism; in macropterous morph slightly, in submacropterous morph distinctly shorter than pronotum (EL/PL: 0.82-0.95); puncturation as fine as or even finer than that of head and pronotum; microreticulation pronounced to practically absent. Hind wings fully developed or of somewhat reduced length.

Abdomen subparallel; tergite IV without anterior impression; puncturation fine and sparse, barely noticeable; microsculpture composed of isodiametric meshes everywhere and usually shallow, more distinct on tergites VII-VIII than on tergites III-VI; posterior margin of tergite VII with narrow palisade fringe; tergites VII-VIII without sexual dimorphism; posterior margin of tergite VIII broadly convex in both sexes.

♂: posterior margin of sternite VIII strongly convex; median lobe of aedeagus of variable size; ML: 0.32-0.38 mm; shape highly distinctive; internal sac with very long flagellum (Figs 59-60).

♀: posterior margin of sternite VIII moderately convex, in the middle not concave; spermatheca with twisted duct (Fig. 61).



Map 5: Distribution of *Alevonota gracilenta* (Erichson), based on examined records (filled circles) and selected literature records (open circles).

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Intraspecific variation:

The species is even more variable than its congeners, this enormous variation affecting especially size, coloration, the microsculpture of the forebody, eye size, the shape of the head and the pronotum, the length of the elytra and the hind wings, and the size of the aedeagus. Owing to this extreme variability, non-average specimens may be difficult to attribute to this species, or even to the genus. However, a reliable identification is always possible based on the highly distinctive primary sexual characters.

Distribution and bionomics:

Based on the revised material, *A. gracilenta* is a widespread Ponto-Mediterranean species, its distribution ranging from southern Turkey, Armenia, and Georgia in the southeast and east to northwest Spain, western France, and the south of Great Britain in the west and northwest, and to southern Scandinavia in the north (Map 5). It is here recorded from Spain, Croatia, Bosnia-Herzegovina, Bulgaria, Armenia, and Georgia for the first time. Lundberg (1995) reports the species from all Scandinavian countries; in Sweden, it is confined to the south. According to Baudi di Selve (1870), it is present also in Cyprus, but this record requires confirmation. The species was only recently recorded from Greece and Turkey for the first time (Assing 2004, 2005). In Germany, it has been reported from all regions (Eisinger 2006; Köhler & Klausnitzer 1998; material examined). In Italy, it is known from the north and south of the mainland, as well as from Sicily (Zanetti 1995). For additional literature records see Allen (1991), Benick & Lohse (1959), Eisinger (2006, Kache & Zucchi (1993), Koch (1968), Köhler & Klausnitzer (1998), Kroker & Renner (1983), Korge (1956, 1960, 1989), Linke (1907), Müller (1926), Peez & Kahlen (1977), Renner (2001), Sainte-Claire Deville (1920), Scholze & Jung (1994), Segers (1986), Stumpf (1998), Szujecki (1968), Tronquet (2006), Vásárhelyi (1985), Vogel (1978), and Vogel & Dunger (1980). Older records may be doubtful because the species was confounded with *A. egregia* by various authors (e.g. Wörndle (1950).

Although records are comparatively rare, the species has been collected in a wide range of - usually unforested - biotopes, especially with pitfall traps (see material examined; Assing 1988, 1992, 1994a, 1994b, 2001b; Feldmann & Lückmann 1998; Korge 1960; Kroker & Renner 1983; Stumpf 1998; Zerche 1980), occasionally also with car-nets (material examined), sweep-nets (material examined; Allen 1991; Eisinger 2006; Koch 1968; Vogel & Dunger 1980), or by sifting (material examined; Linke 1907; Peez & Kahlen 1977). It has been found in xerothermous limestone grassland (material examined; Assing 1994a, 2001b; Feldmann & Lückmann 1998), subalpine grassland (material examined; Assing 2005), meadows (material examined; Koch 1968, Vogel & Dunger 1980), pastures (material examined), arable land (material examined), fallow land (material examined), river banks (material examined), the leaf litter of old trees and the roots of grass in a sandpit (Peez & Kahlen 1977), sparsely vegetated heathlands on sandy soils (material examined; Korge 1960), a chalkpit (Allen 1991), a sparsely vegetated dump (Stumpf 1998), abandoned railroad tracks with ruderal vegetation (Korge 1989), nests of ants (*Formica lemani*, *Tetramorium* sp., *Lasius flavus*) (material examined; Korge 1956), compost (Koch 1968), flood debris (Linke 1907), and various urban or suburban habitats such as gardens, lawns, and greens (Allen 1991; Assing 1988, 1992; Kache & Zucchi 1993). The wide range of different habitats, as well as the fact that the species is collected rarely, accidentally, and usually in singles or very small numbers suggest that the true reproduction habitat is cryptic and unknown. While the records in Central Europe are generally from lower to intermediate elevations, the upper end of the known altitude range is at 1800-1900 m in Greece and Turkey (material examined).

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The examined material was collected during spring and summer, from April through September, with a maximum in May and June. One specimen was found also in November (Fig. 63). Since the habitat is probably subterranean, the ground and above-ground catches (mainly assessed by pitfall trapping and flight records) reflect dispersal activity. Flight records are confined to May and June. Teneral beetles were not observed.

Key to the *Alevonota* species of the Western Palaearctic region

The following key does not account for *A. lentipes* (Peyerimhoff, 1938), a doubtful species originally described from Algeria, but also recorded from Morocco (Smetana 2004). According to the original description, it is similar to *A. rufotestacea*, but distinguished by more transverse antennomeres VI-X, coarser puncturation of the pronotum, and darker coloration. The details indicated in the description do not rule out the possibility that the species is in fact conspecific with *A. rufotestacea*.

1. Eyes usually reduced to minute rudiments without ommatidia and pigmentation; only in one species from La Gomera with few (< 10) ommatidia without pigmentation. Species from the Canary Islands. 2
- Eyes sometimes small, but always composed of numerous ommatidia, only in two species from southern Italy and from Malta with approximately 10 ommatidia. Absent from the Canary Islands. 12

2. Eyes strongly reduced, but composed of some (< 10) ommatidia without pigmentation. Sexual characters as figured by Assing (1999b). La Gomera. ..... ***A. sollemnis*** Assing
- Eyes almost completely reduced, only minute rudiments without ommatidia visible. Absent from La Gomera. 3

3. Species endemic to Tenerife. 4
- Species endemic to La Palma and El Hierro. 8

4. Larger species; body length in normal preparation > 4.5 mm. Legs and antennae conspicuously elongated. Antennomeres IV-VIII distinctly oblong 5
- Smaller species; body length in normal preparation < 3.2 mm. Legs and antennae much shorter. Antennomeres IV-VIII distinctly transverse. 6

5. Largest species of the genus; length of body 7-9 mm. Body reddish. Antennomere X approximately twice as long as wide. For illustrations see Gamarra & Hernández (1989). ..... ***A. outereloi*** (Gamarra & Hernández)
- Smaller species; length of body 4.7-6.0 mm. Body yellowish. Antennomere X approximately as long as wide. For illustrations see Oromí & Martín (1984). ..... ***A. canariensis*** (Oromí & Martín)

6. Very small species; length of body < 1.8 mm; width of abdomen approximately 0.25 mm. ♂: median lobe of aedeagus very small (ML: < 0.2 mm) and apically bifid; for an illustration see figure 21 in Assing (2002a). Anaga range. ..... ***A. pacei*** Assing
- Larger species; length of body > 2.6 mm; width of abdomen approximately 0.5 mm. ♂: median lobe of aedeaagus larger and apically not bifid. Distribution different. 7

DOI: 10.21248/contrib.entomol.58.1.145-189

7. Abdomen approximately 1.10 times as wide as elytra. ♂: posterior margin of sternite VIII obtusely produced in the middle; median lobe of aedeagus with relatively longer, more strongly curved, and more slender ventral process in lateral view. ♀: posterior margin of sternite VIII distinctly concave in the middle; spermatheca with shorter duct of distinctive shape. For illustrations of the sexual characters see figures 17-20, 23, 25 in ASSING (2002a). NW-Tenerife: Teno range. ..... ***A. franzi*** (PALM)

- Abdomen approximately 1.15 times as wide as elytra. ♂: posterior margin of sternite VIII broadly convex; median lobe of aedeagus with shorter, weakly curved, and less slender process in lateral view. ♀: posterior margin of sternite not concave in the middle; spermatheca with longer, apically more dilated, and more strongly coiled duct. For illustrations of the sexual characters see figures 12-16, 24, 26 in ASSING (2002a). Known from the area from Icod de los Vinos to Orotava valley. ..... ***A. oromii*** ASSING

8. Larger species; body length in normal preparation > 3.4 mm. Legs and antennae conspicuously elongated; metatibia > 0.6 mm. Antennomeres IV-X oblong. La Palma. 9

- Smaller species; body length in normal preparation < 3.0 mm. Legs and antennae much shorter; metatibia < 0.5 mm. Antennomeres V-X transverse. 10

9. Larger species; body length approximately 6 mm. ♀: capsule of spermatheca strongly dilated. ♂ unknown. For figures see HERNÁNDEZ & MARTÍN (1990). .... ***A. junoniae*** (HERNÁNDEZ & MARTÍN)

- Smaller species; body length in normal preparation < 5.0 mm. ♀: capsule of spermatheca weakly enlarged; duct shorter. For figures see HERNÁNDEZ & MARTÍN (1990). .... ***A. tanausui*** (HERNÁNDEZ & MARTÍN)

10. Slightly larger species; PW: 0.37-0.41 mm. Antennae more slender; antennomere IV approximately as long as wide and X less than 1.5 times as wide as long (Fig. 71). ♂: posterior margin of tergite VIII concave; median lobe of aedeagus with ventral process curved in lateral view. ♀: spermatheca as in Fig. 73. El Hierro. ..... ***A. hierroensis*** sp. n.

- Slightly smaller species; PW: 0.31-0.36 mm. Antennae more strongly incrassate apically; antennomere IV transverse, X more than 1.5 times as wide as long. ♂: posterior margin of tergite VIII convex. La Palma. 11

11. ♂: median lobe of aedeagus with ventral process almost straight in lateral view. ♀: spermathecal capsule strongly dilated, almost disc-shaped. For illustrations see HERNÁNDEZ & GARCÍA (1989). ..... ***A. hephaestos*** (HERNÁNDEZ & GARCÍA)

- ♂: median lobe of aedeagus with ventral process almost angled in lateral view. ♀: spermathecal capsule weakly dilated, not disc-shaped. ..... ***A. palmi*** (FRANZ)

12. Eyes strongly reduced, distinctly less than half as long postocular region in dorsal view. Species from southern Italy, Malta, and Algeria. 13

- Eyes larger, at least half the length of postocular region in dorsal view. 15

13. Eyes composed of > 10 ommatidia with pigmentation. Elytra approximately as long as pronotum. Hind wings developed. Abdominal tergite VII with palisade fringe. Algeria. . ... ***A. fulvastra*** (PEYERIMHOFF)

- Eyes composed of approximately 10 ommatidia without pigmentation. Elytra distinctly shorter than pronotum. Hind wings completely reduced. Abdominal tergite VII without palisade fringe. 14

DOI: 10.21248/contrib.entomol.58.1.145-189

14. Abdominal tergite VI with anterior impression approximately as deep as those of tergites III-V. ♀: spermatheca with rather long and slender capsule and duct. ♂ unknown. For illustrations see PACE (1999). Malta. ..... *A. melitensis* PACE

- Abdominal tergite VI without or with much shallower impression. For illustrations of the habitus and the spermatheca see PACE (1977). Italy: Lazio, Basilicata. .... *A. crypticola* (PACE)

15. Postgenal carina pronounced and anteriorly extending to eye or nearly so. Abdominal tergites III-IV and VII-VIII without sexual dimorphism. ♂: median lobe of aedeagus shaped as in Figs 59-60; flagellum in internal sac conspicuously long, longer than median lobe. ♀: spermatheca with twisted duct of distinctive shape (Fig. 61). Widespread in Europe, Turkey, Armenia (Map 5). ..... *A. gracilenta* (ERICHSON)

- Postgenal carina weakly pronounced and visible only in posterior portion of head in lateral view. ♂: median lobe of aedeagus of different shape and without long flagellum. ♀: spermathecal duct not twisted. 16

16. Antennae with antennomeres IV-X strongly transverse, at least 2.5 times as wide as long. Pronotum often reddish. ♂: tergite VII unmodified. Group of highly similar and variable species; for a reliable separation, an examination of the aedeagus is usually essential. 17

- Antennae with antennomeres IV-X at most twice as wide as long. Pronotum yellowish brown to black, not reddish. ♂: tergite VII with tubercle or with pair of oblong tubercles. 21

17. Abdominal tergite VI with anterior impression, this impressions almost as deep as those of tergites III-V. Rather small species. Eyes approximately half as long as postocular region (Figs 64-65). ♂: median lobe of aedeagus with strongly bent and apically acute ventral process (Fig. 66). ♀: spermatheca as in Figs 67-68. Head and bases of abdominal tergites slightly darkened. Known only from Sicily and Israel. ..... *A. vitalei* (BERNHAUER)

- Abdominal tergite VI without - or with very shallow - anterior impression. Eyes usually larger. 18

18. Head usually approximately as wide a long. Eyes usually weakly prominent and shorter than postocular region in dorsal view (Figs 1-2). Pronotum weakly transverse (PW/PL: 1.00-1.10) (Fig. 1) and usually reddish. ♂: aedeagus on average smaller (ML: 0.30-0.35 mm); ventral process weakly bent in lateral view (Figs 10-18). Widespread in the Western Palaearctic region (Map 1). ..... *A. rufotestacea* (KRAATZ)

- Head usually weakly transverse. Eyes on average more prominent and approximately as long as or longer than postocular region in dorsal view. Pronotum usually distinctly transverse (PW/PL: 1.07-1.25). ♂: aedeagus larger (ML: 0.33-0.41 mm); ventral process more strongly bent and apically more acute in lateral view. 19

19. ♂: aedeagus smaller (ML: 0.33-0.36 mm); ventral process less strongly bent and apically less acute (Figs 43-44). Crete (Map 1). ..... *A. cretica* sp. n.

- ♂: aedeagus larger (ML: 0.36-0.41 mm); ventral process more strongly bent and apically more acute. Absent from Crete. 20

DOI: 10.21248/contrib.entomol.58.1.145-189

20. Pronotum mostly (but not always!) bright reddish. Pronotum (Fig. 31) more transverse (PW/PL: 1.13-1.25). ♂: median lobe of aedeagus as in Figs 33-36. Ponto-Mediterranean distribution: Eastern Mediterranean from SE-Bulgaria to the Middle East (Map 2). .... ***A. libanotica*** (FAGEL)

- Pronotum usually pale to dark brown. Pronotum (Fig. 21) on average less transverse (PW/PL: 1.07-1.13). ♂: median lobe of aedeagus as in Figs 25-26. Atlanto-Mediterranean distribution: Iberian Peninsula, Western Europe, Central Europe (Map 2). .... ***A. elegantula*** (BRISOUT DE BARNEVILLE)

21. Pronotum with distinct and rather coarse puncturation, interstices as wide as diameter of punctures or narrower. 22

- Pronotum with fine, sometimes barely noticeable puncturation, interstices distinctly wider than diameter of punctures. 23

22. Larger species, 3.5-4.8 mm; RL: 1.4-1.9 mm. Macropterous. ♂: abdominal tergites III-IV unmodified; tergite VII posteriorly with pronounced smooth median tubercle; aedeagus distinctly larger (ML: 0.41-0.47 mm), shaped as in Fig. 57. ♀: spermatheca as in Fig. 58. Iberian Peninsula and France (unknown from Corsica) (Map 4). .... ***A. ocaloides*** (BRISOUT DE BARNEVILLE)

- Smaller species, 2.5-3.3 mm; RL: 1.0-1.5 mm. Wing-dimorphic, elytra distinctly shorter than pronotum in brachypterous morph. ♂: abdominal tergites III and IV with distinct smooth median elevation; tergite VII posteriorly with pair of less pronounced oblong tubercles; aedeagus smaller (ML: 0.28-0.38 mm), shaped as in Figs 52-54. ♀: spermatheca as in Figs 55-56. Corsica, Italy, Greece (Map 4). ..... ***A. kiesenwetteri*** (KRAATZ)

23. Antennae of darker average coloration, usually dark brown to blackish brown. Microsculpture of forebody shallow, less pronounced. Eyes less prominent, approximately as long as or slightly shorter than postocular region in dorsal view. ♂: elytra on either side of suture weakly elevated; tergites III and IV in the middle with weak, ill-defined, almost obsolete elevation; tergite VII at posterior margin with pronounced smooth median tubercle; median lobe of aedeagus as in Figs 50-51. Atlanto-Mediterranean distribution: Iberian Peninsula, France (Map 4). ..... ***A. laeviceps*** (BRISOUT DE BARNEVILLE)

- Antennae usually yellowish brown to brown. Microsculpture of forebody usually pronounced. Eyes prominent, usually slightly longer than postocular region in dorsal view. ♂: elytra on either side of suture mostly without elevation; tergites III and IV unmodified; tergite VII at posterior margin with pair of rather small oblong tubercles; median lobe of aedeagus as in Figs 46-47. Ponto-Mediterranean distribution, from Turkey in the southeast to France in the northwest (Map 3). ..... ***A. egregia*** (RYE)

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Catalogue of the *Alevonota* species of the Western Palaearctic region

Taxon	Confirmed distribution
subgenus *Alevonota* Thomson, 1858	
canariensis (Oromí & Martín, 1984)	Canary Islands: Tenerife
cretica sp. n.	Greece: Crete
crypticola (Pace, 1977)	Italy: Lazio, Basilicata
egregia (Rye, 1876)	Ponto-Mediterranean: From Turkey and Greece in the southeast to France and the south of Great Britain in the west and northwest
elegantula (Brisout de Barneville, 1863)	Atlanto-Mediterranean: Spain, France, Italy, Germany, Poland
franzi (Palm, 1976)	Canary Islands: Tenerife (Teno range)
fulvastra (Peyerimhoff, 1938)	Algeria
hephaestos (Hernández & García, 1989)	Canary Islands: La Palma
hierroensis sp. n.	Canary Islands: El Hierro
junoniae (Hernández & Martín, 1990)	Canary Islands: La Palma
kiesenwetteri (Kraatz, 1856) = *krausei* (Sainte-Claire Deville, 1914); syn. n.	Greece, Italy (incl. Sardinia), France: Corsica
laeviceps (Brisout de Barneville, 1863)	Atlanto-Mediterranean: Iberian Peninsula, France
lentipes (Peyerimhoff, 1938) [species dubia]	Algeria?, Morocco?
libanotica (Fagel, 1965)	Ponto-Mediterranean: SE-Bulgaria, Greece: Lesbos, Turkey, Lebanon, Israel
melitensis Pace, 1999	Malta
ocaloides (Brisout de Barneville, 1863)	Atlanto-Mediterranean: Iberian Peninsula, France
oromii Assing, 2002	Canary Islands: Tenerife (central north of island)
outereloi (Gamarra & Hernández, 1989)	Canary Islands: Tenerife
pacei Assing, 2002 = *franzi* (Pace, 1994)	Canary Islands: Tenerife (Anaga range)
palmi (Franz, 1981)	Canary Islands: La Palma
rufotestacea (Kraatz, 1856) = *atricapilla* (Mulsant & Rey, 1852) = *aurantiaca* (Fauvel, 1895); syn. n.	Ponto-Mediterranean, from Israel and Turkey in the east and southeast to southern Scandinavia in the north, and to France and Great Britain in the west and northwest
sollemnis Assing, 1999	Canary Islands: La Gomera
tanausui (Hernández & Martín, 1990) = *palmensis* (Hernández & Martín, 1990)	Canary Island: La Palma
vitalei (Bernhauer, 1932)	Italy: Sicily; Israel
subgenus *Liota* Mulsant & Rey, 1874	
gracilenta (Erichson, 1839) = *venustula* (Heer, 1839) = *splendens* (Kraatz, 1856) = *hypogaea* (Mulsant & Rey, 1875)	Ponto-Mediterranean, from Georgia, Armenia, and southern Turkey in the east and southeast to southern Scandinavia in the north and to northwestern Spain, western France, and the south of Great Britain in the west and northwest.

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Species excluded from *Alevonota*

Tropimenelytron mirabilis (EPPELSHEIM, 1884); comb. n. (Fig. 62)

Homalota (Aleuonota) mirabilis EPPELSHEIM, 1884: 13.

Type material examined:

Lectotype ♂ [head damaged, mouthparts and aedeagus dissected prior to present study], here designated: "9. / Kaukas Leder / Berge von Talysch, Lirik / Collect. Eppelsh. / Typus / Lectotypus *Homalota mirabilis* Eppelsheim desig. V. Assing 2007 / Tropimenelytron mirabilis (Eppelsheim) det. V. Assing 2007" (NHMW). Paralectotype ♂: "mirabilis Epp., Verh. Naturf. Ver. Brünn Bd. XXII / Caspi.-M.-Gebiet, Leder (Reitter), Liryk. / Collect. Eppelsh. / Typus (NHMW).

Comments:

The original description is based on a male and a female ("in einem Pärchen") from "Lirik im Gebirge von Talysch" (EPPELSHEIM 1884). Both syntypes are males and deposited in the Eppelsheim collection at the NHMW. The smaller specimen was erroneously sexed as a female by Eppelsheim, obviously because it lacks the male secondary sexual characters on the elytra and the abdomen. The larger syntype with fully developed secondary sexual characters is here designated as the lectotype. The species does not refer to *Alevonota*, but to *Tropimenelytron* PACE, 1983.

From *T. tuberiventris* (EPPELSHEIM, 1880), the only other representative of *Tropimenelytron* in the Western Palaearctic region, the species is distinguished by larger size, longer antennae, a broader head, the much coarser, more defined, and denser puncturation of the forebody, the much less pronounced (i. e. distinctly shorter and less elvated) keels on the male elytra (Fig. 62), and by the larger aedeagus. The modifications of the male abdominal tergites III, IV, and VII are similar to those of *T. tuberiventris*. *Tropimenelytron mirabilis* is currently known only from Azerbaijan.

"Alevonota" punctipennis (EPPELSHEIM, 1893)

Aleuonota punctipennis EPPELSHEIM, 1893: 23 f.

Type material examined:

Holotype ♂ [slightly damaged]: "♂ / Ost-Sibirien, Quellgebiet des Irkut, Leder 1891 / punctipennis Eppelsh. / punctipennis Epp., Deutsch. ent. Zt. 1893, p. 23 / Collect. Eppelsh. / Typus / "Alevonota" punctipennis (Eppelsheim) det. V. Assing 2007" (NHMW).

Comments:

The original description is based on a single male from "Ost-Sibirien in der Nähe der Hauptstadt Irkutsk auf dem linken Ufer des Irkut in der oberen Hälfte dieses Flusses", this area extending from the "Ortschaft Tunka bis an den Muku-Sardik im Sajan'schen Gebirge" (EPPELSHEIM 1893). An examination of the external morphology of the holotype and especially the sexual characters (completely different morphology of the median lobe of the aedeagus and the paramere) revealed that the species does not refer to *Alevonota*, but to a genus unknown to us.

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References

Ádám, L. 1996: Staphylinidae (Coleoptera) of the Bükk National Park. – In: Mahunka, S (ed.): The fauna of the Bükk National Park. – Budapest, Hungarian Natural History Museum: 231-258.

Allen, A. A. 1991: *Alevonota aurantiaca* Fauv. (Col.: Staphylinidae) recaptured at Mickleham, Surrey; with short notes on two of its congeners. – Entomologist's record and journal of variation **103**: 100-101.

Assing, V. 1988: Die Kurzflügelkäferfauna (Coleoptera: Staphylinidae) ausgewählter Grün-, Ruderal- und Kleingartenflächen im Stadtgebiet Hannovers: Ein Beitrag zur Faunistik und Ökologie einer Großstadt. – Berichte der naturhistorischen Gesellschaft Hannover **130**: 111-131.

Assing, V. 1992: Die Kurzflügelkäfer (Coleoptera: Staphylinidae) eines urbanen Inselbiotopkomplexes in Hannover. 3. Beitrag zur Faunistik und Ökologie der Staphyliniden von Hannover. – Berichte der naturhistorischen Gesellschaft Hannover **134**: 173-187.

Assing, V. 1994a: Zur Kurzflügelkäferfauna xerothermer Flächen im südlichen Niedersachsen (Coleoptera: Staphylinidae). – Göttinger naturkundliche Schriften **3**: 7-31.

Assing, V. 1994b: *Pseudomicrodota jelineki* und weitere faunistisch bemerkenswerte Aleocharinen von der Porta Westfalica im Weserbergland (Staphyl.) (Kleine Mitteilung Nr. 2136). – Entomologische Blätter **90**: 123-124.

Assing, V. 1999a: A revision of *Ilyobates* Kraatz, 1856 (Coleoptera: Staphylinidae, Aleocharinae, Oxypodini). – Beiträge zur Entomologie, Berlin **49**: 295-342.

Assing, V. 1999b: On the Staphylinidae of La Gomera (Canary Islands), with descriptions of four new species (Coleoptera). – Beiträge zur Entomologie, Berlin **49**: 343-356.

Assing, V. 2001a: A revision of *Callicerus* Gravenhorst, 1802, *Pseudosemiris* Machulka, 1935, and *Saphocallus* Sharp, 1888 (Coleoptera: Staphylinidae, Aleocharinae, Athetini). – Beiträge zur Entomologie, Keltern **51**: 247-334.

Assing, V. 2001b: Kurzflügelkäfer. – In: Hofmeister, H.; Prüss, U. Sprick, P. & Weber, U.: Der Steinberg bei Wesseln. Mitteilungen der Paul-Feindt-Stiftung. – Natur und Landschaft im Landkreis Hildesheim, Heft **2**: 72-76.

Assing, V. 2002a: On the Staphylinidae of the Canary Islands. IX. New synonyms and records, and a systematic rearrangement of some endogean and cavernicolous Aleocharinae (Coleoptera). – Vieraea **30**: 45-66.

Assing, V. 2002b: A taxonomic and phylogenetic revision of *Amarochara* Thomson. I. The species of the Holarctic region (Coleoptera: Staphylinidae, Aleocharinae, Oxypodini). – Beiträge zur Entomologie, Keltern **52**: 111-204.

Assing, V. 2004: New species and records of Staphylinidae from Turkey III (Insecta: Coleoptera). – Linzer biologische Beiträge **36**: 669-733.

Assing, V. 2005: Two new species and new records of Staphylinidae from the Greek island Lesbos (Insecta: Coleoptera). – Linzer biologische Beiträge **37**: 1035-1046.

Assing, V. 2006: New species and records of Staphylinidae from Greece, with two new synonymies (Insecta: Coleoptera). – Linzer biologische Beiträge **38**: 333-379.

Assing, V. in press: Four new species and additional records of Staphylinidae from Spain (Insecta: Coleoptera). – Linzer biologische Beiträge **39** (2007).

Baudi di Selve, F. 1870: Coleopterorum messis in insula Cypro et Asia minore ab Eugenio Truqui congregatae recensitio: de Europaeis notis quibusdam additis. Pars altera. – Berliner Entomologische Zeitschrift **13** (1869): 369-418.

DOI: 10.21248/contrib.entomol.58.1.145-189

BAUMANN, H. & KÖHLER, F. 2000: Die Westerwaldexkursion der Arbeitsgemeinschaft Rheinischer Koleopterologen 1999 (Coleoptera). – Mitteilungen der Arbeitsgemeinschaft Rheinischer Koleopterologen (Bonn) **10**: 23-50.

BENICK, G. & LOHSE, G. A. 1959: Die Myrmedoniini des Niederelbegebietes und Schleswig-Holsteins (Col. Staphylinidae). – Verhandlungen des Vereins für naturwissenschaftliche Heimatforschung Hamburg **34**: 11-31.

BENICK, G. & LOHSE, G. A. 1974: Tribus 14 (Callicerini). – In: FREUDE, H.; HARDE, K. W. & LOHSE, G. A. (eds.): Die Käfer Mitteleuropas. Band 5. Staphylinidae II (Hypocyphtinae und Aleocharinae), Pselaphidae. – Krefeld, Goecke & Evers: 72-220.

BERNHAUER, M. 1932: Neuheiten der paläarktischen Staphylinidenfauna. – Koleopterologische Rundschau **17** (1931): 232-245.

BERNHAUER, M. & SCHEERPELTZ, O. 1926: Staphylinidae VI. Pars 82). – In: JUNK, W. & SCHENKLING, S. (eds.): Coleopterorum Catalogus. Volumen 5. Staphylinidae. – Berlin, W. Junk: 499-988.

BRISOUT DE BARNEVILLE, C. 1863: [new taxa]. – In: GRENIER, A.: Catalogue des coléoptères de France par M. le Dr. A. Grenier et matériaux pour servir à la faune des coléoptères français. – Paris, A. Grenier: iv + 3-79, 1-135 pp.

BRUGE, H.; CREVECOEUR, L. & WARZÉE, N. 2007: Noeuf Staphylins, nouveaux pour la faune belge (Coleoptera Staphylinidae). – Bulletin de la Société Royal Belge d'Entomologie **143**: 57-82.

EISINGER, D. 2006: Neu- und Wiederfunde für die Käferfauna des Saarlandes (Coleoptera). – Mitteilungen der Arbeitsgemeinschaft Rheinischer Koleopterologen (Bonn) **16**: 11-20.

EPPELSHEIM, E. 1884: Diagnosen neuer Staphyliniden aus dem Caucasus und aus Lenkoran. – Verhandlungen des Naturforschenden Vereines in Brünn **22** (1883): 11-16.

EPPELSHEIM, E. 1893: Beitrag zur Staphylinen-Fauna des südwestlichen Baikal-Gebietes. – Deutsche Entomologische Zeitschrift **1893**: 17-67.

ERICHSON, W. F. 1839: Genera et species Staphylinorum insectorum coleopterorum familiae. Erster Band. – Berlin, F. H. Morin: 1-400.

FAGEL, G. 1965: Contribution à la connaissance des Staphylinidae. XCI. Quelques Aleocharinae nouveaux du Liban. – Bulletin et Annales de la Société Royale d'Entomologie de Belgique **101**: 251-263.

FAUVEL, A. 1895: Notes synonymiques. – Revue d'Entomologie **14**: 92-127.

FAUVEL, A. 1897: Catalogue des Staphylinides de la Barbarie et des Îles Açores, Madères, Salvages et Canaries. – Revue d'Entomologie **16**: 237-371.

FAUVEL, A. 1902: Catalogue des Staphylinides de la Barbarie, de la Basse-Égypte et des Îles Açores, Madères, Salvages et Canaries. – Revue d'Entomologie **21**: 45-189.

FELDMANN, B. & LÜCKMANN, J. 1998: Zur Staphylinidenfauna (Coleoptera) der Kalkmagerrasen im Raum Marsberg. – Mitteilungen der Arbeitsgemeinschaft Rheinischer Koleopterologen (Bonn) **8**: 73-100.

FENYES, A. 1918: Coleoptera Fam. Staphylinidae subfam. Aleocharinae. – In: WYTSMAN, P. (ed.): Genera Insectorum, Fascicle 173a. – Bruxelles, Louis Desmet-Verteneuil: 1-110.

FRANZ, H. 1981: Neue, blinde, subterrane Coleopteren von den Makaronesischen Inseln (Coleeoptera: Staphylinidae et Curculionidae). – Entomologica Scandinavica. Supplementum **15**: 328-332.

GAMARRA, P. 1987: Nuevas citas de la subfamilia Callicerinae (Coleoptera, Staphylinoidea, Aleocharidae) para la fauna española. – Miscellània Zoològica **11**: 139-145.

GAMARRA, P. & HERNÁNDEZ, J. J. 1989: *Apteranopsis outereloi* n. sp. y observaciones sobre los Staphylinoidea (Col.) cavernicolas de Canarias. – Mémoires de Biospéleologie **16**: 53-62.

GAMARRA, P. & OUTERELO, R. 2005: Catálogo iberobalear de los Aleocharinae (Coleoptera: Staphylinidae). – Boletín Sociedad Entomológica Aragonesa **37**: 1-81.

HERNÁNDEZ, J. J. & GARCÍA, R. 1989: *Apteranopsis hephaestos* n. sp. (Coleoptera, Aleocharidae), un nuevo estafilinido troglobio de la isla de La Palma (Canarias). – Elytron **3**: 19-23.

DOI: 10.21248/contrib.entomol.58.1.145-189

Hernández, J. J. & Martín, J. L. 1990: Tres nuevas especies de *Apteranopsis* (Coleoptera: Aleocharidae) troglobias de la isla de La Palma (Canarias). – Annales de la Société Entomologique de France (N. S.) **26**: 585-594.

Heer, O. 1839: Fauna Coleopterorum Helvetica. Pars I. Fascicule II. – Turici, Orelii, Fuesslinii et Sociorum: 145-360.

Kache, P. & Zucchi, H. 1993: Besiedlung innerstädtischer Kleinstgrünflächen durch Doppelfüßer, Hundertfüßer und Kurzflügelkäfer (Diplopoda, Chilopoda et Staphylinidae). – Zeitschrift für Ökologie und Naturschutz **2**: 223-243.

Kiener, S. 1986: Neue Staphyliniden-Funde aus der Schweiz (Coleoptera, Staphylinidae). – Mitteilungen der Entomologischen Gesellschaft Basel, Neue Folge **36**: 37-62.

Koch, K. 1968: Käferfauna der Rheinprovinz. – Decheniana (Bonn), Beiheft **13**: 1-382.

Köhler, F. 1996: Käferfauna in Naturwaldzellen und Wirtschaftswald. – Landesanstalt für Ökologie, Bodenordnung und Forsten / Landesamt für Agrarordnung NRW, LÖBF-Schriftenreihe **6**: 1-283.

Köhler, F. 2000: Vergleichende Untersuchungen zur Totholzkäferfauna (Coleoptera) des Naturwaldreservates "Mummelskopf" im Pfälzer Wald. – Mainzer naturwissenschaftliches Archiv **38**: 175-236.

Köhler, F. & Klausnitzer, B. 1998: Verzeichnis der Käfer Deutschlands. – Entomologische Nachrichten und Berichte, Beiheft **4**: 1-185.

Köhler, F. & Stumpf, T. 1992: Die Käfer der Wahner Heide in der Niederrheinischen Bucht bei Köln (Insecta: Coleoptera). Fauna und Artengemeinschaften, Veränderungen und Schutzmaßnahmen. – Decheniana (Bonn), Beiheft **31**: 499-593.

Korge, H. 1956: Teil I: Adephaga und Staphylinidae. – In: Griep, E. & Korge H.: Beiträge zur Koleopterenfauna der Mark Brandenburg, XXI. – Deutsche Entomologische Zeitschrift, Neue Folge **3**: 57-69.

Korge, H. 1960: Beiträge zur Koleopterenfauna der Mark Brandenburg (Teil XXIV). – Mitteilungen der Deutschen Entomologischen Gesellschaft **19**: 13-16, 34-36.

Korge, H. 1989: Beiträge zur Kenntnis der Tierwelt von Berlin (West). Teil I: Kurzflügelkäfer (Coleoptera, Staphylinidae). – Berliner Naturschutzblätter **33**: 28-40.

Kraatz, G. 1856: Naturgeschichte der Insecten Deutschlands. Erste Abtheilung Coleoptera. Zweiter Band. Lieferung 1 und 2. – Berlin, Nicolai: viii + 376 pp.

Krása, T. 1914: Coleopterologische Notizen. – Coleopterologische Rundschau **12**: 174-175.

Kroker, H. & Renner, K. 1983: Beitrag zur Kenntnis der Staphylinidenfauna unbewaldeter Habitate der Warburger Börde. – Abhandlungen des Westfälischen Museums für Naturkunde **45**: 16-23.

Linke, M. 1907: Verzeichnis der in der Umgebung von Leipzig beobachteten Staphyliniden. – Sitzungsberichte der Naturforschenden Gesellschaft zu Leipzig **1906-1907**: 1-54.

Lundberg, S. 1995: Catalogus Coleopterorum Sueciae. – Naturhistoriska Riksmuseet, Entomologiska Föreningen: without pagination.

Müller, A. J. 1926: Nachtrag zum Verzeichnis der Käfer Vorarlbergs. – Vierteljahrsschrift für Geschichte und Landeskunde Vorarlbergs **9-10**: 1-167.

Mulsant, E. & Rey, C. 1852: Description de quelques coléoptères nouvaux ou peu connus de la tribu des Brachelytres. – Opuscules Entomologiques **1**: 15-46.

Mulsant, E. & Rey, C. 1874: Tribu des brévipennes: Famille des aléochariens: Septième branche: Myrmédoniaires. – Annales de la Société d'Agriculture Histoire Naturelle et Arts Utiles de Lyon **6** (1873): 33-727.

Mulsant, E. & Rey, C. 1875: Description d'une nouvelle espèce de brachélytre de la tribu des Aleocharini. – Opuscules Entomologiques **16**: 175-177.

Oromí, P. & Martín, J. L. 1984: *Apteranopsis canariensis* n. sp., un nuevo coleóptero cavernicola de Tenerife (Coleoptera, Staphylinidae). – Nouvelles Revue d'Entomologie (N. S.) **1**: 41-48.

Pace, R. 1977: Quindici nuove specie di stafilinidi ipogei dell'Italia centro-meridionale (Coleoptera). – Redia **60**: 125-177.

DOI: 10.21248/contrib.entomol.58.1.145-189

PACE, R. 1994: *Atlantostiba franzi* gen. n., sp. n. delle Canarie (Coleoptera, Staphylinidae). – Lavori, Società Veneziana di Scienze Naturali **19**: 71-75

PACE, R. 1999: Due nuove specie di Aleocharinae microftalme di Malta (Coleoptera, Staphylinidae). – Doriana. Supplemento agli Annali del Museo Civico di Storia Naturale "G. Doria" 7: 1-6.

PACE, R. 2004: Hygronomini e Athetini dell Cina con note sinonimiche (Coleptera, Staphylinidae). – Revue Suisse de Zoologie **111**: 457-523.

PALM, T. 1976: Zur Kenntnis der Käferfauna der Kanarischen Inseln 15-16. – Entomologica Scandinavica 7: 71-74.

PEEZ, A. v. & KAHLEN, M. 1977: Die Käfer von Südtirol. Faunistisches Verzeichnis der aus der Provinz Bozen bisher bekanntgewordenen Koleopteren. – Beilageband 2 zu den Veröffentlichungen des Museum Ferdinandeum, Innsbruck: 525 pp.

PEYERIMHOFF, P. M. DE 1938: Coléoptères nouveaux ou mal connus de Berbérie. VIII. - Le genre *Aleuonota* THOMS. (Staphylinidae). – Bulletin de la Société Entomologique de France **42** (1937): 275-277.

REITTER, E. 1909: Fauna Germanica. Die Käfer des Deutschen Reiches. II. Band. – Stuttgart: 392 pp.

RENNER, K. 2001: Coleoptera Westfalica: Familia Staphylinidae, Subfamilia Aleocharinae). – Abhandlungen aus dem Westfälischen Museum für Naturkunde **63** (5): 1-214.

RENNER, K. 2005: Faunistisch bemerkenswerte Käferfunde zwischen Schwarzwald und Rheinaue (Coleoptera). – Coleo **6**: 99-116.

RYE, E. C. 1876: Notes on British Coleoptera, with descriptions of three new species. – The Entomologist´s Monthly Magazine **12**: 175-182.

SAINTE-CLAIRE DEVILLE, J. 1914: Catalogue critique des coléoptères de la Corse. – Caen, G. Poisson: 401-573.

SAINTE-CLAIRE DEVILLE, J. 1920: Catalogue critique des coléoptères de la Corse. 2e supplément – Annales de la Société Entomologique de France **89**: 377-404.

SCHOLZE, P. 2002: Ein weiterer Beitrag zur Kurzflüglerfauna (Col., Staphylinidae) des Brockens im Harz. – Entomologische Nachrichten und Berichte **45** (2001): 193-197.

SCHOLZE, P. & JUNG, M. 1994: Beiträge zur Faunistik der Kurzflügler (Col., Staphylinidae) im Nordharz und Vorland II. Unterfamilie Aleocharinae. – Entomologische Nachrichten und Berichte **38**: 7-12.

SEGERS, R. 1986: Catalogus Staphylinidarum Belgicae (Coleoptera) – Institut Royal des Sciences Naturelles de Belgique, Documents de Travail **32**: 1-104.

SMETANA, A. 2004: Staphylinidae, subfamily Aleocharinae, pp. 353-494. – In: LÖBL, I. & SMETANA, A. (eds): Catalogue of Palaearctic Coleoptera. II. Hydrophiloidea – Histeroidea – Staphylinoidea. – Stenstrup, Apollo Books: 942 pp.

SÖRENSSON, M. 1981: Anteckningar om intressanta aleochariner. – Entomologisk Tidskrift **102**: 62-64.

STUMPF, T. 1998: Kolepterologische Effizienzkotrolle [sic] zur Renaturierung eines Heideweihers. Teil 1: Erhebung des Ist-Zustandes vor der Renaturierung. – Mitteilungen der Arbeitsgemeinschaft Rheinischer Koleopterologen (Bonn) 7 (1997): 119-162.

SZUJECKI, A. 1968: Introduction to the knowledge of Staphylinidae (Coleoptera) of the Mazowsze Lowland on the base of W. Maczynski collection [English translation of title]. – Polskie Pismo Entomologiczne **38**: 693-752.

TRONQUET, M. 1972: Captures de Staphylins au vol en forêt de Marly – L'Entomologiste **28**: 78-83.

TRONQUET, M. 2006: Catalogue iconographique des coléoptères des Pyrénées-Orientales. Volume I (édition revue et augmentée). Staphylinidae. – Revue de l'Association Roussillonnaise d'Entomologie **15** (Supplément): 1-127 + 78 plates.

VÁSÁRHELYI T. 1985: Békés megye bogárfaunája III. Staphylinidae 2. - Hydrophilidae (Coleoptera). – Folia Entomologica Hungarica **46**: 247-277.

VOGEL, J. 1978: Faunistisch bedeutsame und für die DDR neue Staphylinidae (Coleoptera) aus der Oberlausitz. – Abhandlungen und Berichte des Naturkundemuseums Görlitz **52** (8): 1-13.

DOI: 10.21248/contrib.entomol.58.1.145-189

Vogel, J. 1982: Untersuchungen zur Erfassungsmethodik und Struktur der Staphyliniden-Fauna (Coleoptera, Staphylinidae) einiger Laubgehölz-Standorte der Landeskrone bei Görlitz. – Abhandlungen und Berichte des Naturkundemuseums Görlitz **55** (3): 1-39.

Vogel, J. & Dunger, W. 1980: Untersuchungen über Struktur und Herkunft der Staphyliniden-Fauna (Coleoptera, Staphylinidae) einer Rasen-Wald-Catena in Thüringen (Leutratal bei Jena). – Abhandlungen und Berichte des Naturkundemuseums Görlitz **53** (3): 1-48.

Wörndle, A. 1950: Die Käfer von Nordtirol. – Schlern-Schriften, Innsbruck **54**: 1-388.

Zanetti, A. 1995: Habrocerinae, Trichophyinae, Tachyporinae e Aleocharinae (generi 148-314), pp. 33-58. – In: Ciceroni, A.; Puthz, V. & Zanetti, A.: Coleoptera, Polyphaga III (Staphylinidae). Checklist delle specie della fauna italiana. – Calderini Bologna, Fasc. **48**: 1-65.

Zerche, L. 1980: Faunistisch interessante Staphylinidae aus der DDR (Coleoptera). – Entomologische Nachrichten **24**: 145-165.

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