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On the *Cephennium* fauna of the Iberian Peninsula and the Atlantic Islands (Coleoptera, Staphylinidae, Scydmaeninae)

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A b s t r a c t : Based on a study of Iberian and Madeiran material of *Cephennium* MÜLLER & KUNZE, 1822, as well as on unpublished notes compiled by the late Claude Besuchet, 38 named species are recognized in Iberian Peninsula to the south of the Spanish border with France and Andorra, and three in Madeira, the only Atlantic archipelago from where the genus has been recorded. The species are attributed to eight species groups. With three exceptions (male unknown, type material lost, or identity doubtful), illustrations or references to recently published figures are provided for all the species of the Iberian Peninsula and Madeira. Seventeen species are described for the first time: *C. constrictum* nov.sp. (Spain: Cataluña: Sierra del Cadi) of the *C. perispinctum* group; *C. validum* nov.sp. (Northwest Spain, North Portugal), *C. conlectior* nov.sp. (North Portugal: Serra da Estrela), *C. algarvense* nov.sp. (Portugal), and *C. lompei* nov.sp. (Madeira proper) of the *C. validum* group; *C. filabresicum* nov.sp. (Spain: Andalucía: Sierra de los Filabres) and *C. espunae* nov.sp. (Spain: Murcia: Sierra de Espuña) of the *C. caecum* group; *C. tensum* nov.sp. (Spain: Alicante: Sierra de Aitana) and *C. andujari* nov.sp. (Spain: Alicante: Sierra de Aitana) of the *C. tensum* group; *C. tenuissimum* nov.sp. (Spain: Murcia: Sierra de Espuña) of the *C. tenuissimum* group; *C. alacantae* nov.sp. (Spain: Alicante), *C. cujonikum* nov.sp. (Spain: Castilla-La Mancha: Sierra de Segura), *C. verrens* nov.sp. (Spain: Andalucía: Sierra de Segura), *C. segurae* nov.sp. (Spain: Castilla-La Mancha: Sierra de Segura), *C. nevadae* nov.sp. (Spain: Andalucía: Sierra Nevada), *C. cazorlae* nov.sp. (Spain: Andalucía: Sierra de Cazorla), and *C. malagae* nov.sp. (Spain: Andalucía: Malaga) of the subgenus *Macroderus* CROISSANDEAU, 1894. Two subspecies of *C. pygmaeum* SAULCY, 1870 are regarded as doubtful. One species is recorded from Spain for the first time. A catalogue of the named *Cephennium* species recorded from the Iberian Peninsula and Madeira is provided. The distributions of 23 species are mapped. Including the new taxa, the genus is now represented by 251 named species.

K e y w o r d s : Coleoptera, Staphylinidae, Scydmaeninae, *Cephennium*, Iberian Peninsula, Spain, Portugal, Madeira, taxonomy, new species, new records, catalogue, distribution maps.

Introduction

Cephennium MÜLLER & KUNZE, 1822 previously included 234 species and several subspecies distributed in the West Palaearctic region eastwards to Kyrgyzstan. The species have been assigned to six subgenera, with numerous species listed as incertae sedis. According to JAŁOSZYŃSKI & STEVANOVIĆ (2015), the present subgeneric concept is problematic. Only recently, OROUSSET (2017, 2018, 2019a, b) and ASSING & MEYBOHM (2021, in this volume) reviewed the *Cephennium* faunas of France, Greece, Turkey, and the Middle East.

Only few recent taxonomic articles have addressed the Iberian *Cephennium* fauna. CASTELLINI (2011) described four species from Portugal, JALOSZYŃSKI & STRUYVE (2016) described one species from Northwest Spain, and, in the context of a review of the *Cephennium* species of France, OROUSSET (2017, 2018) recorded several species also from Spain. In all, twenty-one species and two subspecies were previously known from the Iberian Peninsula south of the border between Spain and France. In the latest edition of the Palaearctic Catalogue (SCHÜLKE & SMETANA 2015), these species are assigned to four subgenera, the nominal subgenus (six species), *Geodytes* SAULCY, 1864 (seven), *Macroderus* CROISSANDEAU, 1894 (one), and *Phennecium* NORMAND, 1912 (three species and two subspecies). Four species have not been assigned to any subgenus.

Only two species have been recorded from the Atlantic Islands, both of them endemic to Madeira (WOLLASTON 1868, 1871; SCHÜLKE & SMETANA 2015). No recent records have been reported from these islands (ASSING & SCHÜLKE 2006).

Some species are listed for Spain in VÍT & BESUCHET (2004) and consequently also in SCHÜLKE & SMETANA (2015), although primary records have never been published. These secondary records are based on unpublished notes accumulated in the 1950s and 1960s by the late Claude Besuchet (former curator at Muséum d'Histoire Naturelle, Genève). These notes with data on thousands of examined specimens, including available type material of species described before that time, have recently been made available, together with numerous drawings of the aedeagi of both described and undescribed species. Thanks to the courtesy of Claude Besuchet's late wife Betty, this treasure was given to Volker Brachat (Geretsried), who forwarded it to the second author. With the help of these notes and drawings, it was possible to trace primary records of several species, clarify distributions, and to identify species described prior to 1960.

The records and descriptions provided in the present study are based on material accumulated by the second author over the past decades.

Material and methods

The material mentioned in this study is deposited in the following collections:

BMNH The Natural History Museum, London
 FMNH Field Museum of Natural History, Chicago
 HNHM Hungarian Natural History Museum, Budapest
 MCSNG Museo Civico di Storia Naturale "Giacomo Doria", Genova
 MHNG Muséum d'Histoire Naturelle, Genève
 MNB Museum für Naturkunde, Berlin (coll. Schülke)
 MNHNP Muséum National d'Histoire Naturelle, Paris
 NHMW Naturhistorisches Museum Wien
 SDEI Senckenberg Deutsches Entomologisches Institut, Münchenberg
 TLMF Tiroler Landesmuseum Ferdinandeum, Innsbruck
 ZSM Zoologische Staatssammlung München
 cAss private collection V. Assing, Hannover

Most of the material examined by Besuchet (unpubl.) originated from private collections

at that time. The majority of these collections is now housed in public institutions. Major private collections are attributed to museums as follows: HNHM (coll. Reitter); MCSNG (coll. Dodero); MHNG (coll. Besuchet, coll. Curti); MNHNP (coll. Croissandeau, coll. Coiffait); NHMW (coll. Franz, coll. Schubert); TLMF (coll. Reiss). Other collections are indicated as specified in the unpublished notes.

The morphological studies were conducted using Stemi SV 11 (Zeiss) and Discovery V12 (Zeiss) microscopes, and a Jenalab compound microscope (Carl Zeiss Jena). The images were created using digital cameras (Axiocam ERc 5s, Nikon Coolpix 995), as well as Labscope and Picolay software. The maps were created using MapCreator 2.0 (primap) software.

Body length was measured from the anterior margin of the labrum to the apex of the elytra and the length of the aedeagus from the apex of the median lobe to the base of the aedeagal capsule. The "parameral" side (i.e., the side where the sperm duct enters) is referred to as the ventral, the opposite side as the dorsal aspect. When assessing the relative length of the parameres, the apical setae are not included.

Since the current subgeneric classification is weakly supported, most species treated in this paper are not assigned to subgenera, but instead to existing or newly established species groups, whenever possible. The only exception is the subgenus *Macroderus*, which forms a very well-defined lineage constituted by evident synapomorphies.

For the purpose of the present paper, the Iberian Peninsula is defined as the region to the south of the Spanish border with France and Andorra.

Results

Including the 17 new species described in this paper, 38 named species are now known from the Iberian Peninsula and three from Madeira. Except for the well-defined subgenus *Macroderus* (seven species from South Spain and one from North Spain), previous subgeneric assignments are discarded. The remaining species are attributed to eight species groups, the *C. thoracicum* group (one widespread species recorded also from North Spain), the *C. perispinctum* group (six species from North Spain), the *C. silvai* group (one species from Portugal), the *C. validum* group (six species, four from the western Iberian Peninsula and two from Madeira), the *C. asturicum* group (one species from North Spain), the *C. caecum* group (nine species), the *C. tensum* group (two species from Alicante), and the *C. tenuissimum* group (one species from Murcia). Six species (five from the Iberian Peninsula and one from Madeira), of which no material was examined, remain without group assignment. The two subspecies previously reported from the Iberian Peninsula are regarded as doubtful.

With three exceptions (type material lost, male unknown, or identity doubtful), figures or references to recently published illustrations are provided for all the species from the Iberian Peninsula and Madeira.

According to Besuchet (unpubl.), approximately 20 additional undescribed species have been collected in the Iberian Peninsula. This and the remarkable number of newly described species suggests that numerous additional species remain to be discovered and described in the region.

Catalogue of the named species recorded from the Iberian Peninsula and Madeira

In the list below, the species are given in alphabetical order. The subgeneric assignments according to SCHÜLKE & SMETANA (2015) and OROUSSET (2017) are indicated in brackets after each species name: C = *Cephennium*; G = *Geodytes*; M = *Macroderus*; P = *Phennecium*; is = incertae sedis. Taxa of doubtful status are preceded by an asterisk.

Species	Distribution
<i>alacantae</i> nov.sp.	Spain: Alicante
<i>albericum</i> CROISSANDEAU, 1894 [C]	France: Pyrénées-Orientales; Spain: Cataluña
<i>algarvense</i> nov.sp.	South Portugal: Algarve
<i>andujari</i> nov.sp.	Spain: Alicante: Sierra de Aitana
<i>asturicum</i> REITTER, 1880 [P]	North Spain: Navarra to Galicia
<i>atomarium</i> SAULCY, 1870 [G]	Southwest France; North Spain: Navarra, País Vasco, Castilla y León, Cantabria
<i>australe</i> WOLLASTON, 1868 [C]	Madeira: Madeira proper, Porto Santo
<i>caecum</i> SAULCY, 1864 [G]	Southwest France; Spain: Cataluña
<i>catalonicum</i> DODERO, 1918 [G]	Spain: Cataluña
<i>cauchoisi</i> OROUSSET, 2017 [C]	France: eastern Pyrenees; Spain: Cataluña
<i>cazorlae</i> nov.sp.	Spain: Andalucía: Sierra de Cazorla
<i>coiffaiti</i> OROUSSET, 2018 [G]	Southwest France; Spain: Cataluña
<i>conlector</i> nov.sp.	North Portugal: Serra da Estrela
<i>constrictum</i> nov.sp.	Spain: Cataluña
<i>cujonicum</i> nov.sp.	Spain: Castilla-La Mancha: Sierra de Segura
<i>delicatum</i> REITTER, 1884 [C]	South-Portugal; ?North Spain
<i>divergens</i> REITTER, 1884 [M]	Spain: Aragón
<i>espunae</i> nov.sp.	Spain: Murcia: Sierra de Espuña
<i>fairmairei</i> JAKOBSON, 1910 [C]	Northeast Spain; France: Pyrénées
<i>filabresicum</i> nov.sp.	Spain: Andalucía: Sierra de los Filabres
<i>gallicum</i> GANGLBAUER, 1899 [C]	West- and Central Europe; Northeast Spain
<i>gladiator</i> JAŁOSZYŃSKI & STRUYVE, 2016 [G]	Spain: Galicia
<i>hypogaeum</i> NORMAND, 1906 [G]	France: Pyrénées-Orientales; Spain: Gerona
<i>ibericum</i> CROISSANDEAU, 1891 [P]	Spain: Andalucía: Sierra Nevada
<i>kiesenwetteri</i> AUBÉ, 1853 [C]	Pyrenees: France, Andorra, Spain: Cataluña
<i>lompei</i> nov.sp.	Madeira proper
<i>lusitanum</i> CASTELLINI, 2011 [is]	Portugal: Leiria: Porto de Mós
<i>malagae</i> nov.sp.	Spain: Andalucía: Malaga

Species	Distribution
<i>minutissimum</i> (AUBÉ, 1842) [G]	Algeria; France; Italy; Switzerland; Spain: Cataluña, Baleares
<i>mycetoeides</i> WOLLASTON, 1871 [C]	Madeira
<i>nevadae</i> nov.sp.	South Spain: Andalucía: Sierra Nevada
<i>portomosense</i> CASTELLINI, 2011 [is]	Portugal: Leiria: Porto de Mós
<i>*pygmaeum algeciranum</i> REITTER, 1882 [P]	Spain: Andalucía
<i>pygmaeum pygmaeum</i> SAULCY, 1870 [P]	Spain: Andalucía
<i>*pygmaeum striolatum</i> REITTER, 1882 [P]	Spain: Andalucía; North Portugal
<i>scutulatum</i> CASTELLINI, 2011 [is]	Portugal: Santarém: Golega
<i>segruae</i> nov.sp.	Spain: Castilla-La Mancha: Sierra de Segura
<i>silvai</i> CASTELLINI, 2011 [is]	Southeast Portugal: Beja
<i>tensum</i> nov.sp.	Spain: Alicante: Sierra de Aitana
<i>tenuissimum</i> nov.sp.	Spain: Murcia: Sierra de Espuña
<i>thoracicum</i> (MÜLLER & KUNZE, 1822) [C]	West and Central Europe; Spain: Cataluña
<i>validum</i> nov.sp.	Northwest Spain; North Portugal
<i>verrens</i> nov.sp.	Spain: Andalucía: Sierra de Segura

Taxonomy

Cephennium thoracicum group

The phylogenetic affiliations of the type species of *Cephennium*, *C. thoracicum*, have not been thoroughly revised. Since the morphology of the aedeagus differs in many ways from that of the *C. perispinctum* group, this species is tentatively assigned to a group of its own. Only a single male is reported from North Spain, close to the border with France.

Cephennium thoracicum (MÜLLER & KUNZE, 1822)

Iberian material examined by C. Besuchet (unpubl.): **SPAIN**: 1♂, Cataluña, Lleida, Val d'Aran, Espinasse, Lés (coll. Mateu).

This species is widespread and common in West and Central Europe. The record from Spain in VIT & BESUCHET (2004) and SCHÜLKE & SMETANA (2015) is most likely based on the above male. For illustrations of the male primary and secondary sexual characters see OROUSSET (2017).

Cephennium perispinctum group

In the Iberian Peninsula, this group is represented by at least six described species. For characters constituting this group see ASSING & MEYBOHM (in press). The Iberian distributions of the representatives of this group are confined to North Spain.

***Cephennium gallicum* GANGLBAUER, 1899**

Material examined: **SPAIN:** 11♂♂, 3♀♀, Castilla y León, 40 km E Burgos, NE Valmala, 42°18'N, 3°16'W, 1190 m, oak forest, 12.X.2003, leg. Assing (cAss); 3♀♀, Sierra de la Demanda, valley of Valvanera monastery, 1.VIII.1971 (cAss); 1♀, Logroño, Villoslada de Cameros, 31.VII.1971 (cAss); 4♂♂, 2♀♀, Cataluña, N Barcelona, Sierra de Montseny, 1500-1700 m, 26.V.1982, leg. Ulbrich (cAss).

Iberian material examined by C. Besuchet (unpubl.; material deposited in MHNG and several other collections): **SPAIN:** C a t a l u ñ a : 3 exs., N Barcelona, Sierra de Montseny, leg. Liebmann, Zariquiey; 2 exs., Sierra de Montseny, Santa Fe, leg. Vives. L a r i o j a : 3 exs., Sierra de la Demanda, valley of Valvanera monastery, leg. Franz; 5 exs., Logroño, Valvanera monastery, leg. Besuchet; 1 ex., Logroño, Anguiano, leg. Besuchet. C a s t i l l a y L e ó n : 1 ex., Burgos, Puerto El Collado, leg. Besuchet. C a n t a b r i a : 5 exs., Santander, Santoña, leg. Besuchet (MHNG); 2 exs., Santander, Liendo env., Monte de Candina, leg. Besuchet; 6 exs., San Sebastian, pass between Elgoibar and Azcoitia, leg. Besuchet.

This species is widespread and common in West, Southwest, and Central Europe. In the Iberian Peninsula it appears to be confined to the north, from Cantabria in the west to Cataluña in the east. Aside from the specimens listed above, Besuchet (unpublished) examined abundant material from numerous localities in France, Britain, and Central Europe. For numerous published records from France and illustrations of the male primary and secondary sexual characters see OROUSSET (2017).

***Cephennium kiesenwetteri* AUBÉ, 1853 (Figs 25-26)**

Material examined: **FRANCE:** P y r é n é e s - O r i e n t a l e s : 4♂♂, 8♀♀, Vernet-les-bains, 3.VII.1976, leg. Meybohm (cAss); 1♂, 6♀♀, Sahorre, 4.VII.1976, leg. Meybohm (cAss); 3♂♂, Prades env., Cuxa, VII.1978, leg. Frank (cAss); 1♀, Col du Cavaire de Font Romeu, 1840 m, 20.VI.1999, leg. Wolf (cAss). A r i è g e : 1♂, Rebenty env., 1.VII.1976, leg. Meybohm (cAss). H a u t e - G a r o n n e : 1♂, 1♀, Marignac, Forêt de Burat, 800-1000 m, 20.VI.2004, leg. Wolf (cAss); 7♂♂, 5♀♀, Cabane de Salode env., Pic de Burat, 1300-1500 m, 18.VI.2004, leg. Wolf (cAss); 1♂, Bagnères-de-Luchon, Sode/Artigue, ca. 800 m, 17.VI.2004, leg. Wolf (cAss); 3♂♂, 1♀, Bagnères-de-Luchon, Forêt Dominale, 1500 m, 22.VI.2004, leg. Wolf (cAss). **SPAIN:** C a t a l u ñ a : 1♂, N Barcelona, Sierra de Montseny, 1400 m, 19.III.1994, leg. Wunderle (cAss).

Material examined by C. Besuchet (unpubl.; material deposited in MHNG and numerous other collections): **FRANCE:** H a u t e s - P y r é n é e s : 15 exs., Aragnouet, 1 ex., Cramezaygues; 1 ex., Payolle; A r i è g e : 1 ex., La Bastide S la de Feroliac; 1 ex., Salau; 1 ex., "Gr. de Peyort"; 10 exs., Ax-les-Thermes; 10 exs., Le Lata near Ax-les-Thermes; 3 exs., St. Lary; 1 ex., Souex Kercabanac; 1 ex., Biert; 1 ex., Forêt de Belestia; 1 ex., Aulus; 1 ex., Grotte de Capêtes; 2 exs., Hospitalet; 1 ex., Massat; 12 exs., locality not specified; 3 exs., Ariège, locality illegible. H a u t e - G a r o n n e : 2 exs., Portet-d'Aspet; 2 exs., Bagnères-de-Luchon; 1 ex., St. Lary; A u d e : 24 exs., Belcaire; 4 exs., Puivert; 6 exs., Forêt de Nave; 1 ex., Forêt de Boucheville; 6 exs., Nebios; 1 ex., Gr. de l'Homme mort; 1 ex., Escouloubre; 3 exs., Grotte Pic Laguzou; 11 exs., Coudons; 2 exs., locality not specified. P y r é n é e s - O r i e n t a l e s : 5 exs., La Preste; 1 ex., Moline; 1 ex., Font Romen [?]; 4 exs., Forêt Bolquez; 4 exs., Canigou, 1500 m; 45 exs., Canigou; 7 exs., Le Vernet; 1 ex., M. Nou. L o c a l i t y n o t s p e c i f i e d : 2 exs., Pyrénées, Gesse river; 5 exs., "Htes Pyr.", etc.; 33 exs., "Pyr. Or.", etc.; 27 exs., "Pyrénées", "Pyrenaeen", etc. **ANDORRA:** 1 ex., Pic de Casamanya; 1 ex., Grdino [?]; 3 exs., Curtinada. **SPAIN:** C a t a l u ñ a : 1 ex., Gerona, Col de Casas; 1 ex., Sierra de Montseny; 5 exs., Lleida, Mato de Valencia; 11 exs., Lleida, Val d'Aran, Portillon [?]; 1 ex., Lleida, Val d'Aran, Betrens; 1 ex., Lleida, Val d'Aran, Bosc Bericauba; 1 ex., Lleida, Val d'Aran, Salardu; 10 exs., Lleida, Val d'Aran.

This species is rather common in the Pyrenees and adjacent regions. In Spain, it has been recorded only from Cataluña. The aedeagus is illustrated in Figs 25-26. For numerous

records and illustrations of the male primary and secondary sexual characters see OROUSSET (2017).

***Cephennium cauchoisi* OROUSSET, 2017**

Cephennium minor BESUCHET i.l.

Material examined: **FRANCE:** Pyrénées-Orientales: 4♂♂, 5♀♀, Vernet-les-bains, 3.VII.1976, leg. Meybohm (cAss); 12♂♂, 9♀♀, Vernet-les-bains, Abb^e de St. Martin env., 1000 m, 16-19.VI.1999, leg. Wolf (cAss); 1♀, Vernet-les-bains, Miriailles, 30.VI.2000, leg. Rheinheimer (cAss); 1♀, Prats de Mollo, 4.VII.2000, leg. Rheinheimer (cAss). **SPAIN:** 1♂, Gerona, S Coll de Arras, 11.III.1978, leg. Lohse (cAss).

Material examined by C. Besuchet (unpubl.; identified as *C. minor* i.l.): **FRANCE:** Pyrénées-Orientales: 10♂♂, 7♀♀, La Preste, En Brixot, leg. Cauchois (MHNG, coll. Cauchois); 9♂♂, 3♀♀, La Preste, leg. Cauchois (MHNG, coll. Cauchois); 1♀, La Preste, Grotte St. Marie, leg. Cauchois (coll. Cauchois); 1♂, Canigou, 1500 m, leg. Cauchois (coll. Cauchois); 1♂, 1♀, Aegatebia, leg. Cauchois (coll. Cauchois); 1♂, locality not specified (MHNG). **Aude:** 1♂, Forêt des Fanges, 3.VIII.1958, leg. Dajoz (MHNG). **Locality not specified:** 3♂♂, "Pyrénées" (MHNG).

The original description of this recently described species is based on numerous specimens from Pyrénées-Orientales. The above male from Gerona represents the first record from Spain. For illustrations of the male primary and secondary sexual characters see OROUSSET (2017).

***Cephennium constrictum* nov.sp. (Figs 1, 27-30, Map 1)**

Type material: Holotype ♂: "E. Umg. Barcelona, Sierra del Cadi, 1700-2000 m, Col de Pal, 31.III.1994 Assing / Holotypus ♂ *Cephennium constrictum* sp. n. det. V. Assing 2020" (cAss). Paratype ♂: same data as holotype (cAss).

Etymology: The specific epithet (Latin, adjective) alludes to the subapically constricted ventral process of the aedeagus (ventral view).

Description: Body length 1.6-1.7 mm. Habitus as in Fig. 1. Body reddish-brown to dark-brown. External and male secondary sexual characters as in *C. kiesenwetteri*.

♂: aedeagus (Figs 27-30) 0.62 mm long; ventral process rather weakly curved in lateral view, medially distinctly dilated and subapically strongly constricted in ventral view; internal sac apically with a pair of clusters of long thin spines.

Comparative notes: As can be inferred from the highly similar external and male sexual characters, this species is very closely related to *C. kiesenwetteri*, from which it is distinguished only by the less strongly curved (lateral view), medially strongly dilated, and subapically strongly constricted ventral process of the aedeagus, as well as by the slightly longer apical spines in the internal sac of the aedeagus. For comparison, the aedeagus of *C. kiesenwetteri* is illustrated in Figs 25-26.

Distribution and natural history: The type locality is a pass in Sierra del Cadi, approximately 100 km to the north-northwest of Barcelona (Map 1). The specimens were sifted from litter and moss in north slopes with pine and juniper at altitudes between 1700 and 2000 m.

***Cephennium fairmairei* JAKOBSON, 1910**

Material examined: **FRANCE:** H a u t e s - P y r é n é e s : 4♂♂, 1♀, Col d'Aubisque env., 24.VII.1972, leg. Meybohm (cAss); 1♀, Gavarnie, 30.VI.1976, leg. Meybohm (cAss); 5♂♂, 2♀♀, Gavarnie, Gédre-Toumousse, 22.VII.1972, leg. Meybohm (cAss). A r i è g e : 11♂♂, 7♀♀, L'Hospitalet, 1300 m, 21.VI.1999, leg. Wolf (cAss). H a u t e - G a r o n n e : 1♂, Marignac, Forêt de Burat, 800-1000 m, 20.VI.2004, leg. Wolf (cAss); 6♂♂, 1♀, Bagnères-de-Luchon, Sode/Artigue, ca. 800 m, 17.VI.2004, leg. Wolf (cAss). P y r é n é e s - A t l a n t i q u e : 2♂♂, 1♀, Les Eaux-Chaudes, 25.VII.1972, leg. Meybohm (cAss). **SPAIN:** P a í s V a s c o : 1♀, Tolosa env., Regil, 2.VIII.1972 (cAss). N a v a r r a : 1♂, Orbaiceta env., 4.VIII.1971 (cAss).

Material examined by C. Besuchet (unpubl.; material deposited in MHNG and numerous other collections): **FRANCE:** H a u t e s - P y r é n é e s : 20 exs., Bagnères-de-Bigorre; 3 exs., Bagnères-de-Bigorre, Fontaine des Fées; 2 exs., Bagnères-de-Bigorre, Le Bédât; 1 ex., Tournay; 3 exs., Grotte d'Asque; 8 exs., Payolle; 24 exs., Cauterets; 5 exs., Aragnouet; 4 exs., Grotte Labastide; 1 ex., La Barthe-de-Neste; 1 ex., Alsasna; 6 exs., locality illegible or not specified. P y r é n é e s - A t l a n t i q u e s : 2 exs., Grotte de Sari; 1 ex., Gabas; 1 ex., Forêt d'Iraty; 2 exs., orêt d'Arudy; 4 exs., Grotte Malarode; 1 ex., 9 exs., Louvie-Juzon; 1 ex., Larrau, Ravin d'Ursuia; 1 ex., Sare; 7 exs., locality illegible. H a u t e - G a r o n n e : 8 exs., Bagnères-de-Luchon, Val d'Arboust du Buysson; 5 exs., Saint-Béat, El Barbier; 5 exs., Montréjeau. A r i è g e : 1 ex., Bethmale; 1 ex., Castet d'Aleu; 1 ex., Hospitalet; 1 ex., L'Estelas; 1 ex., St. Lary; 3 exs., Massat; 1 ex., Forêt de Bélesta; 1 ex., Grotte Bedeilhac; 1 ex., Aulus; 2 exs., Villeneuve; 1 ex., Seix; 4 exs., locality illegible or not specified. A u d e : 6 exs., Belcaire; 2 exs., Nébias; 6 exs., Forêt de Niave; 1 ex., Lavagne. P y r é n é e s - O r i e n t a l e s : 2 exs., Le Vernet; 2 exs., locality illegible. L o c a l i t y n o t s p e c i f i e d : 37 exs., "Pyrénées", "Pyrenaeen", etc. **SPAIN:** C a t a l u ñ a : 2 exs., Espinalber; 3 exs., Lleida, Val d'Aran, Canejan; 1 ex., Lleida, Val d'Aran. N a v a r r a : 1 ex., Abourrea Alta. P a í s V a s c o : 3 exs., Tolosa env., Mt. Alzo.

The distribution ranges from the eastern Pyrenees to Pais Vasco. In Spain, the species is known from Cataluña, Navarra, and Pais Vasco. For numerous previously published records and illustrations of the male primary and secondary sexual characters see OROUSSET (2017).

***Cephennium albericum* CROISSANDEAU, 1894**

Iberian material examined by C. Besuchet (unpubl.): **SPAIN:** C a t a l u ñ a : 2♂♂, 1♀, Collsacabra (coll. Besuchet, coll. Español); 1♂, Barcelona, Alella (coll. Español); 1♀, Gualba (coll. Español); 1♂, 3♀♀, Sierra de Montseny, leg. Zariquiey (coll. Español); 1♀, Tiana (coll. Español); 1♀, Taradell (coll. Español); 1♀, Capçanes, leg. Español (coll. Español); 1♂, Montserrat, leg. Coiffait (coll. Coiffait); 2♂♂, Gerona, Riells, leg. Español (coll. Besuchet, coll. Español); 6♂♂, Gerona, La Salut, leg. Molses (coll. Besuchet, coll. Español); 1♀, Ripoll, leg. Coiffait (coll. Coiffait); 1♂, La Junquera, leg. Comellini (coll. Besuchet); 3♂♂, locality illegible (coll. Besuchet, coll. Español).

OROUSSET (2017) reports this species from four localities in Gerona and Barcelona (Northeast Spain: Cataluña) and several localities in Pyrénées-Oriental (Southwest France). In addition to the material listed above, Besuchet (unpubl.) examined specimens from several localities in Pyrénées-Oriental. For illustrations of the male primary and secondary sexual characters see OROUSSET (2017).

***Cephennium silvai* group**

This group includes *C. silvai* from Portugal and at least one undescribed species from Alicante (Spain). It is distinguished from other groups recorded from the Iberian

Peninsula by a small, slender, moderately convex (cross-section), and bicoloured body, elytra with distinct and long supra-humeral carinae, unmodified male protibiae, and a robust aedeagus with large, but weakly sclerotized internal structures and with thin parameres apically reaching the apex of the median lobe and with short apical seta.

***Cephennium silvai* CASTELLINI, 2011**

Material examined: **PORTUGAL:** 1♂, Alentejo, Mertola, 37°38'N, 7°38'W, 110, shrubs on stream bank sifted, 4.IV.2002, leg. Meybohm (cAss).

The original description is based on type material from three localities in the Mertola region, Beja, Southeast Portugal. For illustrations of the aedeagus see CASTELLINI (2011).

***Cephennium validum* group**

This assemblage includes six named species from the western Iberian Peninsula and from Madeira characterized by small body size (0.8-1.0 mm), a usually more or less distinctly bicoloured and rather strongly convex (cross-section) body, moderately modified male protibiae, and particularly by a small aedeagus with stout and straight parameres and with very indistinct, minute internal structures.

***Cephennium delicatum* REITTER, 1884**

The original description is based on an unspecified number of syntypes from "Süd-Portugal" (REITTER 1884). Besuchet (unpubl.) examined a male syntype labelled "Puerte de Nava Lerada [Serada?]. Süd Portug." (coll. Croissandeau), which he intended to designate as the lectotype, and another male from "Umg. Coriscão, Picos de Europa 2100 m, Franz" (coll. Besuchet). Based on the illustration of the aedeagus of the latter male by Besuchet (unpubl.), *C. delicatum* belongs to the *C. validum* group. In view of the restricted distributions of other species of this group, however, it appears rather unlikely that the two males examined belong to the same species. Alternatively, one of them may have been mislabelled.

***Cephennium validum* nov.sp. (Figs 2, 34-36, Map 1)**

Cephennium distinctum BESUCHET i.l.

Type material: **Holotype** ♂: "P Serra da Peneda, nördl. Soajo, 525 m, Meybohm 24.3.2002, N41°53', W8°16' / Holotypus ♂ *Cephennium validum* sp. n. det. V. Assing 2020" (cAss). **Paratypes:** 3♂♂: same data as holotype (cAss); 2♂♂: "P Serra do Geres, sw Portela do Homem, Meybohm 23.3.2002, N41°47' W8°8'" (cAss); 2♂♂, 3♀♀: "P Serra de Montezinho, Rio Sabor, 960 m, Meybohm 21.3.2002, N41°54' W6°48'" (cAss).

Additional type material examined by C. Besuchet (with type labels "*Cephennium distinctum*"): 7♂♂, 8♀♀, 6 exs.: "Ponferrada, Paganetti" (FMNH, HNHM, MCSNG, MHNG, MNB, NHMW, SDEI; coll. Horion, coll. Lindberg); 2♂♂, 3 exs.: "Serra de la Fontefria près de Salamosa, Prov. Pontevedra" (NHMW); 5♂♂, 6♀♀: "Isla Estela entera b. Bayona, Franz" (MHNG, NHMW); 4♂♂, 6♀♀: "Isla Estela de Fuera b. Bayona, Prov. Pontevedra, Franz" (MHNG, NHMW); 3♂♂, 3♀♀: "Valle de Lozera, Prov. Lugo, Franz" (MHNG, NHMW); 1♂, 3♀♀: "Isla Cies del Norte, Prov. Pontevedra, Franz" (NHMW); 2♂♂, 2♀♀: "Mondariz, Prov. Pontevedra, Franz" (MHNG, NHMW); 2♂♂: "Rio Muria [?] b. Morana, Franz" (NHMW); 2♂♂: "Belus, Prov. Pontevedra, Franz" (NHMW); 1♂, 2♀♀: "Los Peares, Franz" (NHMW); 1♂, 3♀♀: "Umg. Pontevedra, Franz" (NHMW); 1♂, 3♀♀: "Prov. La Coruña, Cayon, Besuchet" (MHNG); 3♂♂: "Prov. León, Molina Ferreda ds. vallée Rio Duerna. Besuchet" (MHNG); 1♂: "Manzaneda (Orense), Ms. Gonzalez"

(coll. Gonzalez); 1♂, 1♀: "Sierra de Cabrera, Umg. Molinaferreda, Prov. Leon, Franz" (NHMW); 1♂, 1♀: "Sierra de la Grova, Hisp. bor. Prov. Pontevedra, Franz" (NHMW); 1♀: "Umg. San Saturnino, Prov. La Coruña, Franz" (NHMW).

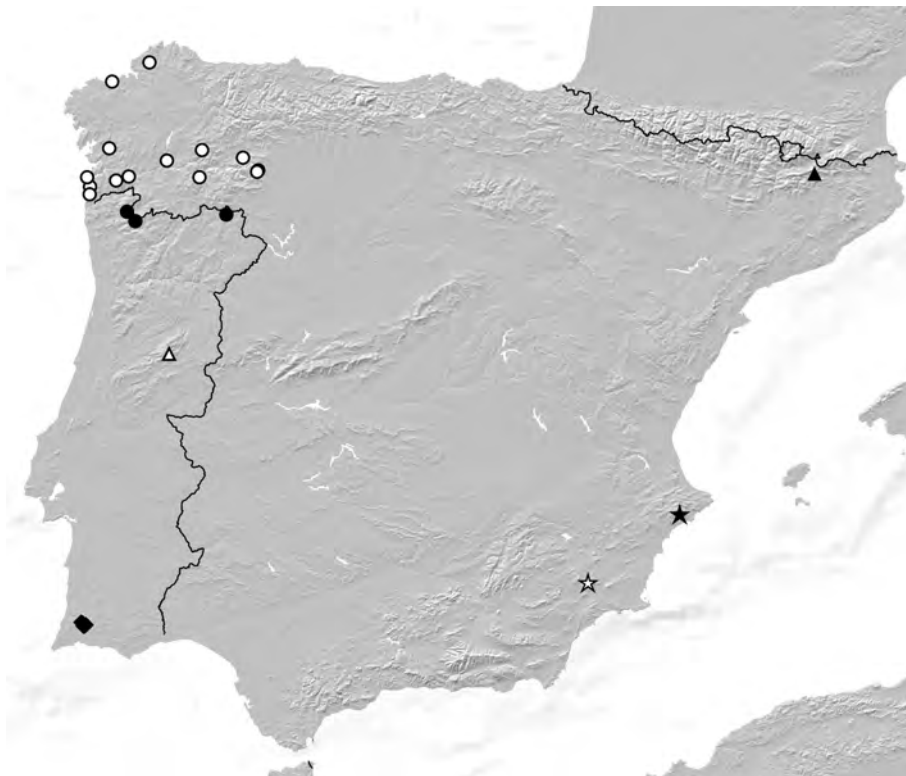
E t y m o l o g y : The specific epithet (Latin, adjective: strong) alludes to the conspicuously stout parameres of the aedeagus.

D e s c r i p t i o n : Small species; body length 0.8-1.0 mm. Habitus as in Fig. 2. Colouration variable, body pale-reddish to dark-brown, sometimes bicoloured with the head and pronotum reddish and the elytra dark-brown.

Eyes composed of approximately eight ommatidia with weak pigmentation.

Pronotum strongly convex in cross-section, large in relation to elytra, and strongly transverse, approximately 1.3 times as broad as long, broadest in anterior half; lateral margins often weakly sinuate posteriorly; punctation fine, but distinct, and rather dense; interstices without microsculpture.

Elytra as broad as, or slightly broader than pronotum; supra-humeral carinae short and indistinct, approximately as long as the combined length of the basal three antennomeres; anterior impressions small and tomentose; punctation fine and rather dense.



Map 1: Distributions of *Cephennium* spp. in the Iberian Peninsula: *C. constrictum* (black triangle); *C. validum* (black circles: examined material; white circles: based on Besuchet unpubl.); *C. conlector* (white triangle); *C. algarvense* (black diamonds); *C. espunae* (white star); *C. tenuissimum* (white star); *C. tensum* (black star).

♂: protibia apically moderately curved; meso- and metatibiae somewhat flattened on inner face in apical portion; aedeagus (Figs 34-35) small, 0.22-0.25 mm long; median lobe apically of acutely triangular shape; internal sac with very small and weakly sclerotized median internal structure (Fig. 36); parameres very stout, straight, apically not reaching apex of median lobe, and with long apical seta.

Comparative notes: *Cephennium validum* is distinguished from other Iberian representatives of the *C. validum* group particularly by the shape of the median lobe of the aedeagus.

Distribution and natural history: This species is rather widespread in the northwest of the Iberian Peninsula (Northwest Spain, North Portugal) and was even found on small islets off the Galician coast (Map 1). The altitudes range from near sea-level to at least 960 m.

***Cephennium conlector* nov.sp.** (Figs 3, 37, Map 1)

Type material: Holotype ♂: "P Serra da Estrela, s Manteigas, 1070 m, Meybohm 19.3.2002, N40°21', W7°33' / Holotypus ♂ *Cephennium conlector* sp. n. det. V. Assing 2020" (cAss). Paratypes: 1♂, 1♀: same data as holotype (cAss).

Etymology: The specific epithet is the comparative of the Latin adjective *conlectus* (slim) and alludes to the moderately stout parameres, one of the characters distinguishing this species from the similar *C. validum*.

Description: Small species; body length 0.9-1.0 mm. Habitus as in Fig. 3. Head and pronotum pale-reddish to dark-reddish; elytra brown. External and male secondary sexual characters as in *C. validum*; distinguished only by the morphology of the aedeagus.

♂: aedeagus (Fig. 37) 0.24-0.26 mm long; median lobe apically convex; internal structures indistinct; parameres stout, straight, apically not reaching apex of median lobe, and with moderately long apical seta.

Comparative notes: *Cephennium conlector* is distinguished from the similar *C. validum* only by a more slender and slightly smaller aedeagus with an apically convex median lobe and with very indistinct internal structures.

Distribution and natural history: The distribution is confined to Serra da Estrela in North Portugal (Map 1). The specimens were collected at an altitude of 1070 m.

Comment: Claude Besuchet (unpubl.) examined the following material of a very similar undescribed species from Galicia, distinguished from *C. conlector* by a slightly broader apex of the median lobe and relatively shorter parameres: 5♂♂, 6♀♀: "Grilla del Rio Tambre bei Santiago, Franz" (MHNG, NHMW); 5♂♂, 2♀♀: "Bosque de Cernadas, Umg Santiago, Franz" (MHNG, NHMW); 1♂: "Punta de la Estaca, Prov. La Coruña, Franz" (NHMW); 2♂♂, 1♀: "Sierra mer. [?] Outes bei Noya, Franz" (MHNG).

***Cephennium algarvense* nov.sp.** (Figs 4, 38-40, Map 1)

Type material: Holotype ♂: "P Algarve, 530 m, Serra Monchique, ö Monchique, Meybohm 10.4.2002, N37°19', W8°31' / Holotypus ♂ *Cephennium algarvense* sp. n. det. V. Assing 2020" (cAss). Paratypes: 3♂♂, 5♀♀: same data as holotype (cAss); 8♂♂, 1♀: "P Algarve, 550 m, Serra Monchique, w Monchique, Meybohm 15.4.2002, N37°18', W8°33'" (cAss); 6♂♂, 2♀♀:

"Portugal Algarve, Serra de Monchique, Umg. Portela Viuva, Meybohm 20.2.1999" (cAss); 2♂♂: same data, but 21.2.1999 (cAss); 5♂♂, 2♀♀: "Portugal Algarve, Serra de Monchique, nördl. Foia 800 m, Meybohm 19.2.1999" (cAss); 14♂♂, 6♀♀: "Portugal Algarve, Serra de Monchique, nordwestl. Picota, Meybohm 23.2.1999" (cAss).

E t y m o l o g y : The specific epithet (adjective) alludes to the currently known distribution, which is confined to Algarve.

D e s c r i p t i o n : Small species; body length 0.9-1.0 mm. Habitus as in Fig. 4. Head and pronotum pale-reddish to dark-reddish; elytra brown, rarely of similar colouration as head and pronotum. External and male secondary sexual characters as in *C. validum*; distinguished only by the morphology of the aedeagus.

♂: aedeagus (Figs 38-40) 0.20-0.22 mm long; median lobe apically nearly truncate, in the middle weakly produced; internal structures small and indistinct; parameres stout, straight, apically nearly reaching apex of median lobe, and with moderately long apical seta.

C o m p a r a t i v e n o t e s : This species is distinguished from other representatives of the *C. validum* group only by the shape of the smaller aedeagus.

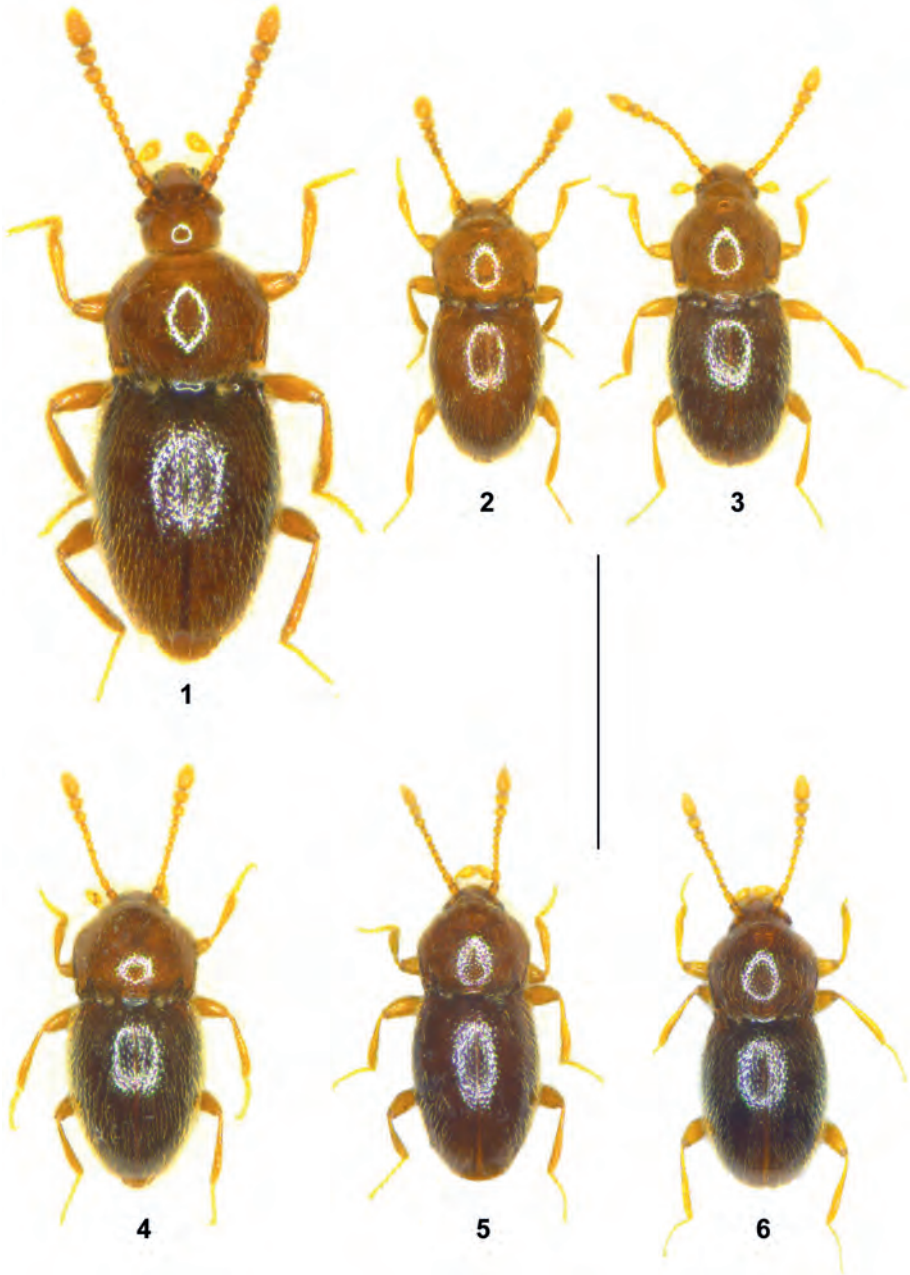
D i s t r i b u t i o n a n d n a t u r a l h i s t o r y : The currently known distribution is confined to Serra de Monchique, Algarve, South Portugal (Map 1). The specimens collected in 2002 were sifted from litter of *Rubus* and near an abandoned house.

***Cephennium australe* WOLLASTON, 1868 (Figs 5, 41-43)**

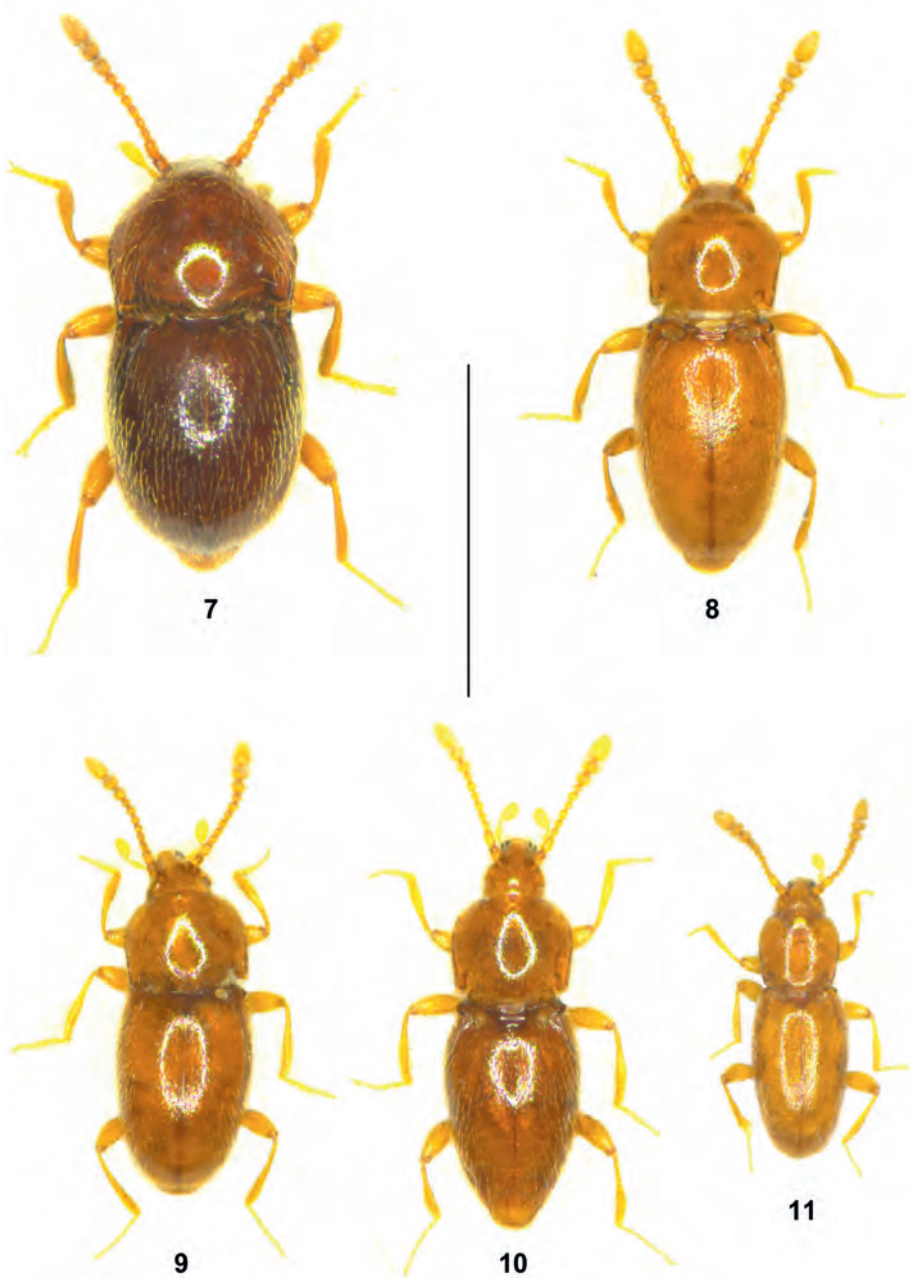
M a t e r i a l e x a m i n e d : **MADEIRA:** 1♂, 2♀♀, 10 exs., Queimadas (7), 900 m, 27.III.1993, leg. Assing & Wunderle (cAss); 1♂, Achada do Teixeira, 1350 m, old *Erica arborea*, litter sifted, 29.III.1996, leg. Assing (cAss); 1 ex., Achada do Teixeira, 32°45'42"N, 16°54'57"W, 1600 m, 20.II.2003, leg. Lompe (cAss); 2♂♂, 1♀, Pico das Pedras-Queimada, 32°46'56"N, 16°54'08"W, 17.II.2017, leg. Lompe (cAss); 1 ex., Encumeada (30), 1000 m, 5.IV.1993, leg. Assing (cAss); 1 ex., Encumeada, 1200 m, sifted, 2.V.2018, leg. Siede (cAss); 1♂, 3 exs., Funchal, Ajuda, 20.VIII.1975, leg. Vít (cAss); 1 ex., same data, but in *Juncus* (cAss); 1 ex., Ribeiro Frio, 32°43'59"N, 16°52'20"W, 900 m, 18.II.2003, leg. Lompe (cAss); 6 exs., Ribeiro Frio, Cabeco do Pessegueiro, 32°43'59"N, 16°52'02"W, 900 m, 18.II.2003, leg. Lompe (cAss); 3 exs., Levada Furado, Poco do Bezerro, 32°43'47"N, 16°52'02"W, 850 m, 18.II.2003, leg. Lompe (cAss); 1 ex., Junqueira, 32°49'28"N, 17°10'35"W, 400 m, 19.II.2003, leg. Lompe (cAss); 4 exs., Levada Nova Ribeiro de Sebastiao Vaz, 32°48'06"N, 16°56'14"W, 26.II.2003, leg. Lompe (cAss); 1 ex., Queimadas, Achada do Roque, Ribeiro da Silveira, 32°46'35"N, 16°54'09", 28.II.2003, leg. Lompe (cAss).

Material examined by C. Besuchet (unpubl.): **MADEIRA:** *M a d e i r a p r o p e r*: 2♂♂, 1♀ [syntypes]: above Funchal, leg. Wollaston (BMNH); 4♂♂, Queimadas, leg. Coiffait (MHNG, MNHNP); 3♂♂, 1♀, Ribeiro Bonito, leg. Franz (MHNG, NHMW); 13♂♂, 5♀♀, Ribeiro Frio, leg. Franz (MHNG, NHMW); 1♂, 1 ex., Portela, 850 m, leg. Williams (coll. Johnson); 10 exs., Eira do Serrado, 1080 m, leg. Williams ("Mus. Manchester"); 4 exs., Levada de Toros, 800 m, leg. Williams ("Mus. Manchester"); 1 ex., Encumeada, 1000 m, leg. Williams ("Mus. Manchester"); 2 exs., Faja de Nogueiro, leg. Askow ("Mus. Manchester"); 38♂♂, 11♀♀, locality not specified, leg. Franz, etc. (MHNG, MNHNP, NHMW). **P o r t o S a n t o :** 5♂♂, 4♀♀, "Pico Julieta" [recte: Pico Juliana], leg. Franz (MHNG, NHMW).

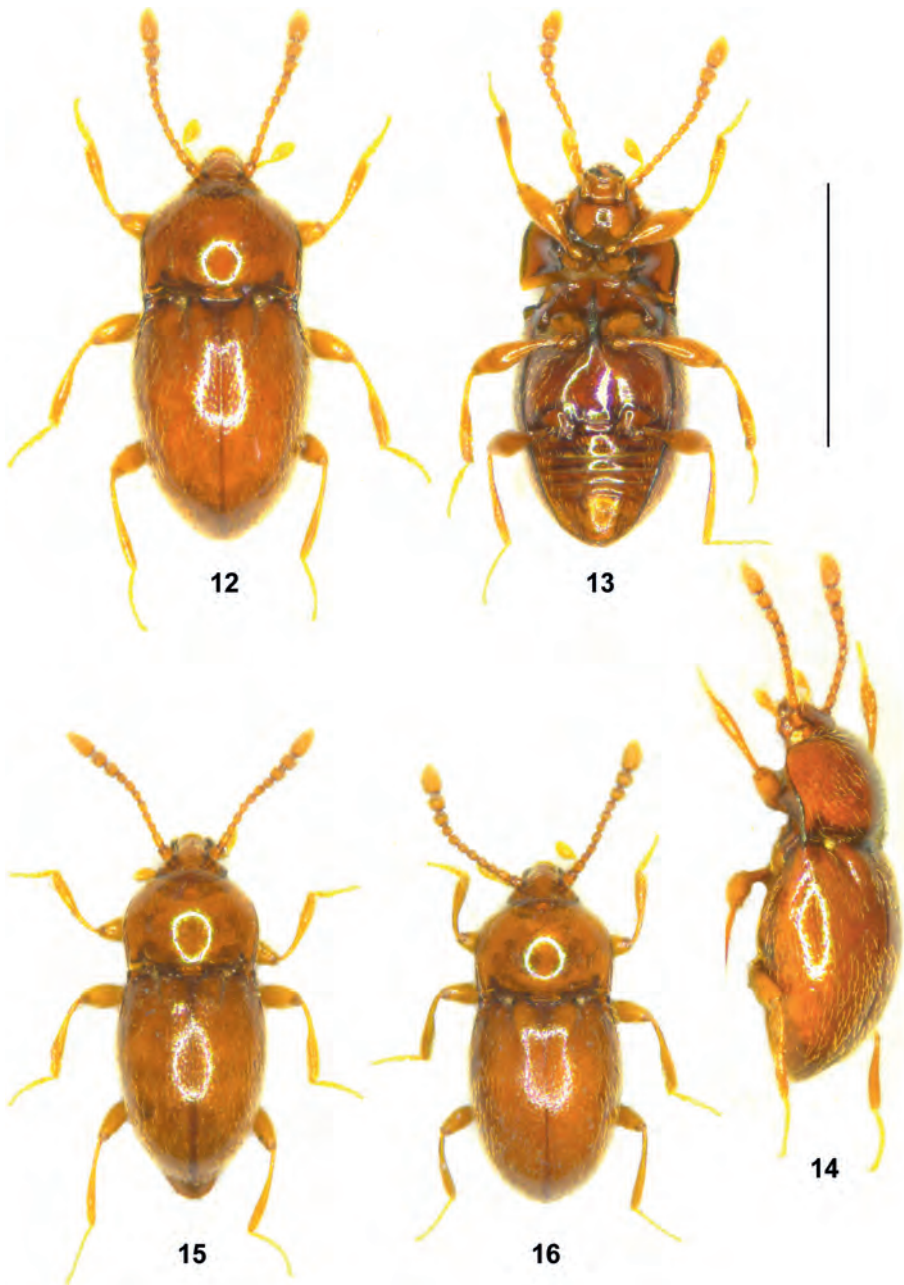
The original description is based on three syntypes collected "in the chestnut-woods at the Mount, on the hills above Funchal" (WOLLASTON, 1868). The syntypes were examined by C. Besuchet (unpubl.) (see above).



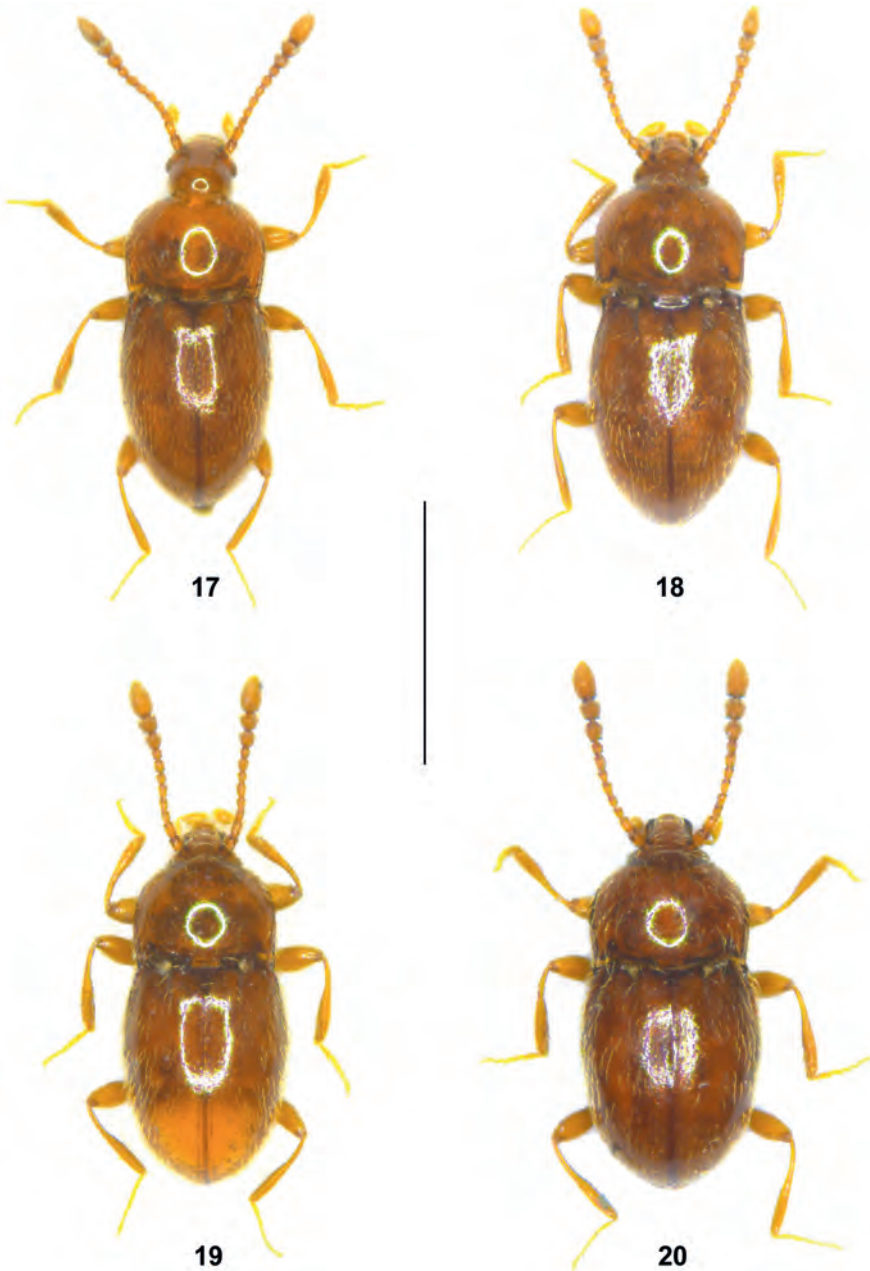
Figs 1-6: Male habitus of *Cephennium constrictum* (1), *C. validum* (2), *C. conlector* (3), *C. algarvense* (4), *C. australe* (5), and *C. lompei* (6). Scale bar: 1.0 mm.



Figs 7-11: Male habitus of *Cephennium asturicum* (7), *C. filabresicum* (8), *C. espunae* (9), *C. tensum* (10), and *C. tenuissimum* (11). Scale bar: 1.0 mm.



Figs 12-16: Male habitus of species of the subgenus *Macroderus* in dorsal (12, 15-16), ventral (13), and in lateral view (14): (12-14) *Cephennium alacantae*; (15) *C. cujonicum*; (16) *C. verrens*. Scale bar: 1.0 mm.



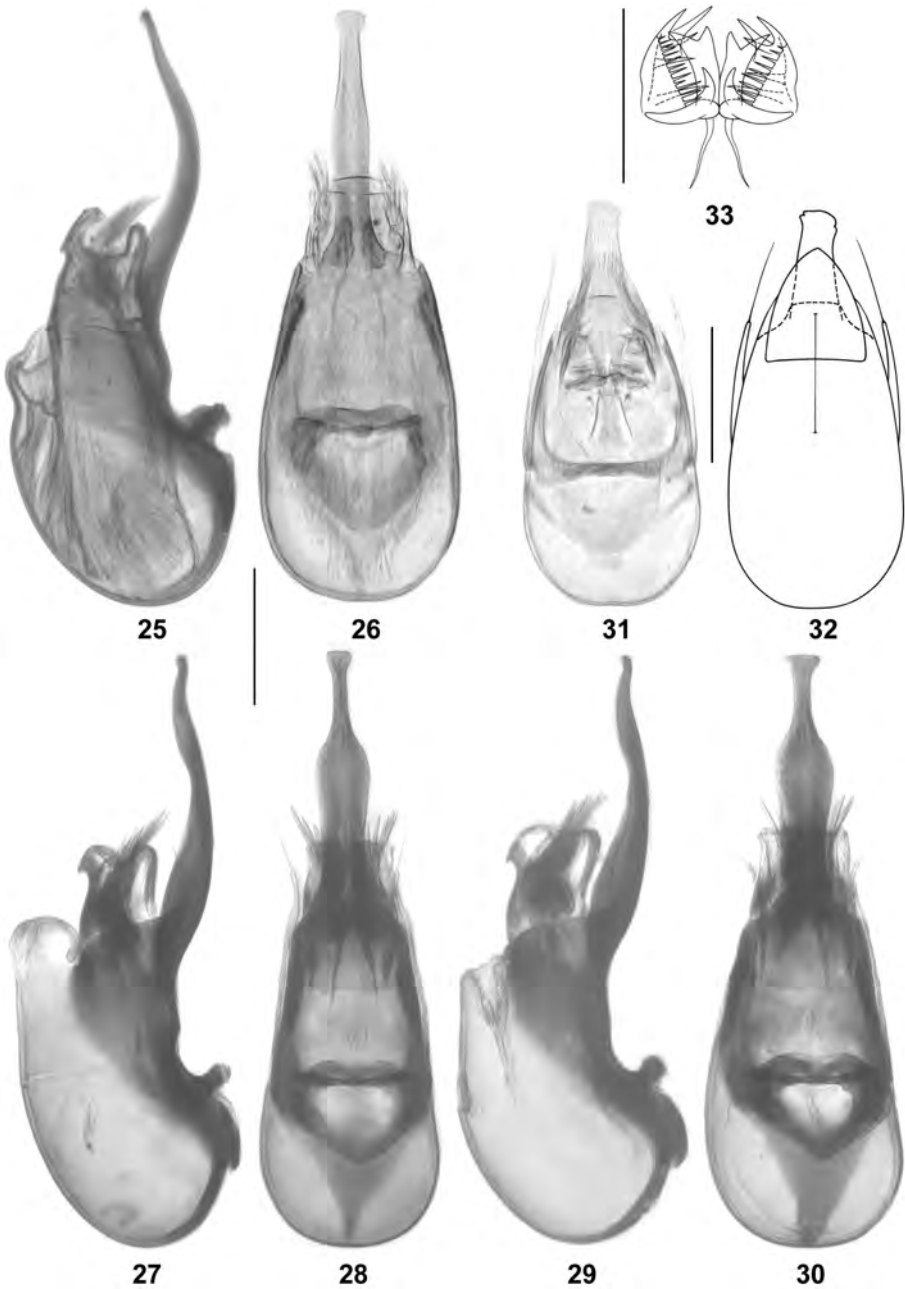
Figs 17-20: Male habitus of species of the subgenus *Macroderus* in dorsal view: (17) *Cephennium segurae*; (18) *C. nevadae*; (19) *C. cazorlae*; (20) *C. malagae*. Scale bar: 1.0 mm.



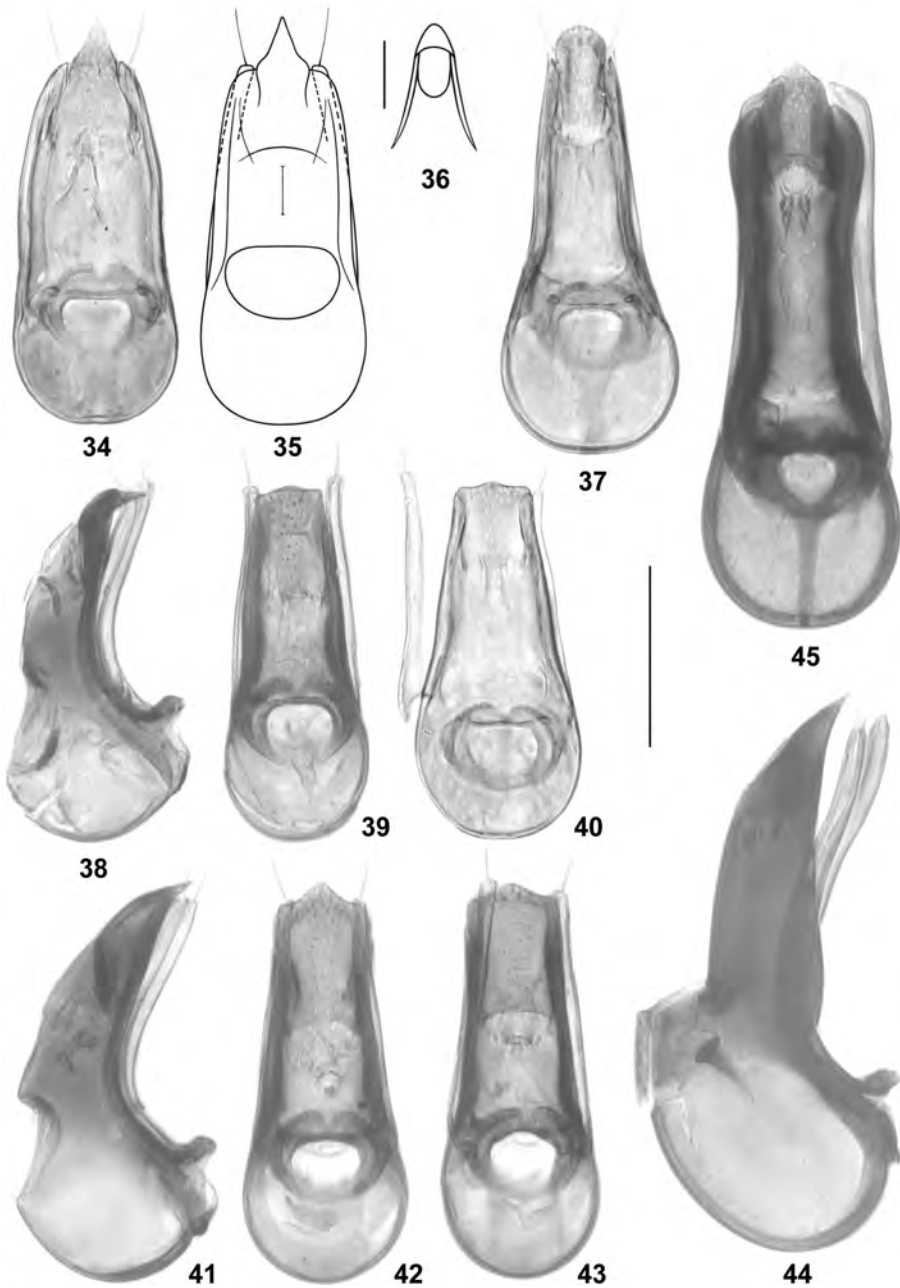
Figs 21-22: Type localities of *Cephennium filabresicum* (21; above) and of *C. espunae* and *C. tenuissimum* (22; below).



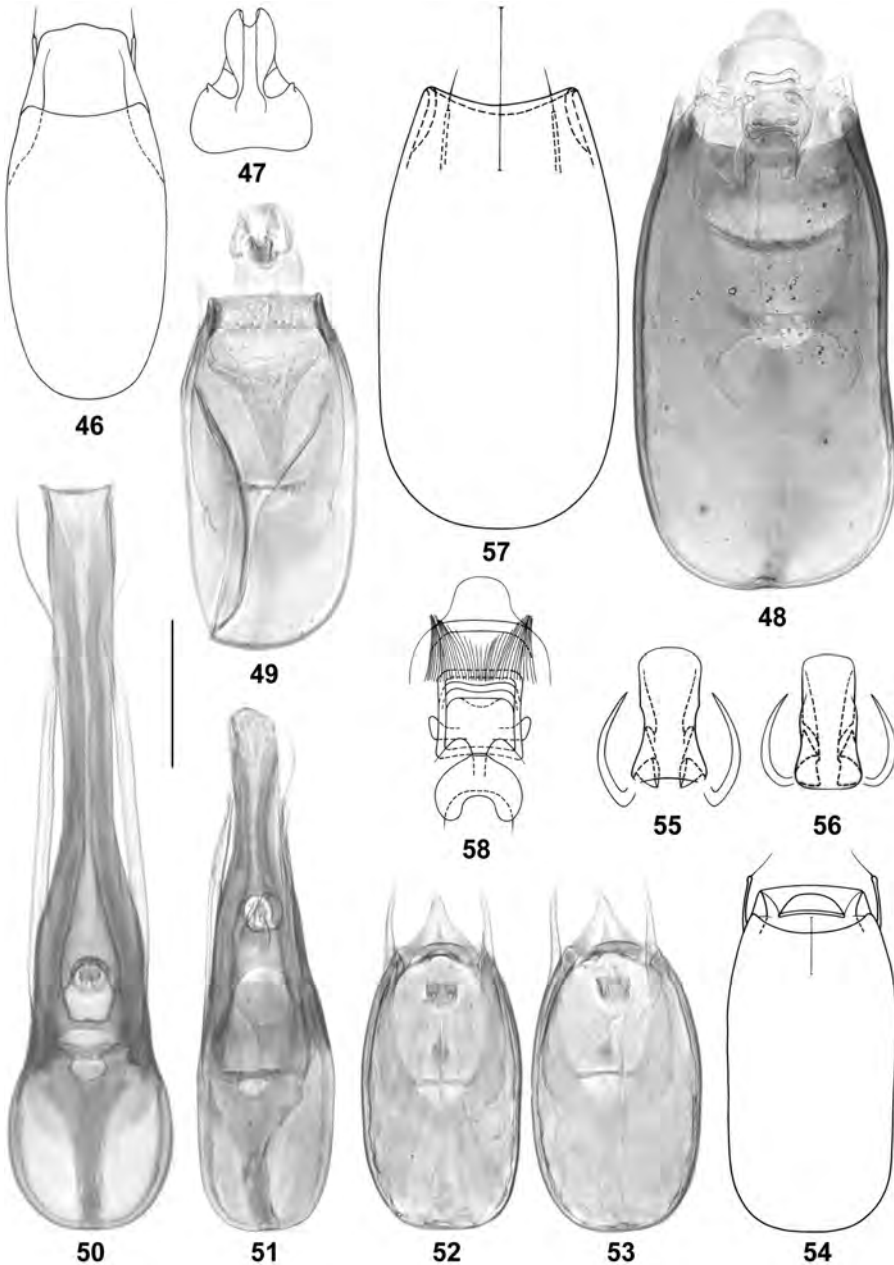
Figs 23-24: Type localities of *Cephennium kujonicum* (23; above) and *C. segurae* (24; below).



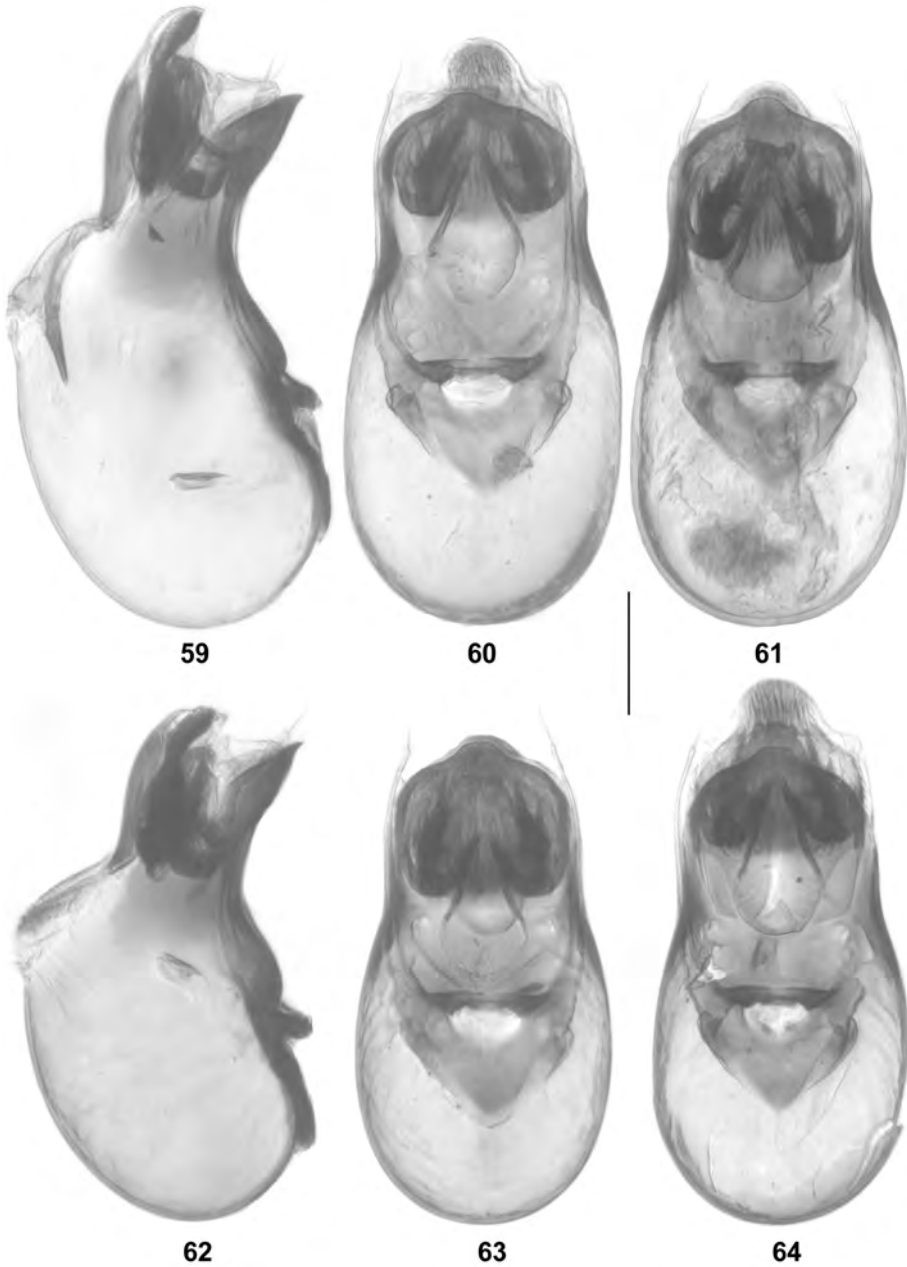
Figs 25-33: *Cephennium kiesenwetteri* (25-26), *C. constrictum* (27-30; 27-28: holotype; 29-30: paratype), and *C. asturicum* (31-33; 32-33: based on Besuchet unpubl.): (25-32) aedeagus in lateral, dorsal, and in ventral view; (33) internal structures of aedeagus in ventral view. Scale bars: 0.1 mm.



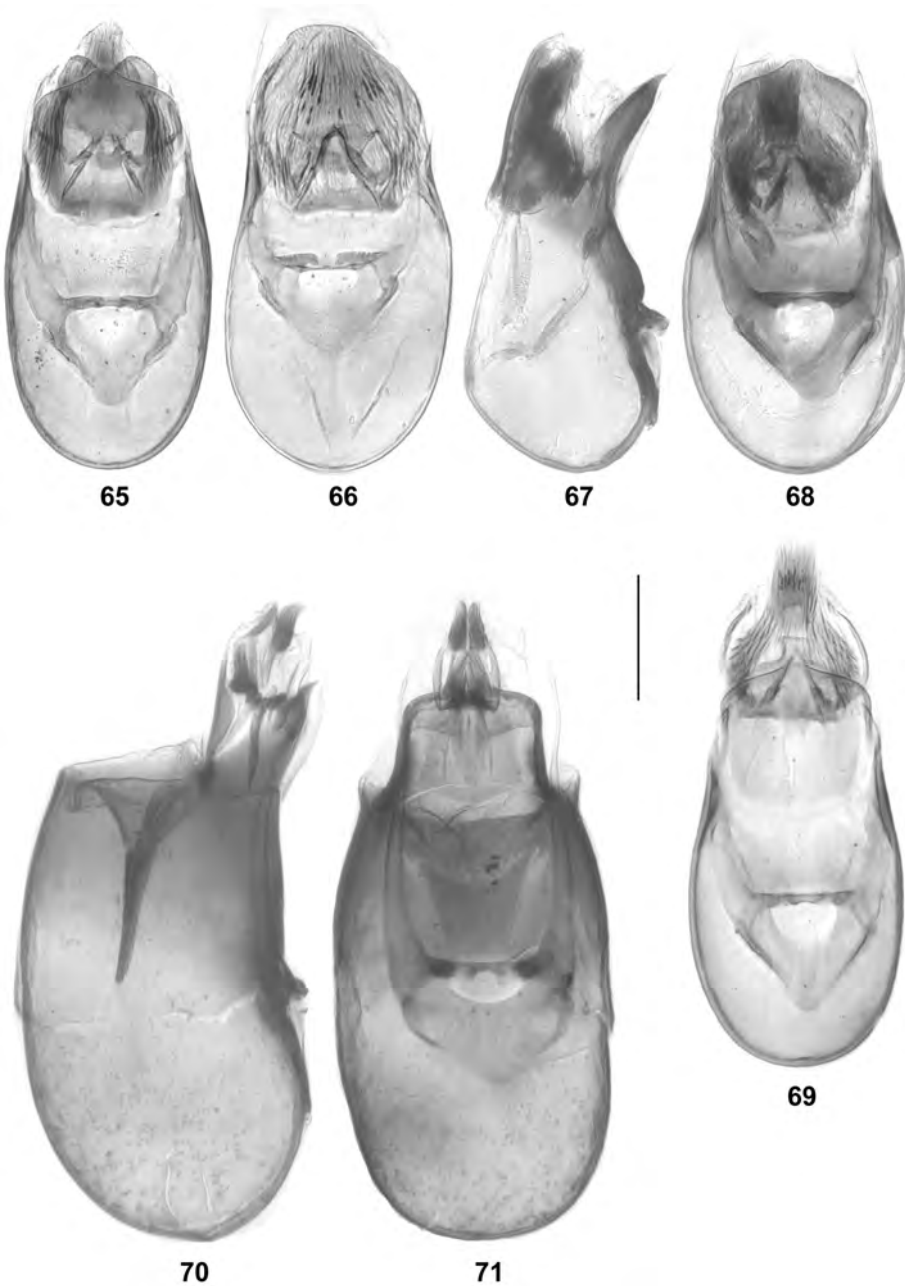
Figs 34-45: *Cephennium validum* (34-36; 35-36: based on Besuchet (unpubl.)), *C. conector* (37), *C. algarvense* (38-40), *C. australe* (41-43), and *C. lompei* (44-45): (34-35, 37-45) aedeagus in lateral and in ventral view; (36) internal structures of aedeagus in ventral view. Scale bars: 34-35, 37-45: 0.1 mm; 36: 0.02 mm.



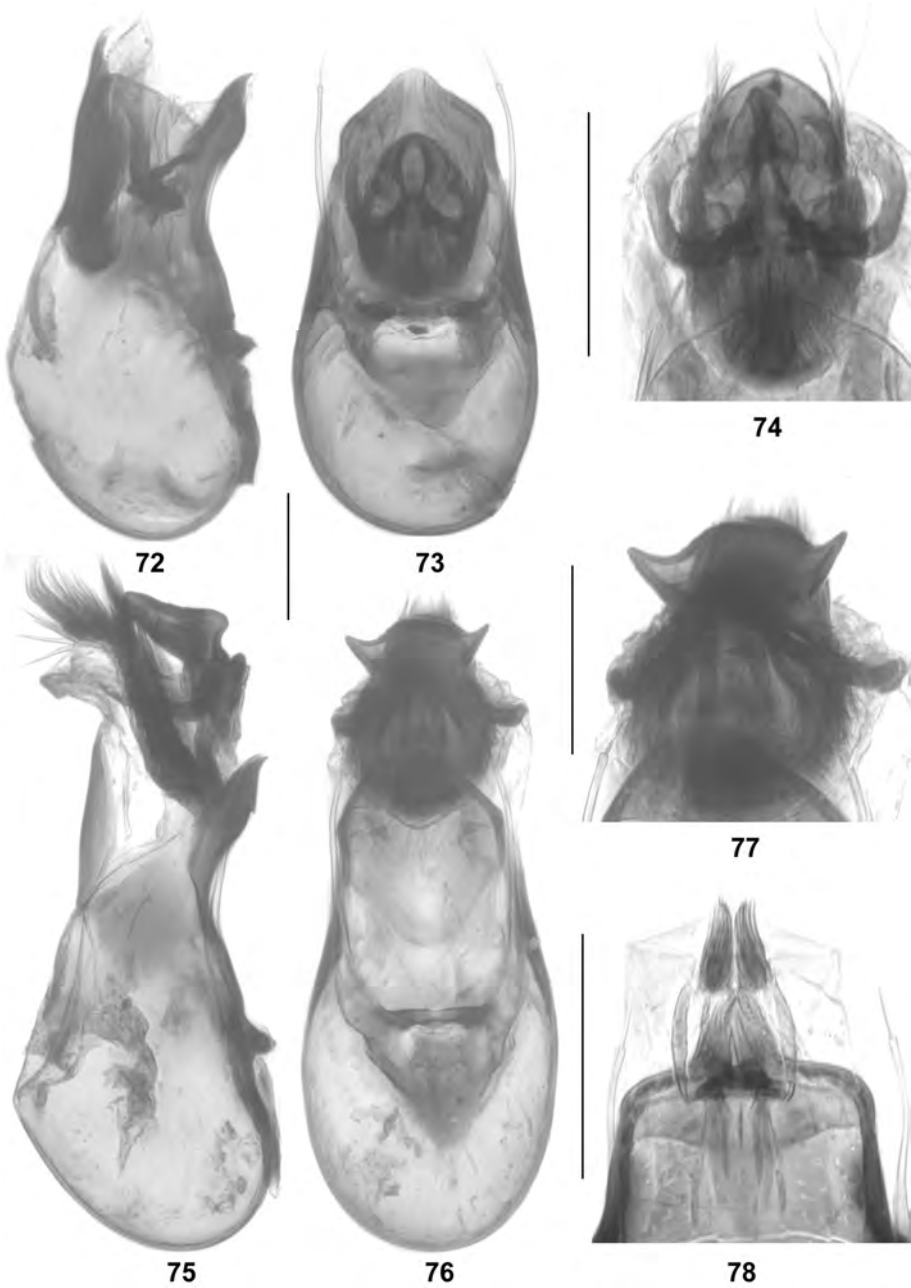
Figs 46-58: *Cephennium catalanicum* (46-47), *C. filabresicum* (48), *C. espunae* (49), *C. tensum* (50), *C. andujari* (51), *C. tenuissimum* (52-53), *C. tensum* (54-56; 56: *C. p. algeciranum*), and *C. ibericum* (57-58): (46, 48-54, 57) aedeagus in lateral and in dorsal view; (47, 55-56, 58) internal structures of aedeagus. Scale bar: 0.1 mm; 47, 55-56, 58: without scale. 46-47, 54-58: based on Besuchet (unpubl.).



Figs 59-64: *Cephennium alacantae* from Sierra de Bernia (59-61) and Sierra de Aitana (62-64): (59-64) aedeagus in lateral and in ventral view. Scale bar: 0.1 mm.



Figs 65-71: *Cephennium cujonicum* (65), *C. verrens* (66), *C. segurae* (67-69), and *C. malagae* (70-71): (65-71) aedeagus in lateral and in ventral view. Scale bars: 65-71: 0.1 mm.



Figs 72-78: *Cephennium nevadæ* (72-74), *C. carzolaæ* (75-77), and *C. malagæ* (78): (72-73, 75-76) aedeagus in lateral and in ventral view; (74, 77-78) internal structures of aedeagus in ventral view. Scale bars: 0.1 mm.

This species shares the characters of the preceding representatives of the *C. validum* group, except that the body is more slender and slightly less convex in cross-section (Fig. 5). The aedeagus is illustrated in Figs 41-43. For additional details regarding external characters see the description of the externally practically identical *C. lompei* below.

Cephennium australe is widespread in Madeira proper and has also been found in one locality in Porto Santo (see records above). The specimens collected by the first author were sifted from deep litter in laurisilva and old stands of *Erica arborea*. The altitudes range from 400 to 1600 m.

***Cephennium lompei* nov.sp.** (Figs 6, 44-45)

Type material: Holotype ♂: "N32°46'56 W016°54'08, Portugal Madeira, Pico das Pedras-Queimada, Lompe 17.2.2017 / Holotypus ♂ *Cephennium lompei* sp. n. det. V. Assing 2020" (cAss). Paratype ♂: same data as holotype (cAss).

Etymology: This species is dedicated to Arved Lompe (Nienburg), who collected the type material.

Description: Small species; body length 1.0 mm. Habitus slender (Fig. 6). Head and pronotum reddish-brown; elytra dark-brown.

Eyes composed of approximately eight ommatidia. Antennae slender, 0.45 mm long; antennomeres VI and VIII weakly transverse, IX and X barely 1.5 times as broad as long.

Pronotum approximately 1.15 times as broad as long, with dense and fine, but distinct punctation.

Elytra slender; humeral carinae fine and short, approximately as long as the combined length of the basal three antennomeres; punctation dense and distinct.

♂: protibia moderately curved and somewhat excavate subapically; metaventrite distinctly impressed; aedeagus (Figs 44-45) 0.30-0.32 mm long and slender; ventral process apically of distinctive shape in ventral view; internal structures minute; parameres parameres long, stout, and straight, apically not reaching apex of median lobe and with moderately long apical seta.

Comparative notes: In external and the male secondary sexual characters, *C. lompei* is practically identical to *C. australe*. It is, however, easily distinguished from that species by a much longer (*C. australe*: aedeagus approximately 0.23 mm long) and apically differently shaped aedeagus, both in lateral and in ventral view. Both *C. lompei* and *C. australe* differ from the representatives of the *C. validum* group from the Iberian mainland by a much more slender habitus alone.

Distribution and natural history: The type locality is situated in the north of Madeira proper, to the northeast of Pico Ruivo. The specimens were sifted together with *C. australe*.

***Cephennium asturicum* group**

This lineage includes only one Iberian species, *C. asturicum*, characterized by a robust and strongly convex (cross-section) body with a large and strongly transverse pronotum, eyes composed of 4-5 ommatidia, elytra with very fine supra-humeral carinae, unmodified male protibiae, and an aedeagus with a long ventral process, distinct internal structures, and short thin parameres with a very long apical seta.

Cephennium asturicum REITTER, 1880 (Figs 7, 31-33, Map 3)

Material examined: **SPAIN:** País Vasco: 1♂, Sierra de Cantabria, ca. 30 km S Vitoria, Puerto de Herrera, 42°36'19"N, 02°40'24"W, 1000 m, beech forest, litter and moss between rocks sifted, 14.X.2003, leg. Assing (cAss). La Rioja: 4♀♀, Sierra de la Demanda, S El Rio, 2.VIII.1971 (cAss). Cantabria: 18 exs., Picos de Europa, Valle de Salvoron, Espinama, 27.VII.1972, leg. Meybohm (cAss); 3 exs., same data, but 30.VII.1972 (cAss); 5 exs., Picos de Europa, Espinama to Puerto de Aliva, 29.VII.1972, leg. Meybohm (cAss); 20 exs., Santander, Ruente env., Monte Aa, 1.VIII.1972, leg. Meybohm (cAss); 1 ex., Reinosa env., Tres Mares-Comon, 2000-2150 m, 4.VI.1991, leg. Wunderle (cAss). Asturias: 3 exs., Oviedo, Playa de la Franca, 31.VII.1972, leg. Meybohm (cAss); 2 exs., Picos de Europa, Covadonga, Refugio Vegarredonda, 1650 m, 7.VI.1991, leg. Wunderle (cAss); 3 exs., Picos de Europa, Lago de la Ercina, Vega Bricial, 43°15'N, 4°58'W, 5.VI.1998, leg. Lompe (cAss); 12 exs., Sierra de Rañadoiro, Puerto del Connio, 43°02'33"N, 6°43'08"W, 1300 m, N-slope, mixed forest on scree with birch, oak, *Sorbus*, and with *Luzula* and *Erica* undergrowth, 25.VI.2002, leg. Assing (cAss). Castilla y León: 1 ex., Picos de Europa, 40 km WNW Aguilar de Campoo, pass W Cervera, 42°53'52"N, 04°38'54"W, 1550 m, N-slope with beech and *Sarothamnus*, 13.VII.2003, leg. Assing (cAss); 7 exs., Caboalles, leg. Paganetti (cAss). Galicia: 6 exs., Sierra de Ancares, ENE Degrada, 42°50'12"N, 6°54'07"W, 970 m, mixed deciduous forest with very old *Castanea sativa*, 14.VII.2004, leg. Assing (cAss); 1 ex., Sierra de Ancares, ESE Degrada, 42°48'53"N, 6°53'38"W, 1300 m, moist *Ilex* forest with ferns, 10.VII.2004, leg. Assing (cAss).

Material examined by C. Besuchet (unpubl.): **SPAIN:** Navarra: 5 exs., Alsasua, leg. Daniel (ZSM). Cantabria: 2 exs., Reinosa (BMNH); 41 exs., Santander, Ruente env., Monte Aa, leg. Franz (MHNG, NHMW); 7 exs., Espinama env., Corisco, leg. Franz (MHNG, NHMW); 11 exs., Espinama env., leg. Franz (NHMW); 3 exs., Santander, Mte Saja near Saja, leg. Franz (NHMW); 3 exs., Santander, Puerto del Escudo, leg. Franz (NHMW). Asturias: 21 exs., Bezares env., Mte. Reres [?], 800-900 m, leg. Franz (MHNG, NHMW); 11 exs., Cangas del Narcea, "Bosque d. Munielles [?]", leg. Franz (NHMW); 2 exs., Picos de Europa, Peña Santa env., leg. Franz (NHMW); 4 exs., Monte Montera, 800 m, leg. Franz (NHMW); 5 exs., Covadonga, leg. Franz (MHNG, NHMW); 2 exs., Puerto de Pajares, leg. Franz, Kricheldorf (HNHM, NHMW); 9 exs. [two labelled as lecto- and paralectotype], locality not specified, leg. Getschmann (HNHM, MCSNG, MNHNP, NHMW); 1 ex., locality not specified (coll. Stockmann). Castilla y León: 113 exs., Caboalles, leg. Paganetti, Schatzmayr (FMNH, HNHM, MHNG, MNB, NHMW, TLMF, coll. Mateu, coll. Perrot, and other collections); 3 exs., Burgos, Puente de Carrales, leg. Franz (NHMW, cAss); 5 exs., Ponferrada, leg. Paganetti (MHNG, MNB). Galicia: 21 exs., Lugo, Valle de Lozera, leg. Franz (MHNG, NHMW); 13 exs., Lugo, Sierra de Ancares, leg. Franz (MHNG, NHMW). Locality ambiguous: 2 exs., Peña Labra, leg. Daniel (ZSM).

Diagnosis: Body length 1.1-1.3 mm. Body broad and strongly convex in cross-section (Fig. 7). Pronotum large in relation to elytra. Colouration usually reddish to reddish-brown.

Eyes composed of approximately 4-5 ommatidia. Pronotum approximately 1.25 times as broad as long and as broad as elytra; punctation extremely fine, barely noticeable. Elytra broad and relatively short; anterior impressions transverse and tomentose; supra-humeral carinae very fine; punctation more distinct than that of pronotum.

♂: protibia unmodified; mesotibia flattened and with dense long pubescence on inner face in apical third; metatibia weakly flattened on inner face in apical portion; aedeagus (Figs 31-33) approximately 0.3 mm long; ventral process and internal structures of distinctive shapes; parameres relatively short, thin, straight, and with very long apical seta.

Distribution and natural history: This species is rather widespread in Northwest Spain, from Galicia in the west to Navarra and La Rioja in the east (Map 3). The altitudes range from 800 to more than 2000 m.

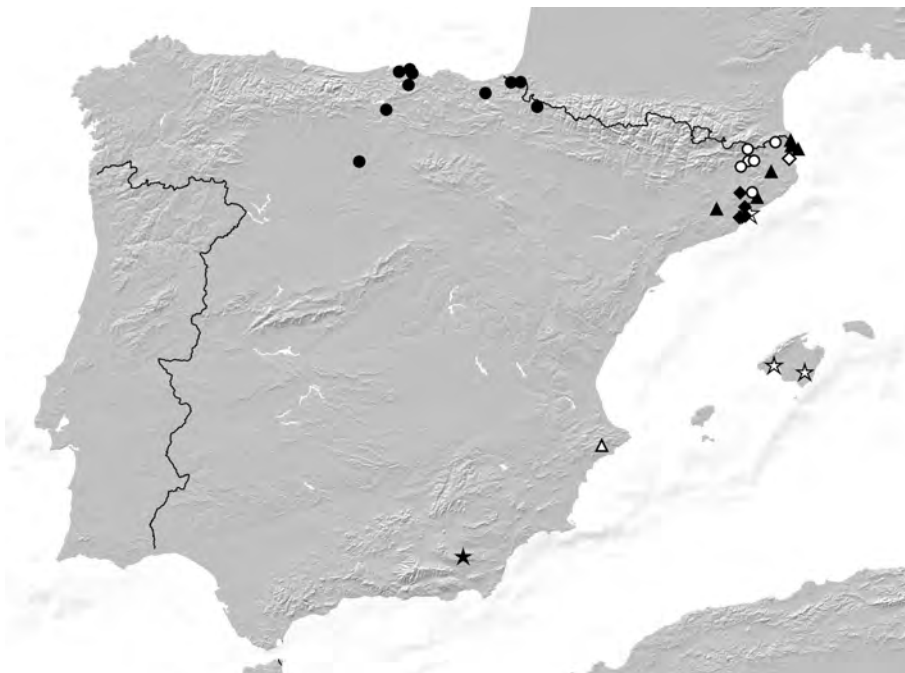
Cephennium caecum group

This lineage includes nine species recorded from the Iberian Peninsula characterized by a small, relatively slender, and weakly convex (cross-section) body of pale-reddish to reddish colouration, eyes completely reduced or with one or two ommatidia, unmodified male protibiae, and a robust aedeagus with distinct internal structures and slender parameres with a short apical seta. Species of this group have been attributed to the subgenus *Geodytes*.

Cephennium minutissimum (SAULCY, 1864) (Map 2)

Material from Spain examined by C. Besuchet (unpubl.): **SPAIN:** C a t a l u ñ a : 1♂, Barcelona, Vilasar ("Mus. Barcelone"). B a l e a r e s : 1♂, 1♀, Mallorca, Felanitx, leg. Zariquiey ("Mus. Barcelone", coll. Normand); 2♀♀, Mallorca, Beniatzar, leg. Buñola ("Mus. Barcelone", coll. Palm); 1♀, Mallorca, Son Puigdorfil (MHNG).

According to SCHÜLKE & SMETANA (2015), this widespread anophthalmous species has been reported from Switzerland, Italy, France, Spain, and Algeria. For numerous records and illustrations of the male sexual characters see OROUSSET (2018). The distribution in Spain based on Besuchet (unpubl.) is illustrated in Map 2.



Map 2: Distributions of *Cephennium* spp. of the *C. caecum* and *C. tensum* groups in the Iberian Peninsula and the Balears, based on Besuchet (unpubl.), OROUSSET (2018), and examined material: *C. atomarium* (black circles); *C. coiffaiti* (white circles); *C. caecum* (black triangles); *C. hypogaenum* (white diamond); *C. minutissimum* (white stars); *C. catalonicum* (black diamonds); *C. filabresicum* (black star); *C. andujari* (white triangle).

***Cephennium caecum* (SAULCY, 1864) (Map 2)**

Material examined: FRANCE: 1♂, Pyrénées-Orientales, Lahorre, 4.VII.1976, leg. Meybohm (cAss).

Material from Spain examined by C. Besuchet (unpubl.): SPAIN: C a t a l u ñ a : 3♂♂, 10♀♀, Gerona, Cadaques, leg. Besuchet, Zariquiey (MHNG, coll. Español); 2♂♂, 1♀, Gerona, Llança, leg. Coiffait (MNHNP); 3♂♂, Gerona, Port Bou, leg. Coiffait (MHNG, MNHNP); 1♂, Barcelona, Gualba, Mas de Xaxars ("Mus. Barcelone"); 1♂, Barcelona, Montserrat, leg. Franz (MHNG); 1♂, Barcelona, Sant Medir, leg. Comellini (MHNG).

The known distribution of this anophthalmous species is confined to the Pyrénées-Orientales and Aude (Southwest France) and to several localities in Cataluña, Northeast Spain (Map 2). For numerous records and illustrations of the male sexual characters see OROUSSET (2018).

***Cephennium atomarium* SAULCY, 1870 (Map 2)**

Material examined: SPAIN: 1♂, Navarra, Pamplona, Orbaizeta env., 4.VIII.1971 (cAss).

Material from Spain examined by C. Besuchet (unpubl.): SPAIN: C a n t a b r i a : 17♂♂, 9♀♀, Santander, Ruente, Monte Aa, leg. Franz (MHNG, NHMW); 2♂♂, Santander, W Beranga, Jesus de Montes, leg. Franz (NHMW); 5♂♂, 6♀♀, Santander, Santoña, leg. Besuchet (MHNG); 34 exs., Santander, Ramales-Ranestosa, leg. Besuchet (MHNG); 13 exs., Santander, Lliendo env., Mte. de Candina, leg. Besuchet (MHNG); 1♂, San Sebastian, Rio de Deva [Dera?], leg. Besuchet (MHNG). C a s t i l l a y L e ó n : 2♂♂, Burgos, Puerto de Carrales, leg. Franz (MHNG, NHMW). P a í s V a s c o : 1♂, Tolosa env., Mte. Alzo, leg. Franz (NHMW).

This anophthalmous species is remarkably widespread in the French Pyrenees and in North Spain, where it has been recorded from Cantabria across País Vasco and Castilla y León to Navarra (FRANZ 1963, OROUSSET 2018; Besuchet unpubl.) (Map 2). For illustrations of the male sexual characters and numerous records, including two from Navarra, see OROUSSET (2018).

***Cephennium hypogaeum* NORMAND, 1906 (Map 2)**

Material examined by C. Besuchet (unpubl.): SPAIN: C a t a l u ñ a : 1♂, Sant Pere Pescador, XII.1953, leg. Zariquiey ("Mus. Barcelone").

This anophthalmous species is known from few localities in Pyrénées-Orientales (France) and Gerona (Spain) (Map 2). For illustrations of the aedeagus see OROUSSET (2018).

***Cephennium catalanicum* DODERO, 1918 (Figs 46-47, Map 2)**

Material examined by C. Besuchet (unpubl.): SPAIN: C a t a l u ñ a : 1♂ [syntype], Alella, leg. Zariquiey (coll. Doderó); 1♂ [syntype], Moncada, leg. Zariquiey (MCSNG); 1♂, Barcelona, Centelles, Mas de Xaxars (coll. Binaghi); 1♂, 1♀, N Barcelona, Granollers env., La Roca, leg. Franz (NHMW); 1♂, Prov. Barcelona, Cibidalo [?], leg. Coiffait (MHNG).

The original description is based on two males from "Alella et Moncada" (DODERO 1918). This species has been reported only from Cataluña, Northeast Spain. The aedeagus is illustrated in Figs 46-47, based on Besuchet (unpubl.).

***Cephennium coiffaiti* OROUSSET, 2018 (Map 2)**

Material from Spain examined by C. Besuchet (unpubl.), identified as *C. coiffaiti* i.l.: **SPAIN:** C a t a l u ñ a : 2♂♂, 2♀♀, Olot env., Coll de Cannes, 1000 m, leg. Franz (MHNG, NHMW); 1♂, 1♀, Olot env., Coll de Cannes, leg. Besuchet (MHNG); 1♂, Olot env., Coll de San Juan, leg. Franz (MHNG); 1♂, 1♀, Gerona, Mollo, leg. Coiffait (MNHN); 1♂, Sierra de Montseny, 1500 m, leg. Curti (MHNG); 2♂♂, 1♀, Gerona, La Junquera, leg. Comellini (MHNG); 1♂, Barcelona, Santa Maria de Besora, leg. Coiffait (MHNG).

This anophthalmous species is distributed in Southwest France (eastern Pyrenees and adjacent regions) and in Northeast Spain (Cataluña) (Map 2). For illustrations of the male sexual characters and numerous records from France see OROUSSET (2018).

***Cephennium gladiator* JALOSZYŃSKI & STRUYVE, 2016**

M a t e r i a l e x a m i n e d : **SPAIN:** 1♂, 1♀, Galicia, Sierra de Ancares, Degrada, Monte da Varg, 29.V.1998, leg. Lompe (cAss).

The original description of this recently described, subanophthalmous species (eyes composed of a single ommatidium without pigmentation) is based on numerous specimens collected by soil-washing in several localities in Galicia. For a distribution map and illustrations of external and the male primary and secondary sexual characters see JALOSZYŃSKI & STRUYVE (2016).

***Cephennium filabresicum* nov.sp. (Figs 8, 21, 48, Map 2)**

T y p e m a t e r i a l : **Holotype** ♂: "E - Andalucía [15], Sierra de los Filabres, S Serón, 1800 m, grassland, 37°15'44N 02°30'30W, 19.III.2008, V. Assing / Holotypus ♂ *Cephennium filabresicum* sp. n. det. V. Assing 2020" (cAss).

E t y m o l o g y : This specific epithet is an adjective derived from the name of the mountain range where the type locality is situated.

D e s c r i p t i o n : Body length 1.1 mm. Habitus (Fig. 8) slender; body weakly convex. Colouration yellowish-red.

Eyes reduced to two ommatidia without pigmentation. Antenna slender, 0.53 mm long; antennomeres VI and VIII moderately transverse, VII approximately as broad as long, IX and X approximately 1.5 times as broad as long, and XI nearly twice as long as broad.

Pronotum 1.18 times as broad as long. Punctuation dense and extremely fine, barely noticeable; interstices without microsculpture.

Elytra slender, each anteriorly with a large transversely oval tomentose impression and with a fine and long supra-humeral carina; punctuation very fine and dense.

♂: protibia unmodified; meso- and metatibiae somewhat flattened on inner face in apical portions; aedeagus (Fig. 48) large in relation to body size, 0.4 mm long; ventral process apically membranous and convex in ventral view; internal structures rather weakly sclerotized and of distinctive shapes; parameres fine and relatively short, far from reaching apex of median lobe, and apically with a moderately short seta.

C o m p a r a t i v e n o t e s : This species is characterized among other species of similarly small body size, slender habitus, and pale colouration by slender antennae, eyes composed of two ommatidia, unmodified male protibiae, and by the distinctive morphology of the aedeagus.

Distribution and natural history: The type locality (Fig. 21) is situated in Sierra de Filabresica, Andalucía, South Spain. The holotype was sifted from grass roots in a stony grassland with trees and bushes at an altitude of 1800 m.

***Cephennium espunae* nov.sp.** (Figs 9, 22, 49, Map 1)

Type material: Holotype ♂: "E - Murcia [13], Sierra de Espuña, Prado Mayor, pasture, 1140 m, 37°53'11N, 01°33'53W, 29.III.2007, V. Assing / Holotypus ♂ *Cephennium espunae* sp. n. det. V. Assing 2020" (cAss).

Etymology: The specific epithet is the genitive of Espuña, the name of the mountain where the species was discovered and where it may be endemic.

Description: Body length 1.0 mm. Habitus as in Fig. 9. Eye rudiments composed of two (?) ommatidia without pigmentation. External and male secondary sexual characters as in *C. filabresicum*, distinguished only by the male primary sexual characters.

♂: aedeagus (Fig. 49) broad, 0.24 mm long; ventral process apically membranous and of quadrangular shape; internal structures small and weakly sclerotized; parameres fine and relatively short, not reaching apex of median lobe, and apically with a moderately short seta.

Comparative notes: *Cephennium espunae* is distinguished from the externally practically identical and geographically close *C. filabresicum* by a much smaller and differently shaped aedeagus.

Distribution and natural history: The type locality (Fig. 22) is situated in Sierra de Espuña, Murcia, South Spain (Map 1). The holotype was sifted from grass roots and moss in a calcareous stony grassland at an altitude of 1140 m.

***Cephennium tensum* group**

This lineage includes two Iberian species characterized by a small and weakly convex (cross-section) body of pale-reddish to reddish colouration, slender habitus, eyes without ommatidia, apically weakly curved male protibiae, and a conspicuously slender aedeagus with indistinct internal structures and with very long and slender parameres with a very long apical seta.

***Cephennium tensum* nov.sp.** (Figs 10, 50, Map 1)

Type material: Holotype ♂: "E – Alicante [08], 380 m, Sierra de Aitana, Sella stream valley, floated, 38°36'37N, 00°15'25W, 28.III.2007, C. Andújar / Holotypus ♂ *Cephennium tensum* sp. n. det. V. Assing 2020" (cAss). **Paratypes:** 2♀♀: same data as holotype (cAss); 1♂ [strongly damaged, but aedeagus intact], 1♀: "E – Alicante, S. d'Aitana, Fuente de Alcantara 380 m, 38°36'37N, 00°15'25W, leg. Andujar 28.3.2007" (cAss).

Etymology: The specific epithet is the past participle of the Latin verb *tendere* (to stretch) and alludes to the conspicuously long aedeagus.

Description: Body length 1.0-1.1 mm. Habitus (Fig. 10) slender, body rather weakly convex in cross-section. Colouration yellowish-red.

Eyes rudimentary, transparent, without defined ommatidia. Antenna with antennomeres VI and VIII small and strongly transverse, IX and X nearly twice as broad as long, and XI barely 1.5 times as long as broad.

Pronotum approximately 1.15 times as broad as long and weakly convex in cross-section; punctuation dense and extremely fine, barely noticeable; interstices without microsculpture.

Elytra slender and weakly convex in cross-section, broader than pronotum, anteriorly each with a rather large, subcircular, tomentose impression; humeral carina moderately distinct, approximately as long as the combined length of the basal four antennomeres; punctuation extremely fine, barely noticeable; interstices without microsculpture.

♂: protibia weakly curved apically, not distinctly excavate or flattened on inner face; meso- and metatibiae weakly flattened on inner face of apical portion; aedeagus (Fig. 50) of conspicuous shape, very long in relation to body size, approximately 0.5 mm long; ventral process narrow from base to apex and with nearly parallel lateral margins, apically weakly concave; internal structures indistinct; parameres long, slender, straight, and with conspicuously long apical seta.

Comparative notes: *Cephennium tensum* is readily distinguished from other anophthalmous congeners by the highly distinctive shape of the aedeagus.

Distribution and natural history: The type locality is situated in Sierra de Aitana, Alicante, Southeast Spain (Map 1). The specimens were collected by washing sandy soil from a slope with vegetation of grasses and herbs in a stream valley at an altitude of 380 m.

***Cephennium andujari* nov.sp.** (Fig. 51, Map 2)

Type material: Holotype ♂: "E – Alicante, S. d'Aitana, 8 km N Sella 1390 m, 38°39'09N, 00°15'02W, leg. Andujar 28.3.2007 / Holotypus ♂ *Cephennium andujari* sp. n. det. V. Assing 2020" (cAss).

Etymology: This species is dedicated to Carmelo Andújar (La Laguna), who collected not only the holotype of this species during a joint field trip with the first author, but also the type material of two other species described in the present paper.

Description: Body length 1.1 mm. Habitus even more slender than that of *C. tensum*. Pronotum approximately 1.1 times as broad as long. Other external and male secondary sexual characters as in *C. tensum*.

♂: aedeagus (Fig. 51) slender, 0.36 mm long; ventral process narrow, apically weakly convex; internal structures small and weakly sclerotized; parameres long, slender, straight, and with conspicuously long apical seta.

Comparative notes: This species is distinguished from the similar, evidently closely related, and geographically close *C. tensum* by a more slender habitus and a significantly smaller and differently shaped aedeagus.

Distribution and natural history: The type locality is situated in Sierra de Aitana, Alicante, East Spain (Map 2). The holotype was collected by soil-washing in a stony pasture at an altitude of 1390 m.

***Cephennium tenuissimum* group**

This group currently includes a single species and is characterized above all by minute body size, a conspicuously slender habitus (pronotum approximately as long as broad), strongly incrassate antennae (antennomeres III–X all transverse), the complete absence of eyes (no rudiments visible), and by the morphology of the aedeagus.

***Cephennium tenuissimum* nov.sp.** (Figs 11, 22, 52-53, Map 1)

Type material: Holotype ♂: "E – Murcia, S. de Espuna, Prado Mayor 1100 m, 37°53'18N, 01°33'53W, leg. Andujar 29.3.2007 / Holotypus ♂ *Cephennium tenuissimum* sp. n. det. V. Assing 2020" (cAss). Paratypes: 1♂, 6♀♀: same data as holotype (cAss).

Etymology: The specific epithet is the superlative of the Latin adjective *tenuis* (thin, slim) and alludes to the conspicuously slender habitus.

Description: Minute species; body length 0.8-0.9 mm. Habitus (Fig. 11) conspicuously slender, body rather weakly convex in cross-section. Colouration reddish-yellow.

Eyes completely reduced, without so much as rudiments left. Antenna strongly incrassate; antennomeres III-X transverse, V-VII approximately twice as broad as long, and VIII-X more than twice as broad as long.

Pronotum very slender, approximately as long as broad, broadest near anterior angles, weakly convex in cross-section, with indistinct median sulcus in posterior half; punctuation moderately dense and fine, barely noticeable; interstices without microsculpture.

Elytra slender and weakly convex in cross-section, broader than pronotum, anteriorly each with a tomentose impression; supra-humeral carina moderately distinct, approximately as long as the combined length of the basal four to five antennomeres; punctuation fine; interstices without microsculpture.

♂: tibiae without distinct modifications; metaventricle shallowly impressed; aedeagus (Figs 52-53) broad, 0.23 mm long; ventral process of triangular shape and apically acute; internal structures very small; parameres basally broad, gradually tapering apicad, apically moderately thin and with short apical seta, reaching apex of median lobe.

Comparative notes: *Cephennium tenuissimum* is readily distinguished from all other Iberian congeners by its conspicuously slender habitus, strongly incrassate antennae, the complete absence of eyes, and by the shape of the aedeagus.

Distribution and natural history: The type locality (Fig. 22) is identical to that of *C. espunae* (Map 1). Unlike that species, however, the type material of *C. tenuissimum* was not sifted, but exclusively collected by soil-washing.

Species without group assignment

The following species were not examined and are consequently not assigned to any of the groups proposed above.

***Cephennium pygmaeum* SAULCY, 1870** (Figs 54-56)

Material examined by C. Besuchet (unpubl.): *C. pygmaeum pygmaeum*: **SPAIN**: 9♂♂, 9♀♀, Andalucía, Sevilla, Carmona env., "Hof Alamaja", leg. Franz (MHNG, NHMW); 2♂♂, 2♀♀, Sevilla env., "Cortijo de Maribanz", leg. Franz (NHMW); 1♂, Córdoba (MNHN); 1♀, Andalucía, Sierra de Cazorla, leg. Besuchet (MHNG).

C. pygmaeum algerianum: **SPAIN**: 5♂♂, 6♀♀, Andalucía, Sevilla, Cinca de Pino, leg. Franz (MHNG, NHMW); 5♂♂, 6♀♀, Andalucía, Sevilla, Los Palacios, leg. Besuchet (MHNG); 1♀, Andalucía, Algeciras env., La Roca, leg. Franz (NHMW); 1♂, 1♀, Algeciras, leg. Fran, Simon (MNHN, NHMW); 1♂, 3♀♀, Andalucía, Málaga, Montes de Málaga, leg. Besuchet (MHNG),.

C. pygmaeum striolatum: **PORTUGAL**: 1♂, Serra do Gerês (MNHN). **SPAIN**: 2♀♀, Andalucía, Sevilla, Venta del Alto, leg. Besuchet (MHNG); 2♂♂, 1♀, "Cordone" (MHNG).

According to the original description of *C. pygmaeum*, which is based on an unspecified number of syntypes from "Sierra de Cordoba", this species is blind, of reddish colouration, and 0.5 mm long (SAULCY 1870). REITTER (1882) described *C. algeciranum* based on an unspecified number of type specimens from "Algeciras". REITTER (1884) described *C. striolatum* from "Andalusien". *Cephennium algeciranum* and *C. striolatum* were subsequently regarded as subspecies of *C. pygmaeum* (VÍT & BESUCHET 2004). Besuchet (unpubl.) lists material of the three subspecies, partly with doubtful or unidentified locality data, but provided (practically identical) illustrations only for *C. pygmaeum* and *C. algeciranum* (Figs 54-56). This suggests that the aedeagi of the three taxa do not differ. Moreover, the localities of the material examined by Besuchet (see above) do not reveal clear distribution patterns. In consequence, the status of both *C. algeciranum* and *C. striolatus* appears highly doubtful.

***Cephennium ibericum* CROISSANDEAU, 1891 (Figs 57-58)**

Material examined by C. Besuchet (unpubl.): **SPAIN**: 1♂ [syntype], locality not specified (MNHNP); 4♂♂, 4♀♀: Granada, Alfácar, leg. Breit, etc. (MHNG, NHMW); 2♂♂, Sierra Nevada, 1600 m, leg. Besuchet (MHNG); 1♀: "sp. no 677", leg. Franz (NHMW).

The original description is based on an unspecified number of syntypes (probably a single male) from "Espagne, sans localité précise" (CROISSANDEAU 1891). The material examined by Besuchet (unpubl.) suggests that this species is distributed in Sierra Nevada. The aedeagus, which is illustrated in Figs 57-58, based on Besuchet (unpubl.), suggests that this species is closely allied to *C. filabresicum*.

***Cephennium lusitanum* CASTELLINI, 2011**

The original description is based on 17 type specimens from two localities in Porte de Mós, Leira, Portugal. For illustrations of the aedeagus, which is characterized by a pair of pronounced spines in the internal sac, see CASTELLINI (2011).

***Cephennium scutulatum* CASTELLINI, 2011**

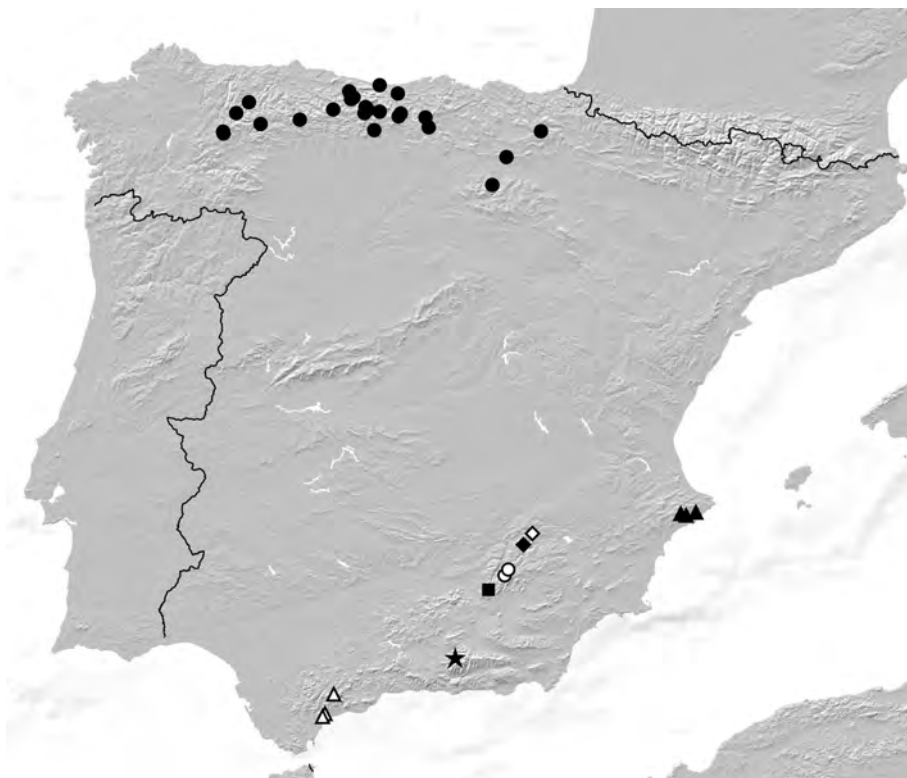
This species was described based on four males from a locality in Golega, Santarém, Portugal. For illustrations of the aedeagus see CASTELLINI (2011).

***Cephennium portomosense* CASTELLINI, 2011**

The original description is based on 14 type specimens from two localities in Porte de Mós, Leira, Portugal. The illustrations of the aedeagus in CASTELLINI (2011) suggest that the specimens from these localities are not conspecific.

***Cephennium mycetoides* WOLLASTON, 1871**

According to the original description (WOLLASTON 1871), which is based on "a single example" from "near the summit of the Pico Gordo", this species is larger and more slender than *C. thoracicum*. Subsequent records are unknown. According to Besuchet (unpubl.), the holotype is a female.



Map 3: Distributions of *Cephennium asturicum* (black circles; based on Besuchet (unpubl.) and examined material) and of species of the subgenus *Macroderus* in the Iberian Peninsula: *C. alacantae* (black triangles); *C. cujonicum* (white diamond); *C. segurae* (black diamond); *C. verrens* (white circles); *C. cazorlae* (black square); *C. nevadae* (black star); *C. malagae* (white triangles).

Subgenus *Macroderus* CROISSANDEAU, 1894

Macroderus previously included a single species, the type species *C. divergens* REITTER, 1884 from Aragón (Northeast Spain).

Species of this well-defined subgenus are characterized by the following character combination: body broad and robust, strongly convex (cross-section); colouration reddish to reddish-brown; antennae slender, antennomeres VI and VIII not transverse, VII only indistinctly longer and larger than VI and VIII at most, and IX and X weakly transverse, less than 1.5 times as broad as long; eyes composed of approximately five to seven large ommatidia; pronotum strongly transverse, at least 1.25 times as broad as long, very shiny; punctuation sparse and extremely fine, barely noticeable even at high magnification (100 x); pubescence long and suberect to depressed; elytra broad, strongly convex in cross-section, anteriorly with a lateral humeral carina only and with a pronounced sulcus originating from the anterior impression; hind wings reduced; metaventricle practically impunctate and very glossy; legs without appreciable sexual dimorphism; all tibiae more or less distinctly clavate, i.e., very narrow in basal half and

distinctly dilated in apical half; male metaventricle more or less distinctly impressed; aedeagus with bulbous capsule, short and often broad ventral ventral process, and with internal structures partly composed of clusters of filaments; parameres thin, reaching apex of median lobe, or nearly so, and with moderately long apical seta.

Several of these characters (shape and punctuation of pronotum; pronotum strongly transverse; elytra with pronounced lateral humeral carina, without supra-humeral carina, and with a pronounced sulcus extending from anterior impression; metaventricle practically impunctate; all tibiae without sexual dimorphism; derived morphology of the aedeagus) are unique in the genus and partly evidently synapomorphic. For this reason, the subgeneric status *Macroderus* is retained for the purpose of the present paper.

***Cephennium (Macroderus) divergens* REITTER, 1884**

The original description of this small species ("1 mm") is based on an unspecified number of syntypes from "Arragonien" (REITTER 1884). According to Claude Besuchet (unpubl.), the unique type specimen is lost ("type unique perdu").

***Cephennium (Macroderus) alacantae* nov.sp. (Figs 12-14, 59-64, Map 3)**

Type material: Holotype ♂: "15.3.95 Spanien, Prov. Alicante, Sierra Bernia 800 m, leg. Meybohm / Holotypus ♂ *Cephennium alacantae* sp. n. det. V. Assing 2020" (cAss). Paratypes: 9♂♂, 3♀♀: same data as holotype (cAss); 8♂♂, 3♀♀: "14.3.78 Spanien, Prov. Alicante, Sierra de Bernia" (cAss); 1♂: same data, but 26.3.78 (cAss); 3♂♂, 2♀♀: same data, but 19.3.78 (cAss); 7♂♂, 1♀: "17.3.94 Spanien, Prov. Alicante, Sierra Aitana, 1300 m, leg. Meybohm" (cAss); 1♂, 1♀ [teneral]: "E Alicante (51) Sierra de Aitana, 1350 m, N38°39'15 W0°15'35, 7.10.2008 leg. Meybohm" (cAss); 2♀♀ [teneral]: "E Alicante (47) Sierra de Aitana, 950 m, N38°38'28 W0°11'04, 7.10.2008 leg. Meybohm" (cAss).

E t y m o l o g y : The specific epithet is the genitive of Alacant, the Valencian name for Alicante, where the species was found and where it is probably endemic.

D e s c r i p t i o n : Body length 1.35-1.55 mm. Body (Fig. 12) robust and strongly convex in cross-section; colouration reddish to brown.

Antennae slender, 0.7-0.8 mm long; antennomeres VI and VIII not transverse, VII only indistinctly longer and larger than VI and VIII at most, and IX and X weakly transverse, less than 1.5 times as broad as long. Eyes composed of approximately five large ommatidia without, or with weak, pigmentation.

Pronotum large, strongly convex in cross-section, 1.3-1.4 times as broad as long, and very glossy; punctuation sparse and extremely fine, barely noticeable even at high magnification (100 x); pubescence long and suberect to depressed; interstices without trace of microsculpture.

Elytra slightly broader than pronotum, strongly convex in cross-section; anteriorly with pronounced lateral humeral carina, without supra-humeral carina; anterior impressions tomentose and of subcircular shape, posteriorly extending into a conspicuous sulcus of approximately the combined length of the basal 4-5 antennomeres (Fig. 14); pubescence similar to that of pronotum. Metaventricle (Fig. 13) practically impunctate and very glossy. Legs without appreciable sexual dimorphism; all tibiae more or less distinctly clavate, i.e., narrow in basal half and distinctly dilated in apical half.

♂: metaventricle distinctly impressed (Fig. 13); aedeagus (Figs 59-64) of robust shape,

0.38-0.44 mm long; median lobe apically convex in ventral view; internal structures distinctive; parameres slender, apically not extending to apex of median lobe, and with moderately long apical seta.

Intraspecific variation: The aedeagus of the males from Sierra de Bernia is constantly larger (0.42-0.44 mm) than that of males from Sierra de Aitana (0.38-0.39 mm). However, in other respects (shape of ventral process, internal structures), the aedeagi are identical (Figs 59-64). Therefore, the size difference is attributed to intra- rather than interspecific variation.

Comparative notes: This species is distinguished from *C. divergens*, the only previously described *Macroderus* species, by significantly larger size alone.

Distribution and natural history: The species was found in two mountains (Sierra de Bernia, Sierra de Aitana) in Alicante, Southeast Spain (Map 3). The altitudes range from 800 to 1350 m. Three females collected in October are teneral.

***Cephennium (Macroderus) kujonicum* nov.sp.** (Figs 15, 23, 65, Map 3)

Type material: Holotype ♂: "E - Castilla-La Mancha, Sierra de Segura, Sierra de Cujón, 1460 m, [2], 38°28'03N 02°20'38W, 15.III.2008, V. Assing / Holotypus ♂ *Cephennium kujonicum* sp. n. det. V. Assing 2020" (cAss). Paratype ♂: same data as holotype (cAss).

Etymology: The specific epithet is an adjective derived from Cujón, the mountain where the species was discovered.

Description: Body length 1.3 mm. Habitus as in Fig. 15. Colouration yellowish-red. Pubescence of pronotum and elytra moderately long and depressed. Eyes composed of approximately five ommatidia. Pronotum 1.3 times as broad as long. Elytra with anterior sulci approximately as long as the combined length of the basal four to five antennomeres. Other external characters as in *C. alacantae*.

♂: metaventrite depressed, not distinctly impressed; aedeagus (Fig. 65) 0.32 mm long; apex of median lobe broadly obtuse in ventral view; internal structures large and distinctive; parameres apically nearly reaching apex of median lobe.

Comparative notes: *Cephennium kujonicum* differs from *C. alacantae* by smaller size, paler colouration, a less robust body, a less transverse pronotum, a depressed (not impressed) male metaventrite, and by the shape and internal structures of the smaller aedeagus.

Distribution and natural history: The type locality is situated in Sierra de Cujón, a mountain in the Sierra de Segura range (Map 3). The specimens were sifted from grass and moss near large calcareous rocks at an altitude of 1460 m (Fig. 23).

***Cephennium (Macroderus) verrens* nov.sp.** (Figs 16, 66, Map 3)

Type material: Holotype ♂: "E - No. 9; Andalucía, Sierra de Segura, 20 km S Pontones, 1830 m, 38°00'41N, 02°44'35W, 9.IV.2003, leg. V. Assing / Holotypus ♂ *Cephennium verrens* sp. n. det. V. Assing 2020" (cAss). Paratypes: 1♂, 1♀: same data as holotype (cAss); 1♂, 1♀: "E - No. 5; Andalucía, Sierra de Segura, 15 km S Pontones, 1580 m, 38°04'23N, 02°41'19W, 7.IV.2003, leg. V. Assing" (Ass).

Etymology: The specific epithet is the present participle of the Latin verb *verrere* (to sweep, to brush) and alludes to the broom-shaped internal structures of the aedeagus.

Description: Body length 1.3-1.4 mm. Habitus as in Fig. 16. Colouration pale-reddish. Pubescence of pronotum and elytra rather short and depressed. Eyes composed of approximately six ommatidia. Pronotum approximately 1.35 times as broad as long. Elytra with anterior sulci approximately as long as the combined length of the basal four antennomeres. Other external characters as in *C. alacantae*.

♂: metaventrite shallowly impressed; aedeagus (Fig. 66) approximately 0.35 mm long; apex of median lobe convex in ventral view; internal structures brush-shaped; parameres apically nearly reaching apex of median lobe.

Comparative notes: *Cephennium verrens* is distinguished from the geographically close *C. cujonicum* and *C. segurae* particularly by a larger aedeagus with an apically convex ventral process and internal structures of different shape.

Distribution and natural history: The species was collected in two localities to the south of Pontones in the Sierra de Segura (Map 3). The specimens were sifted in a north slope near snow at an altitude of 1830 m and found under stones in a grassy valley near a pine forest at an altitude of 1580 m.

***Cephennium (Macroderus) segurae nov.sp.* (Figs 17, 24, 67-69, Map 3)**

Type material: Holotype ♂: "E – Castilla-La Mancha, Sierra de Segura, Calar de Sima, 1430 m, [3], 38°20'36N 02°28'31W, 15.III.2008, V. Assing / Holotypus ♂ *Cephennium segurae* sp. n. det. V. Assing 2020" (cAss). Paratypes: 2♂♂, 3♀♀: same data as holotype (cAss).

Etymology: The specific epithet is the genitive of Segura, the mountain range where the species is probably endemic.

Description: Body length 1.3-1.4 mm. Habitus as in Fig. 17. Colouration reddish. Pubescence of pronotum and elytra moderately long and depressed. Eyes composed of approximately seven ommatidia. Pronotum approximately 1.35 times as broad as long. Elytra with anterior sulci approximately as long as the combined length of the basal four antennomeres. Other external characters as in *C. alacantae*.

♂: metaventrite shallowly impressed; aedeagus (Figs 67-69) 0.32-0.33 mm long; apex of median lobe broadly obtuse in ventral view; internal structures large and distinctive; parameres apically nearly reaching apex of median lobe.

Comparative notes: *Cephennium segurae* differs from the geographically close *C. cujonicum* by slightly larger size, slightly darker colouration, a slightly more transverse pronotum, a shallowly impressed male metaventrite, and by the shape and internal structures of the aedeagus.

Distribution and natural history: The type locality is situated in the western Sierra de Segura range (Map 3). The specimens were sifted from grass, moss, deep litter, and ferns between rocks in a deep limestone canyon with hazelnut at an altitude of 1430 m (Fig. 24).

***Cephennium (Macroderus) nevadae nov.sp.* (Figs 18, 72-74, Map 3)**

Type material: Holotype ♂: "E. Andalusien (GR), Sierra Nevada, Solynieve, 1700-1900 m, 21.III.1994 Assing 6 / Holotypus ♂ *Cephennium nevadae* sp. n. det. V. Assing 2020" (cAss). Paratypes: 3♂♂: same data as holotype (cAss); 2 exs.: "E Andalusia GR Sierra Nevada Str. zur 1700 m, N-Hang, Pinus Junip., 21.03.94 Wunderle leg." (cAss).

Etymology: The specific epithet is the genitive of Nevada, the name of the mountain range where the type locality is situated.

Description: Body length 1.4-1.5 mm. Habitus as in Fig. 18. Colouration pale-reddish. Eyes composed of approximately seven ommatidia. Elytra with anterior sulci approximately as long as the combined length of the basal four to five antennomeres. Other external characters not distinctive.

♂: metaventre very shallowly impressed; aedeagus (Figs 72-74) 0.38-0.39 mm long; apex of ventral process of broadly triangular shape in ventral view; internal structures massive; parameres apically nearly reaching apex of median lobe.

Comparative notes: *Cephennium nevadae* is distinguished from other *Macroderus* species only by the shape and internal structures of the aedeagus.

Distribution and natural history: The type material was found below Sol y Nieve (= Pradollano), Sierra Nevada, Andalucía (Map 3). The specimens were sifted from litter and debris, partly near snow, in a stream valley at an altitude of 1900 m.

***Cephennium (Macroderus) cazorlae* nov.sp.** (Figs 19, 75-77, Map 3)

Cephennium foveolatum BESUCHET i.l.

Type material: Holotype ♂: "E-Andalusia (J), S. da Cazorla 1200 m, 06.10.93 Wunderle / Cazorla, Umg. Gualaquivirquelle [sic], Macchia, Kiefer / Holotypus ♂ *Cephennium cazorlae* sp. n. det. V. Assing 2020" (cAss).

Additional type material examined by C. Besuchet (unpubl.; with type labels "*Cephennium foveolatum*"): 7♂♂, 6♀♀: "Sierra de Cazorla, Besuchet" (MHNG); 1♂, 3♀♀: "Sierra de Cazorla, 1000m, Franz" (NHMW).

Etymology: The specific epithet is the genitive of Cazorla, the name of the mountain where the type locality is situated.

Description: Body length 1.4 mm. Habitus as in Fig. 19. Colouration reddish. Eyes composed of approximately five ommatidia. Elytra with anterior sulci approximately as long as the combined length of the basal three antennomeres. Other external characters not distinctive.

♂: aedeagus (Figs 75-77) 0.40 mm long; apex of ventral process of triangular shape in ventral view; internal structures large; parameres apically nearly reaching apex of median lobe.

Comparative notes: *Cephennium cazorlae* is distinguished from other *Macroderus* species only by the shape and internal structures of the aedeagus.

Distribution and natural history: The type locality is situated near the source of Guadalquivir river in Sierra de Cazorla (Map 3). The holotype was sifted in macchia with pine trees at an altitude of 1200 m.

***Cephennium (Macroderus) malagae* nov.sp.** (Figs 20, 70-71, 78, Map 3)

Type material: Holotype ♂: "E. Andalusien (MA), Sierra de Bermeja, 350-1450 m, 26.III.1994 Assing / Holotypus ♂ *Cephennium malagae* sp. n. det. V. Assing 2020" (cAss). **Paratypes:** 3♂♂, 3♀♀: same data as holotype (cAss); 2 exs.: "E-Andalusia, MA Sierra Bermeja, Puerto de Penas blancas 1200 m, 26.3.94 Wunderle leg." (cAss); 1♂, 2♀♀: "E Andalusien, Sierra Bermeja, Meybohm 18.2.2000 / N36°29' W5°12', Nordhang Pinsapow." (cAss); 1♂, 1♀: "E. Andalusien (MA), Sierra de Palmitera, SO Ronda, 900 m, 24.III.1994 Assing 13" (cAss).

Etymology: The specific epithet is the genitive of Malaga, the name of the

region where this species was collected.

Description: Body length 1.3-1.5 mm. Body (Fig. 20) very broad. Colouration reddish to reddish-brown. Eyes composed of seven ommatidia. Pronotum approximately 1.3 times as broad as long. Elytra with anterior sulci short, approximately as long as the combined length of the basal three antennomeres. Other external characters as in *C. alacantae*.

♂: metaventrite shallowly impressed; aedeagus (Figs 70-71) large, 0.43-0.45 mm long; ventral process of quadrangular shape, in the middle weakly projecting; internal structures as in Fig. 78; parameres apically reaching apex of median lobe (or very nearly so).

Comparative notes: *Cephennium malagae* differs from other representatives of *Macroderus* by a significantly larger aedeagus with a ventral process of quadrangular shape and much smaller and differently shaped internal structures.

Comment: Besuchet (unpubl.) examined material from various localities near Ronda and in the Rif mountains (North Morocco), which he assumed to belong to the same species (working name: *C. kuehnelti* i.l.). Based on his drawings of the aedeagus, at least the specimens from the environs of Ronda may belong to *C. malagae*. Considering the restricted distributions of the Spanish *Macroderus* species, however, it appears rather unlikely that the material from Morocco should belong to *C. malagae*, too.

Distribution and natural history: The species was found in Sierra Bermeja and Sierra de Palmitera (a mountain in the Serrania de Ronda range), Malaga (South Spain: Andalucía) (Map 3). The specimens with labels specifying exact altitudes were collected at 900 and 1200 m, three of them in an *Abies pinsapo* forest.

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Zusammenfassung

Nach Untersuchung von Material der Gattung *Cephennium* MÜLLER & KUNZE, 1822 sowie einer Auswertung von umfangreichen, zuvor unveröffentlichten Aufzeichnungen des kürzlich verstorbenen Claude Besuchet umfasst die *Cephennium*-Fauna der iberischen Halbinsel (südlich der spanischen Grenze mit Frankreich und Andorra) 38 benannte Arten. Auf Madeira ist die Gattung mit drei Arten vertreten; von anderen atlantischen Inseln wurden bislang keine *Cephennium*-Arten nachgewiesen. Die Arten werden acht Artengruppen zugeordnet. Mit drei Ausnahmen (Männchen unbekannt, Typen verschollen oder Identität ungeklärt) werden alle Arten, für die keine Genitalabbildungen in der Literatur verfügbar sind, abgebildet. Siebzehn Arten werden erstmals beschrieben: *C. constrictum* nov.sp. (Spanien: Cataluña: Sierra del Cadi) aus der *C. perispinctum*-Gruppe; *C. validum* nov.sp. (Nordwestspanien, Nordportugal), *C. conlector* nov.sp. (Nordportugal: Serra da Estrela), *C. algarvense* nov.sp. (Südportugal: Algarve) und *C. lompei* nov.sp. (Madeira) aus der *C. validum*-Gruppe; *C. filabresicum* nov.sp. (Spanien: Andalucía:

Sierra de los Filabres) und *C. espunae* nov.sp. (Spanien: Murcia: Sierra de Espuña) aus der *C. caecum*-Gruppe; *C. tensum* nov.sp. (Spanien: Alicante: Sierra de Aitana) und *C. andujari* nov.sp. (Spanien: Alicante: Sierra de Aitana) aus der *C. tensum*-Gruppe; *C. tenuissimum* nov.sp. (Spanien: Murcia: Sierra de Espuña) aus der *C. tenuissimum*-Gruppe; *C. alacantae* nov.sp. (Spanien: Alicante), *C. cujoncum* nov.sp. (Spanien: Castilla-La Mancha: Sierra de Segura), *C. verrens* nov.sp. (Spanien: Andalucía: Sierra de Segura), *C. segurae* nov.sp. (Spanien: Castilla-La Mancha: Sierra de Segura), *C. nevadae* nov.sp. (Spanien: Andalucía: Sierra Nevada), *C. cazorlae* nov.sp. (Spanien: Andalucía: Sierra de Cazorla) und *C. malagae* nov.sp. (Spanien: Andalucía: Malaga) aus der Untergattung *Macroderus* CROISSANDEAU, 1894. Der Status zweier Unterarten von *C. pygmaeum* SAULCY, 1870 ist ungeklärt und zweifelhaft. Eine aus Frankreich beschriebene Art wird erstmals aus Spanien nachgewiesen. Ein Katalog der *Cephennium*-Arten der iberischen Halbinsel und Madeiras wird erstellt. Die Verbreitungsgebiete von 23 Arten werden anhand von Karten illustriert. Einschließlich der neu beschriebenen Taxa ist die Gattung *Cephennium* derzeit mit 251 benannten Arten vertreten.

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