



## **A revision of *Zoosetha* Mulsant & Rey and *Poromniusa* Ganglbauer. II. A new species from Spain and additional records (Coleoptera: Staphylinidae: Aleocharinae)**

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### **Abstract**

*Zoosetha wunderlei* sp. n. (Spain: Sierra de Segura), the ninth species of the genus, is described, illustrated, and distinguished from its congeners. Additional records of other species of *Zoosetha* Mulsant & Rey and of *Poromniusa* Ganglbauer are presented. The distributions of *Zoosetha wunderlei*, *Z. inconspicua* (Erichson), *Z. incisa* Assing, *Poromniusa prociua* (Erichson), and *P. crassa* (Eppelsheim) are mapped.

**Key words:** Coleoptera, Staphylinidae, Aleocharinae, Oxypodini, *Zoosetha*, *Poromniusa*, Palearctic region, taxonomy, new species

### **Introduction**

In a recent revision, eight valid species of *Zoosetha* and two of *Poromniusa* were recognized (Assing 1998). All the species of these genera are rare to extremely rare. Species of *Poromniusa* inhabit the litter layer; in the southern part of their range, they are mostly found in montane woodland. The natural history of *Zoosetha* species is poorly known; the fact that they are rarely collected in larger numbers (usually, single specimens are found) suggests that they apparently have more specialised habitat requirements.

The objective of the present paper is to present new data that have become available in the meantime, including an undescribed species from Spain and various records of zoogeographic interest.

**Material, measurements, and abbreviations**

The material treated here is deposited in the following institutions and private collections:

DEI	Deutsches Entomologische Institut, Eberswalde
MHNG	Muséum d'histoire naturelle Genève
NHMB	Naturhistorisches Museum Basel, coll. Frey (E. Sprecher)
NHMW	Naturhistorisches Museum Wien
ZIN	Zoological Institute, St.-Petersburg (V. I. Gusarov)
cAng	private collection F. Angelini, Francavilla Fontana
cApf	private collection W. Apfel, Eisenach
cAss	private collection V. Assing, Hannover
cNon	private collection G. Nonveiller, Zemun
cRen	private collection K. Renner, Bielefeld
cWun	private collection P. Wunderle, Mönchengladbach
cZan	private collection A. Zanetti, Verona

The measurements are given in mm and abbreviated as follows:

AL: length of antenna; HW: head width; PW: maximal width of pronotum; PL: length of pronotum along median line; EL: length of elytra from apex of scutellum to hind margin; EW: width of elytra; HTiL: length of metatibia; HTaL: length of metatarsus; TL: total length from anterior margin of labrum to apex of abdomen.

***Zoosetha wunderlei* sp. n.** (Figs. 1–10, Map 1)

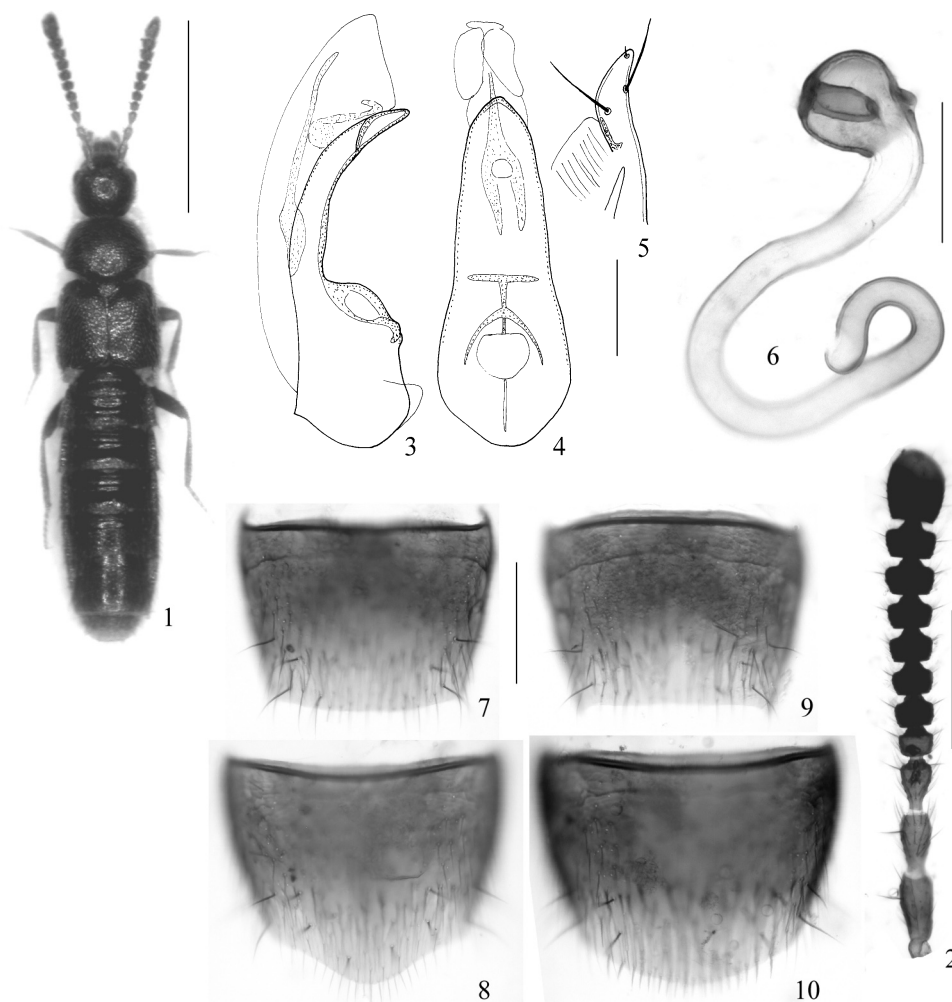
**Types.** Holotype ♂: "E - No. 9; Andalusia, Sierra de Segura, 20 km S Pontones, 1830m, 38°00'41N, 02°44'35W, 9.IV.2003, leg. V. Assing / Holotypus ♂ *Zoosetha wunderlei* sp. n. det. V. Assing 2003" (cAss). Paratypes: 19♂♂, 26♀♀: same data as holotype, leg. Assing, Wunderle (DEI, MHNG, NHMW, cAss, cWun).

**Description.** Measurements, in mm (range, arithmetic mean; n=17): AL: 0.68–0.82, 0.76; HW: 0.30–0.36, 0.34; PW: 0.39–0.47, 0.44; PL: 0.29–0.33, 0.32; EL: 0.29–0.36, 0.35; EW: 0.48–0.60, 0.55; HTiL: 0.33–0.38, 0.36; HTaL: 0.22–0.26, 0.24; TL: 2.2–2.8, 2.6.

Facies as in Fig. 1; females on average slightly larger than males. Body blackish; legs with the femora pitchy, tibiae dark testaceous, tarsi pale testaceous; antennae distinctly infuscated apicad, basal three antennomeres light brown, the following antennomeres gradually infuscated, apical antennomeres blackish.

Head approximately as wide as long (length measured from anterior margin of clypeus); eyes large and bulging, distinctly projecting from lateral outline of head, approximately as long as postocular region in dorsal view (Fig. 1); dorsal surface with large and dense, but not very deep puncturation, with greyish suberect pubescence, and with distinct

microsculpture. Antenna distinctly incrassate apically, preapical antennomeres strongly transverse (Fig. 2).



**FIGURES 1–10.** *Zoosetha wunderlei* sp. n.: 1 — facies; 2 — antenna; 3, 4 — median lobe of aedeagus in lateral and in ventral view; 5 — apical lobe of paramere; 6 — spermatheca; 7 — male tergite VIII; 8 — male sternite VIII; 9 — female tergite VIII; 10 — female sternite VIII. Scale bars: 1: 1.0 mm; 2, 7–10: 0.2 mm; 3–6: 0.1 mm.

Pronotum distinctly transverse and wider than head (PW/PL: 1.32–1.41, 1.37; PW/HW: 1.26–1.36, 1.31); posterior angles obtuse, but rather well-marked; puncturation on average slightly denser and coarser than that of head; pubescence directed caudad along median line and predominantly transversely laterad in lateral areas.

Elytra wider and at suture on average slightly longer than pronotum (EW/PW: 1.17–1.29, 1.24; EL/PL: 1.00–1.14, 1.08); puncturation similar to that of pronotum, sometimes

coarser and more well-defined; posterior margin near posterior external angles distinctly sinuate; hind wings developed. Legs relatively short; metatarsus distinctly shorter than metatibia (HTiL/HTaL: 1.44–1.61, 1.51); first metatarsomere longer than the second, but shorter than the combined length of the second and third metatarsomere.

Abdomen widest at segment V, slightly narrower than elytra; tergites III - V with moderately deep and finely punctate anterior impressions; tergite VI without such impression; posterior margin of tergite VII with fully developed palisade fringe; puncturation fine, but distinct, and moderately dense; microsculpture shallow.

♂: tergite VIII convex posteriorly (Fig. 7); posterior margin of sternite VIII obtusely pointed (Fig. 8); median lobe of aedeagus as in Figs. 3–4, ventral process apically of incised apically; apical lobe of paramere as in Fig. 5.

♀: tergite VIII posteriorly truncate (Fig. 9); posterior margin of sternite VIII convex (Fig. 10); spermatheca with long duct (Fig. 6).

**Etymology.** This species is dedicated to my friend Paul Wunderle, Mönchengladbach, who collected part of the types.

**Comparative notes.** *Zoosetha wunderlei* is distinguished from other species of the genus as follows: In *Z. salomonis* (Saulcy), antennomere III is longer and more slender, approximately twice as long as wide, the first metatarsomere is at least as long as the combined length of the two following tarsomeres, the maxillary palpi are longer and more slender, the abdomen is narrower, almost parallel and more shining, and the spermatheca has a much shorter duct (the male sexual characters are unknown).

*Zoosetha fortepunctata* (Bernhauer) from Middle Asia (Turkestan), whose male sexual characters are unknown, is smaller (AL: 0.54 mm, PL: 0.27 mm, PW: 0.33 mm), has a smaller and less transverse pronotum (1.25 times as wide as head, and 1.22 times as wide as long) and a spermatheca with a much longer duct.

*Zoosetha graeca* (Bernhauer) is of lighter coloration, the antennae are weakly infuscated apically, the head and pronotum are much more coarsely punctured, the posterior angles of the pronotum are less well-marked, and the spermatheca has a much shorter duct (the male sexual characters are unknown).

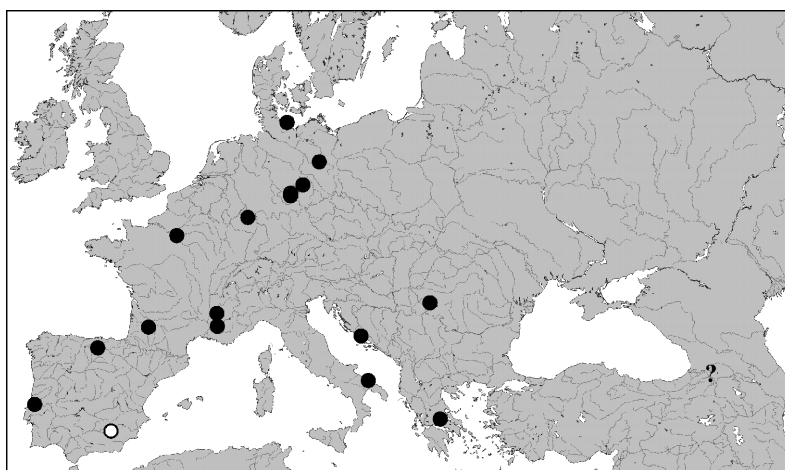
In *Z. rufescens* (Kraatz), the forebody is usually reddish brown, the antennae are relatively shorter and have more transverse preapical antennomeres, the pronotum is larger in relation to the head and elytra, the elytra are relatively shorter, the ventral process of the aedeagus is distinctly incised apically, and the spermathecal duct is much shorter.

*Zoosetha inexcisa* Assing, which is known only from northeastern Spain, is of lighter coloration with the antennae only indistinctly infuscate apically, the head is more sparsely punctate, the antennae have less transverse preapical antennomeres, the pronotum is less transverse (1.24–1.26 times as wide as long), the abdomen is not (or only indistinctly) microsculptured, and the ventral process of the aedeagus is less strongly bent in lateral view (the female sexual characters are unknown).

*Zoosetha inconspicua* (Erichson), *Z. incisa* Assing, and *Z. pechlaneri* (Bernhauer) are all smaller, have a much more coarsely punctured forebody, a more strongly bent ventral process of the aedeagus, and a much shorter spermathecal duct.

For illustrations of the sexual characters of these species and a diagnostic key, in which the new species would key out at couplet 6 together with *Z. rufescens* and *Z. inexcisa*, see Assing (1998).

**Distribution and bionomics.** Although the new species is currently known only from one locality in the Sierra de Segura (Map 1), its external morphology (large eyes, fully developed wings) suggests that it is probably more widespread in the Iberian Peninsula. All the types were found near snow patches with a northern exposure. Some of them were found on the underside of stones, most of them by sifting debris and roots between stones in the vicinity of snow. One of the dissected females had a mature egg in the ovaries.



**MAP 1:** Distribution of *Zoosetha wunderlei* sp. n. (open circle) and *Z. inconspicua* (Erichson) (filled circles, ?: unspecified Caucasian locality), based on examined records.

### *Zoosetha inconspicua* (Erichson)

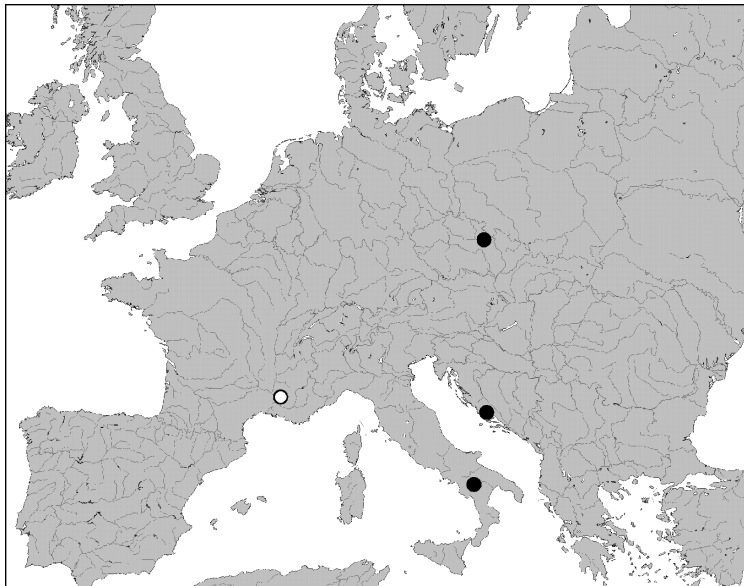
**Additional material examined. Germany:** 1♀, Thüringen, Elxleben, Hühnerbiel, pitfall, 11.IX.1998, leg. Sparmberg (cApf); 1♀, Rheinland-Pfalz, Schloßböckelheim, Heimberg, 26.VII.1999, leg. Wenzel (cRen). **Croatia:** 1♀, Split (NHMB). **Greece:** 1♂, 1♀, Fthiotis, ca. 20 km SSE Lamia, Oros Kallidromo, 38°44'26N, 22°31'41E, 1250m, under stone, 7.IV.2001, leg. Assing, Wunderle (cAss, cWun).

The species is widespread in the south of the Western Palaearctic region, but very rare. It is here recorded from Greece for the first time. Its currently known distribution is illustrated in Map 1.

*Zoosetha incisa* Assing

**Additional material examined. Italy:** 1♂, 1♀, 5 exs., Basilicata, Oasi WWF, Pantano di Pignola (PZ), 770m, under *Salix*, 7.XI.1993 (cAss, cZan).

*Zoosetha incisa* was previously known only from Austria and Croatia; it is here recorded from Italy for the first time (Map 2). The specimens were all collected in a marsh near the trunk of *Salix* sp. According to Tronquet (pers. comm.) the species was also recorded from France: 1♂, 1♀, Vaucluse, Barroux, llama droppings, 20.IX.1998, leg. Coffin.



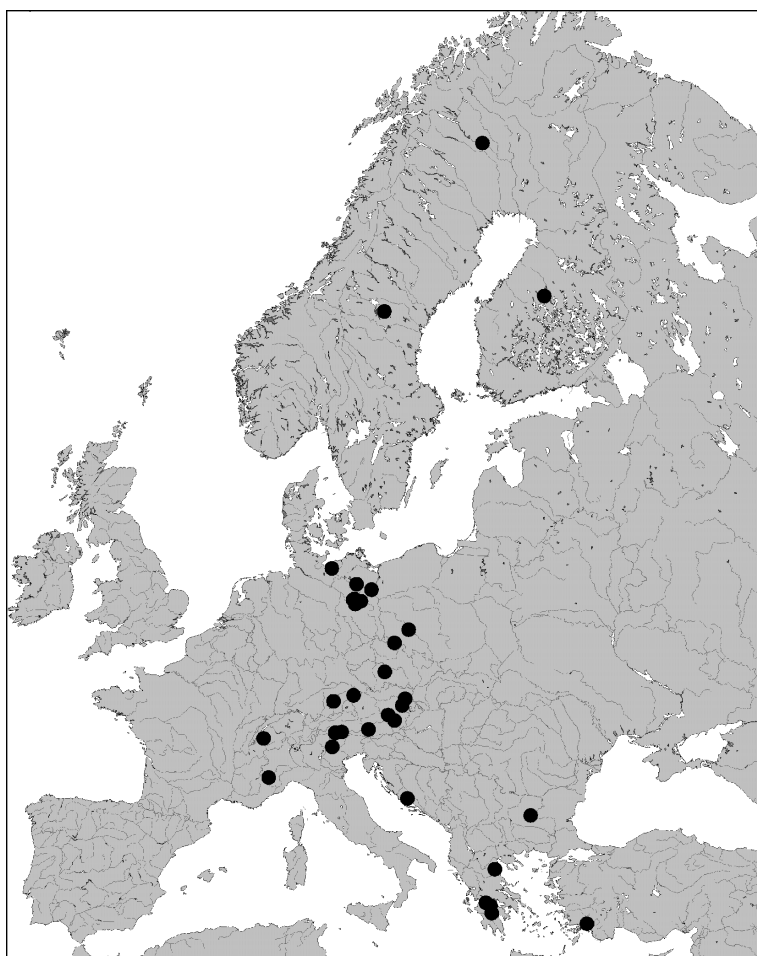
**MAP 2:** Distribution of *Zoosetha incisa* Assing; filled circles: examined records; open circle: record by Tronquet (pers. comm.).

*Poromniusa procidua* (Erichson)

**Additional material examined. Germany:** 2♂♂, Bayern, Pfarrkirchen, leg. Stöcklein (NHMB); 8 exs., Fürstenberg i. M., leg. Konow (ZIN). **Austria:** 1♂, 1♀, Niederösterreich, Bad Vöslau (NHMB); 3♂♂, 1♀, Wien (NHMB). **Italy:** 1♂, Piemonte, Val Varaita, 1800m, *Larix* litter, 27.VI.1997, leg. Kapp (cKap). **Czech Republic:** 2♂♂, 1♀, 'Krč-K.' (NHMB). **Greece:** 2♂♂, 3♀♀ [all brachypterous], N Larissa, Kato Olympos, E Kallipefki, 39°57'34N 22°29'15E, 1500-1580m, 6.IV.1998, leg. Assing, Wunderle (cAss, cWun); 21 exs., Pelopónnisos, Ahaïa, Chelmos, Xerokambos E Kalávrita, 38°00'36N, 22°11'27E, 1650m, *Abies* wood, litter near and under snow, 12.IV.1998, leg. Zerche (DEI, cAss); 2 exs., Pelopónnisos, Ahaïa, Panahaiko, northern side, 38°11'00N, 21°51'41E, 1610m, near snow, 26.IV.1998, leg. Zerche (DEI); 101 exs., Pelopónnisos, Arkadía, Menalo, SW Levidi, ski-center, 37°39'06N, 22°15'48E, 1625m, *Abies* wood, litter near and under snow, 22.IV.1998, leg. Zerche (DEI, cAss). **Turkey:** 1♂, Muğla, Gölgeli Dağları, 20km NE

Köyceğiz, above Ağla, 37°03'40N, 28°43'30E, 1710m, sifted from grass, 6.X.2002, leg. Assing (cAss).

The species is here recorded from Greece and Turkey for the first time. Previously, the southernmost records were from Croatia and Bulgaria. The currently known distribution is illustrated in Map 3. One female collected on 22 April had a mature egg in the ovaries. All Greek specimens are brachypterous; specimens from the Pelopónnisos are on average smaller and also have a slightly smaller aedeagus, but otherwise no differences were found suggesting that they should represent a distinct species.



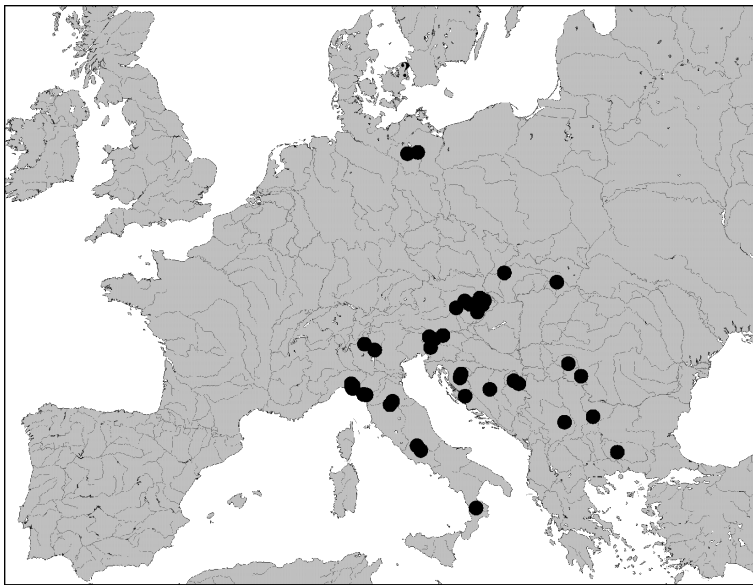
**MAP 3:** Distribution of *Poromniusa prociua* (Erichson), based on examined records.

### *Poromniusa crassa* (Eppelsheim)

**Additional material examined. Italy:** 3♂♂, 1♀, Liguria, 20 km NE Chiavari, Mt. Penna, Pso. Prato del Chiodo, 44°29N, 9°29E, 1400m, beechwood, 11.IX.2001, leg. Wunderle (cAss); 2 exs., Liguria, Cassego (SP), 800m, 24.V.1999, leg. Angelini (cAss); 3♂♂, 3♀♀,

Toscana, Alpi Apuane, W M. Sagro, M. Borla, 1450m, Fagetum, 6.IX.1998, leg. Assing (cAss); 1♂, 2♀♀, Alpi Apuane, N M. Altissimo, Grotta dell'Uncino, 1100m, Fagetum, 9.IX.1998, leg. Assing (cAss); 6 exs., Lazio, M.ti Emici, Guarcino, P. Paradiso (FR), 1700m, 7.V.1998, leg. Angelini (cAng, cAss). **Romania:** 2♀♀, 1 ex., Banat, N Bogsán [=Bocşa] (MHNG, cAss). **Yugoslavia:** 1♂, Serbia, Radan planina, Ivanjske livade, 800m, 28.VI.-1.VII.2000, leg. Pavićević (cNon).

The species is here recorded from Serbia for the first time. The currently known distribution is illustrated in Map 4. All the specimens examined from Alpi Apuane and Liguria are brachypterous.



**MAP 4:** Distribution of *Poromniusa crassa* (Eppelsheim), based on examined records (filled circles). ?: unexamined record from Denmark.

### Acknowledgements

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### References

- Assing, V. (1998) A revision of the Palearctic species of *Zoosetha* Mulsant & Rey and *Poromniusa* Ganglbauer (Coleoptera, Staphylinidae, Aleocharinae). *Mitteilungen des Museums für Naturkunde Berlin, Deutsche Entomologische Zeitschrift*, 45, 73–94.