

A new species of *Leistus* FRÖLICH from the Picos de Europa, Cantabrian mountains, Spain (Coleoptera: Carabidae)

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Abstract

Leistus starkei, a new species belonging to the *Leistus angusticollis* group, is described. The brachypterous species is characterised by the evenly rounded sides of the pronotum, a small seta in the lateral bead of the pronotum, the absence of a seta on the obtuse hind angle, the rounded shoulder and some characters of the male genitalia. The main diagnostic features are discussed. A short description of the sampling site in the alpine zone of the western massif of the Picos de Europa is given.

Key words: Coleoptera, Carabidae, Nebriinae, *Leistus*, Iberian Peninsula, Spain, taxonomy

Introduction

Up to now, 13 species of *Leistus* FRÖLICH have been recorded from the Iberian Peninsula (TURIN 1981, ABMANN & HEINE 1993, ZABALLOS & JEANNE 1994). Four of these belong to the subgenus *Pogonophorus* LATREILLE: *L. spinibarbis* FABRICIUS, *L. expansus* PUTZEYS, *L. montanus* STEPHENS and *L. pyrenaicus* KRAATZ. The other known species are members of the subgenus *Leistus* s.str. (PERRAULT 1980, 1986). Except for *L. fulvibarbis* DEJEAN, *L. nitidus* DUFTSCHMID and *L. crenatus* FAIRMAIRE, the remaining six species belong to the *L. angusticollis* DEJEAN group which is restricted to the northwestern Iberian Peninsula. The members of this group are characterised by the following features (cf. PERRAULT 1979): fifth article of the antennae distinctly longer than the third one; mandibles strongly enlarged laterally; hind wings reduced, thus shoulders rounded; base and anterior transverse impression of pronotum strongly punctate; elytra oval and prolonged; first three abdominal segments strongly and densely punctate. All species of this group are endemic to small mountain ranges, and all of them live in humid habitats from colline to subalpine zones.

Only one species of the *L. angusticollis* group, *L. barnevillei* CHAUDOIR, was hitherto known from the massifs of the Picos de Europa (Cantabrian Mountains). An additional species is described in this paper.

Leistus starkei sp.n.

DIAGNOSIS: A member of the *Leistus angusticollis* group; 8.7 mm long; antennae and legs long; sides of the pronotum evenly rounded; lateral bead of the pronotum with a small seta; pronotal hind angle without seta; shoulders rounded; aedeagus long and slender, strongly bent ventrally in the middle, apex dilated.

TYPE LOCALITY: Spain, Asturias, Picos de Europa, Macizo del Cornion.

TYPE MATERIAL: Holotype ♂: "NW-Spain, Asturias, Picos de Europa, Macizo del Cornion, Peña Santa de Enol, 1800 m above sea level, 8.6.1995, Werner Starke leg.", in coll. Abmann.

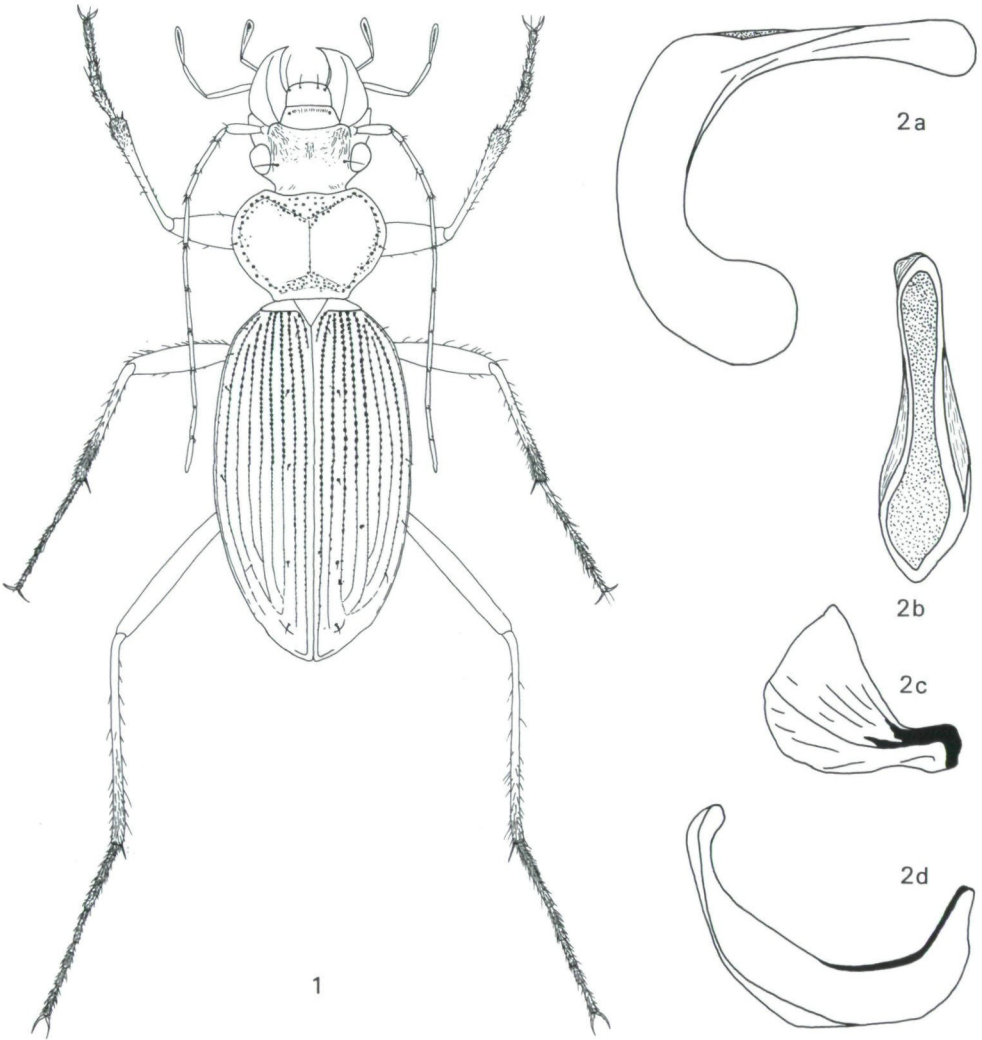


Fig. 1: *Leistus starkei* sp.n., habitus.

Fig. 2: *Leistus starkei* sp.n.; male genitalia: a) aedeagus, left side; b) aedeagus apical half, dorsal view; c) left paramere; d) right paramere.

DERIVATIO NOMINIS: This species is dedicated to Werner Starke, Warendorf (Germany), who collected the holotype during one of our common excursions in northwestern Spain.

DESCRIPTION: Habitus as in Fig. 1; size: 8.7 mm; colour russet, the appendices and the margins of pronotum and elytra brightened up to a yellow brown.

Upper surface with a fine microsculpture, head and pronotum with isodiametric, elytra with fine, more transverse meshes.

Head broad, frons faintly and irregularly rugoso-punctate laterally in anterior half up to the supra-orbital punctures. Eyes protruding, virtually hemispherical. Temples immediately constricted behind eyes. Antennae long (two-thirds of body length); first and third segment of same length, fifth segment longest, 1.3 times longer than third one; last antennal segments also very long (ninth segment as long as the first one). Eight setae in the gular row, situated on a comb-like cuticular prominence. Stipes with eight setae positioned on pegs. Tubercle on ventral side of the hypopharynx with two setae.

Pronotum cordiform, sides evenly rounded, sinuated before hind angles; hind angles obtuse (115°); at the anterior border of the pronotum, a transverse small fold, medially interrupted; lateral bead broadly pulled up, with a small lateral seta slightly behind the maximal width, no seta at hind angle; near the hind angles, base of pronotum slightly stretched, otherwise sinuated; in the centre of the disk, a median sulcus developed, obsolete to the front and the base; on the disk a very fine punctation and, at the margins and near the median sulcus, an irregular punctation.

Elytra ellipsoidal; maximum width in the middle; shoulder virtually rounded; tooth strongly reduced, basal margin meets lateral margin (140°); apex of elytra acuminate; striae deep, intervals convex, toward the apex less distinct, but still clearly visible; striae strongly punctate, in the apical half more sparsely and (specially in the outer striae) more spaciouly; base of the first stria with a small seta; interval three with three strong setigerous punctures, one before the fore third, the second at the half of the total length and the third before the level of hind third, in the outer part of the interval; an additional smaller apical setigerous puncture also present; basal margin distinct, near the scutellum turned into the scutellar stria, which reaches the anterior sixth of the elytral length; sixth to eighth striae not reaching the basal margin.

Legs very long and thin. Profemora very slightly thickened; tarsi and distal third of tibiae pubescent; second and third protarsal segments strongly enlarged, the fourth one only moderately.

Aedeagus (Fig. 2a, b) long and slender, strongly bent ventrally in the middle; basal half continuously rounded, apical half on the top very straight, forming a groove between the strongly sclerotized sides; preapical field restricted to the beginning of the apical half; apex dilated, resembling a spoon which is turned to the left side. Left paramere (Fig. 2c) broad with a small tip. Right paramere (Fig. 2d) long, semicircularly rounded; the apical third bent inwards.

AFFINITIES: The new species is distinguishable from all other species of the *L. angusticollis* group by the obtuse hind angles of the pronotum, the more pronounced shoulder of the elytra and the very long and thin extremities.

Within the *L. angusticollis* group, *L. angulatus* LA BRULERIE and *L. constrictus* SCHAUFUSS form a subgroup distinguished from the other members of the group by the prolonged, straight apical part of the aedeagus (cf. PERRAULT 1979). *Leistus starkei* sp.n. resembles these two species in the shape of the aedeagus, but is easy to separate from *L. angulatus* by the rounded sides of the pronotum, from *L. constrictus* by the obtuse hind angles of the pronotum and from both species by the more reduced basal tooth of the elytra and by the asymmetric aedeagal apex.

BIOGEOGRAPHICAL AND ECOLOGICAL NOTES: *Leistus starkei* sp.n. was collected in the lower parts of the alpine zone. The carabid beetles associated with the new species are - with the exception of the two fully winged *Bembidion* species living mainly at the border of snow fields - endemics of the Picos de Europa: *Carabus (Iniopachys) auriculatus* PUTZEYS, *Haptoderus ehlersi* HEYDEN, *Nebria sobrina* SCHAUFUSS, *Trechus kricheldorfii* WAGNER, *Zabrus consanguineus* CHEVROLAT, *Bembidion pyrenaicum* DEJEAN, *Bembidion bipunctatum* LINNE.

Leistus starkei sp.n. was found in an alpine talus under a layer of stones. Perhaps, this species usually lives in the deeper parts of these well-drained habitats. By this assumption the absence of brachypterous *Leistus* in the pitfall traps for catching epigeic active ground beetles is

comprehensible (cf. the investigation by pitfall traps of BRANDMAYR & ZETTO-BRANDMAYR (1988) on the "Polle Pass", the type locality of *L. punctatissimus* BREIT). The characteristic habitus of these alpine *Leistus* (e.g. *L. starkei* sp.n., *L. pyrenaicus*) with strongly prolonged extremities could be interpreted in the light of this assumption as an adaptation to the crevices and gaps of the habitat (as in some troglomorphic species).

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Zusammenfassung

Leistus starkei, eine neue Art aus der *Leistus angusticollis* Gruppe, wird beschrieben. Die brachyptere Art ist durch folgende Merkmale charakterisiert: Halsschildseiten kontinuierlich gerundet, Halsschildseitenrand mit einer kleinen Seta, Halsschildhinterwinkeln stumpf und ohne Seta, Schultern nahezu verrundet, Form des männlichen Genitals. Die wichtigsten diagnostischen Merkmale werden diskutiert. Eine kurze Beschreibung der Fundstelle in der alpinen Zone des westlichen Massivs der Picos de Europa wird gegeben.

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