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A notable new species of *Blennidus* Motschulsky from Chile

(Coleoptera: Carabidae: Pterostichinae)

RIASSUNTO

Una peculiare nuova specie di Blennidus Motschulsky del Cile (Coleoptera: Carabidae: Pterostichinae).

Gli autori descrivono *Blennidus magellanicus* n. sp. della Provincia di Magallanes, Cile. La nuova specie mostra alcuni caratteri morfologici originariamente attribuiti al sottogenere *Blennidus* sensu stricto e alcuni altri pertinenti alle specie incluse nel sottogenere *Agraphoderus*. Questo avvalorava l'opinione di Moret che giudica inconsistente la ripartizione delle specie di *Blennidus* in diversi sottogeneri.

Parole chiave: Sud America, Cile, Magallanes, fauna subantartica, Carabidae, tassonomia, biodiversità.

INTRODUCTION

The genus *Blennidus* Motschulsky, 1866 (Pterostichini, Euchroina) (type species: *Blennidus ferrugineicornis* Motschulsky, 1866) currently includes 132 species restricted to South America, distributed mainly in the Andean Region, extending from North Colombia to Chile (Lorenz 2005; Allegro & Giachino 2015). They show rather wide variability in habitus and are distinguished by the presence in most species of a transverse sulcus on sterna IV-VI (very variable in shape and extent), by the presence of an apical seta on the penultimate article of labial palpi and of thin and sparse pubescence on the apical article, by achete subgonocoxites and by gonocoxites with a single inner dorso-lateral major spine and a single outer one, as well as by an enlarged basal part of aedeagus, just above the attachment of parameres (Moret 1995). Giachino & Sciaky (1991) showed the importance of the morphology of female genital complex for investigating the phylogenetic affinities of *Blennidus*. The habitat and altitudinal distribution of the species vary from the high altitude Andean grasslands in northern subtropical areas to the alluvial prairies in southernmost subantarctic regions.

The systematic arrangement of this genus is still under discussion. The species at present included in the genus *Blennidus* were formerly split by Straneo (1951, 1986, 1991, 1993) into the genera *Blennidus*, *Sierrobis* Straneo, 1951 and *Ogmopleura* Tschitschérine, 1899, the last including the subgenus *Agraphoderus* Bates, 1891.

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Moret (1995), after an in-depth morphological study, considered this subdivision to be inconsistent and synonymised all these taxa with the genus *Blennidus*, which had priority. He also stated that any subdivision into subgenera was inconsistent, due to the variability of the characters on which such separation was based, in particular the presence/absence of a transverse sulcus on the abdominal sterna IV–VI. This view-point was accepted by Lorenz (2005). At the same time, Moret (1995) recognized within the Ecuadorian *Blennidus* the presence of ‘species groups’, each one including species with a very similar aedeagal morphology; the species of each group are probably close relatives and generally range in clearly delimited Andean areas; following this point of view, we revised two ‘species groups’ of Peruvian *Blennidus* (Allegro & Giachino 2011a, 2011b). Successively, Moret (2003) restored three ‘convenience subgenera’ (*Blennidus* s. str., *Sierrobrius* Straneo, 1951 and *Agraphoderus* Bates, 1891) and described a new one (*Jasinskiellus* Moret, 2005) in order to keep the lineages of some well characterized species separate, even though he stated that these taxa lack any phyletic value. We agree with Moret (1995) on the inconsistency of the characters basing the subdivision into the four subgenera and in this perspective we proposed a tentative systematic arrangement in ‘species groups’ of the Peruvian species formerly included in the subgenus *Agraphoderus* sensu Moret (2003) (Allegro & Giachino 2015).

Compared to Peru (53 species) and Ecuador (35 species excluding those from the Galapagos), the *Blennidus* fauna of Chile is relatively poor, with only 15 species so far recorded, which are listed below in alphabetical order:

- B. aratus* (Solier, 1849)
- B. blandus* (Erichson, 1834)
 - = *marginatus* (G.R. Waterhouse, 1841)
- B. ferrugineicornis* Motschulsky, 1866
 - = *angustatus* (Chaudoir, 1843) [nec Duftschmid, 1812]
- B. fontainei* (Tschitschérine, 1900)
- B. franzanus* (Straneo, 1972)
 - = *franzi* (Straneo, 1969) [nec Negre, 1955]
- B. hebes* (Tschitschérine, 1898)
- B. inops* (Tschitschérine, 1898)
- B. laterestriatus* (Chaudoir, 1876)
 - = *lateralistriatus* (Rye, 1876)
- B. mediolaervis* (Chaudoir, 1876)
- B. meticulousus* (Dejean, 1831)
 - = *lateralis* (Brullé, 1838)
 - = *bordoni* (Straneo, 1993)
 - = *filicornis* (Straneo, 1993)
- B. obscuripennis* (Solier, 1849)
- B. parvulus* (Solier, 1849)
- B. rufescens* (Solier, 1849)
- B. somnians* (Tschitschérine, 1898)
- B. sublustris* (Tschitschérine, 1898)

Pending an in-depth revision and a comprehensive systematic treatment of these species, the study of the material deposited in Collection Mateu at MRSN, in Collection Giachino and in Collection Allegro brought to light a remarkable new *Blennidus* species from Chile (Province of Magallanes), which is described and illustrated herein.

MATERIAL AND METHODS

The specimens of the new species are deposited in the following Museums and private Collections: CAI: G. Allegro Collection (Moncalvo, Asti, Italy), CCa: A. Casale Collection (Torino, Italy), CGi: P.M. Giachino Collection (Torino, Italy), MNHNS: Museo Nacional de Historia Natural (Santiago, Chile), MRSN: Museo Regionale di Scienze Naturali (Torino, Italy).

The abbreviations used for the type material are: TS type series; HT holotype; PT, PTT paratype(s). The type locality is quoted verbatim from the label.

Images were taken using a Leica DFC295 camera mounted on a Leica M205 C Stereomicroscope, using Leica Application System V4.0 software.

RESULTS

Blennidus magellanicus sp. n.

(Figs. 1 - 5)

Type locality - Chile, Prov. Magallanes, Rio Rubens.

Type series - HT ♂, Chile, Prov. Magallanes, Rio Rubens, X.1962, T. Cekalovic legit (MRSN). PTT: 4 ♂♂ 4 ♀♀, same data as the holotype (MNHNS, MRSN, CAI, CGi); 1 ♀, Chile, P.N. Torres del Paine, Lago Pehoe, Mirador del Condor m 160, 18.XII.2003, P.M. Giachino legit (CGi); 7 ♂♂ 3 ♀♀, Chile, P.N. Torres del Paine, Mirador Cuernos, 5.XII.2016, m 200, G. Allegro legit (CAI, CCa, CGi).

Diagnosis - A *Blennidus* species 8.80–10.17 mm long, black and shiny, sometimes elytra with faint bluish or greenish lustre; legs black; antennae black with basal antennomere reddish-brown (Fig. 1). It is easily distinguished from all other Chilean *Blennidus* species by the combined presence of the following features: base of pronotum wider than anterior margin, with hind angles marked and prominent, delicately obtuse; first elytral stria distinctly more impressed than others, which are superficially and sparsely punctate; metathoracic wings present, longer than elytra by about 1/3 of elytral length; apical blade of the median lobe of aedeagus slender, narrowed towards the pointed apex and sinuous at sides (Fig. 3B).

Description - Habitus as in Fig. 1. Overall length of the HT ♂ (from labrum to apex of elytra) 9.12 mm (PTT ♂♂ 8.80–9.27, ♀♀ 9.54–10.51 mm). Dorsal surface black

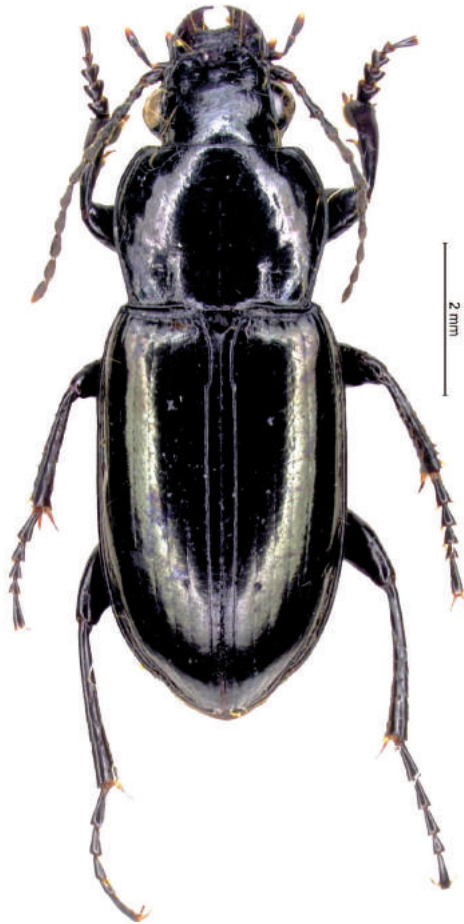


Fig. 1 – Habitus of *Blennidus magellanicus* sp. n. Holotypus.

with faint bluish lustre on elytra, shiny. Microsculpture very superficial, hardly distinct, only apparent on elytra. Antennae black with first antennomere reddish-brown; legs black; mouthparts dark brown. Metathoracic wings present, probably non functional, longer than elytra of about 1/3 of elytral length.

Head moderately large, eyes convex; temples as long as 1/3 of eyes. Clypeus bisetose, delicately excavate in middle; labrum transverse, 6-setose. Frontal impressions short, wide and superficial. Frons between eyes smooth and shiny. Terminal labial palpomere with very thin and sparse hairs; penultimate palpomere bisetose and with a short apical seta. Median tooth of mentum prominent and excavate at apex. Antennae short, hardly reaching the base of pronotum, with antennomeres IV–X only a little longer than wide; the first antennomere usually paler.

Pronotum transverse (width/length=1.27), with base wider than the anterior

margin and maximum width in the fore half (Fig. 2). Microsculpture hardly visible only near hind angles, disk smooth and shiny. Usually two basal impressions on each side; the inner one wide and superficial, delicately wrinkled; the external shorter and superficial, smooth. Mid longitudinal line superficial, generally only impressed between the submarginal sulci, which are hardly evident. Lateral margins narrowly bordered and unevenly curved, almost linear in the basal half. Anterior and posterior margins bordered at sides; base nearly linear. Front angles hardly prominent; hind angles marked and prominent, delicately obtuse (Fig. 2). Two lateral setae on each side, one at the hind angles and one at about 3/4 from base. Prosternal process glabrous, rounded and distinctly margined at apex.

Elytra nearly parallel sided (length/width=1.62), fairly convex. Microsculpture superficial, transverse, hardly distinct. Shoulders angulate, with a small denticle. Scutellar stria present between striae 1 and 2. A setigerous puncture is present at the junction of the 2nd and the scutellar stria. Sides nearly linear and parallel, sinuate near apex; lateral margin narrow. Usually 3 setigerous punctures on each elytron, the 1st at basal 4th and adjoining the 3rd stria, the second at the apical 3rd and adjoining the 2nd stria; the third at apical 6th and on the 2nd stria. Umbilicate series of 6+1+8 punctures, with the groups widely distanced from each other. The 1st stria deeply impressed from base to apex of elytra, the 2nd–7th distinct but very superficial (the 7th deeply impressed only near apex), delicately and sparsely punctuate; the 8th stria impressed on whole length. Intervals flat or hardly convex; the 2nd–8th intervals wider than 1st.

Metepisterna distinctly longer than wide. Abdominal sterna IV–VI glabrous except for the pair of central setae; a thin linear and smooth impression connects the central setae; sterna IV–VI wrinkled at sides, VII entirely rugose. Sternum VII with a



Fig. 2 – *Blennidus magellanicus* sp. n. Holotypus: pronotum.

pair of apical setae in males and 2 pairs in females.

Legs stout. Male mesotibiae as well as metatibiae lacking distinct preapical swellings. Metatrochanters as long as half femora, which are bisetose at the inferior edge. 5th tarsomere with one pair of setae dorsally and 3 pairs ventrally. Male protarsomeres 1–3 triangular and strongly dilated. Metatarsomeres 1–4 externally not furrowed.

Aedeagus (Fig. 3) moderately slender (length 2.17 mm), with median lobe roundedly inserted on the basal bulb, in lateral view nearly rectilinear in the median portion and hardly bent downward at apex (Fig. 3A); in dorsal view, the median lobe is bulgy in the median portion, abruptly narrowed at the apical blade, which is slender, narrowed towards the pointed apex and sinuous at sides (Fig. 3B). Ostium in dorsal position, long and covering nearly the whole length. Left paramere disc shaped, the right one narrow, nearly straight and apically spatulate. Subgonocoxites achete; gonocoxites small and short, rounded at tip; the outer major spine inserted at basal 4th, the inner one, very small, at half length (Fig. 4).

Etymology - The specific epithet derives from the noun, in the Latin adjectivate form, of the Portuguese sailor and explorer Fernando de Magallanes, who gave his name to the antarctic Chilean Region of Magallanes (where the new species was found).

Distribution and habitat - At present *B. magellanicus* sp. n. is recorded from the



Fig. 3 – *Blennidus magellanicus* sp. n. Holotypus: median lobe of aedeagus in lateral view (A); median lobe of aedeagus in dorsal view (B).

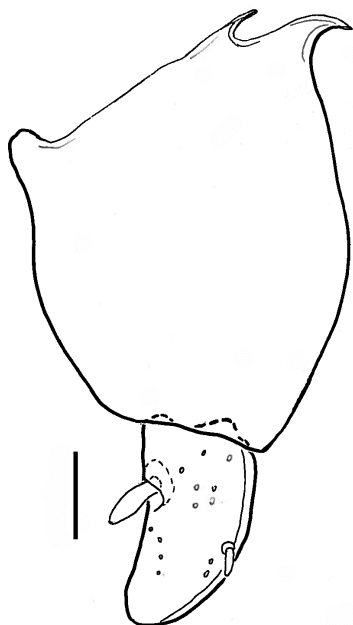


Fig. 4 – *Blennidus magellanicus* sp. n. Paratypus: subgonocoxite and gonocoxite. Scale bar: 0.1 mm.

sites of Rio Rubens, near Puerto Natales, and from ‘Mirador del Condor’ as well as from ‘Mirador Cuernos’ in the National Park ‘Torres del Paine’ (Fig. 5), in the antarctic Chilean Province of Magallanes. The specimens directly collected by the authors were found under stones or wandering on soil at daylight in xeric ‘matorral’, that is a bushy Patagonian habitat, wind-swept for most part of the year (Fig. 5).

Relationships - According to a subdivision of the genus *Blennidus* into ‘convenience subgenera’ sensu Moret (2003), *Blennidus magellanicus* sp. n. should be tentatively included in the subgenus *Blennidus* sensu stricto, which is mainly distinguished by metathoracic wings present, metepisterna longer than wide and appendages relatively long and slender; the feature concerning the presence of impressions more or less punctate in different areas of sterna IV–VI in our opinion is too variable in the different species to be considered as distinctive. As a matter of fact, *Blennidus magellanicus* sp. n. is winged and the apical blade of the median lobe of the aedeagus is vaguely reminiscent in form of that of some species belonging to *Blennidus* sensu stricto such as *B. ferrugineicornis* Motschulsky, 1866 (Fig. 6B), the type species of the genus, although it is clearly distinct from all of these. Conversely, some other features do not correspond, thus hindering the attribution of this new species to the nominative subgenus. First of all, antennae and legs are short and stout, resembling those of most species attributed to the subgenus *Agraphoderus* (Allegro & Giachino 2015); moreover, the 1st elytral stria is deeply impressed and the subsequent ones are

obsolete, as in many species attributed to the same subgenus (*Blennidus* sensu stricto species show all striae clearly distinct, with the 1st one sometimes only scarcely more impressed, see *B. ferrugineicornis* in Fig. 6A). Finally, the wings of *B. magellanicus* sp. n. only slightly exceed the length of elytra, thus probably being non functional for flight; as a matter of fact, flight ability may be considered as an unfavourable selective trait in the windy habitats where this species was found. Due to these considerations, the phylogenetic affinities of *Blennidus magellanicus* sp. n. are unclear as it shares features of the external morphology as well as of male genitalia with two different lineages which have so far been represented by the two ‘convenience subgenera’ *Blennidus* sensu stricto and *Agraphoderus*.

DISCUSSION

Blennidus magellanicus sp. n. has been described from the Region of Magallanes, Chile, and is the 16th *Blennidus* species so far recorded from this country. As stated above, this new species is remarkable as it shares some morphological



Fig. 5 – The ‘matorral’ habitat at ‘Mirador Cuernos’ in the National Park ‘Torres del Paine’, Chile, a collecting site of *Blennidus magellanicus* sp. n.

features with the species formerly included in the subgenus *Blennidus* sensu stricto and some other features with the species included in the subgenus *Agraphoderus*; therefore it could represent a connecting link between these two putative lineages. This fact further supports the opinion of Moret (1995) who stated the synonymy of *Ogmopleura*, *Sierrobisus* and *Agraphoderus* with *Blennidus* and considered the subdivision into different subgenera to be inconsistent.

As this new discovery suggests, the *Blennidus* fauna of Chile is still far from being satisfactorily understood, not only in its biodiversity but also as far as species distribution is concerned, as most *Blennidus* species recorded from Chile were described in the 19th Century without any precise provenance data. An accurate survey of the type material deposited in various museums, as well as an in-depth systematic

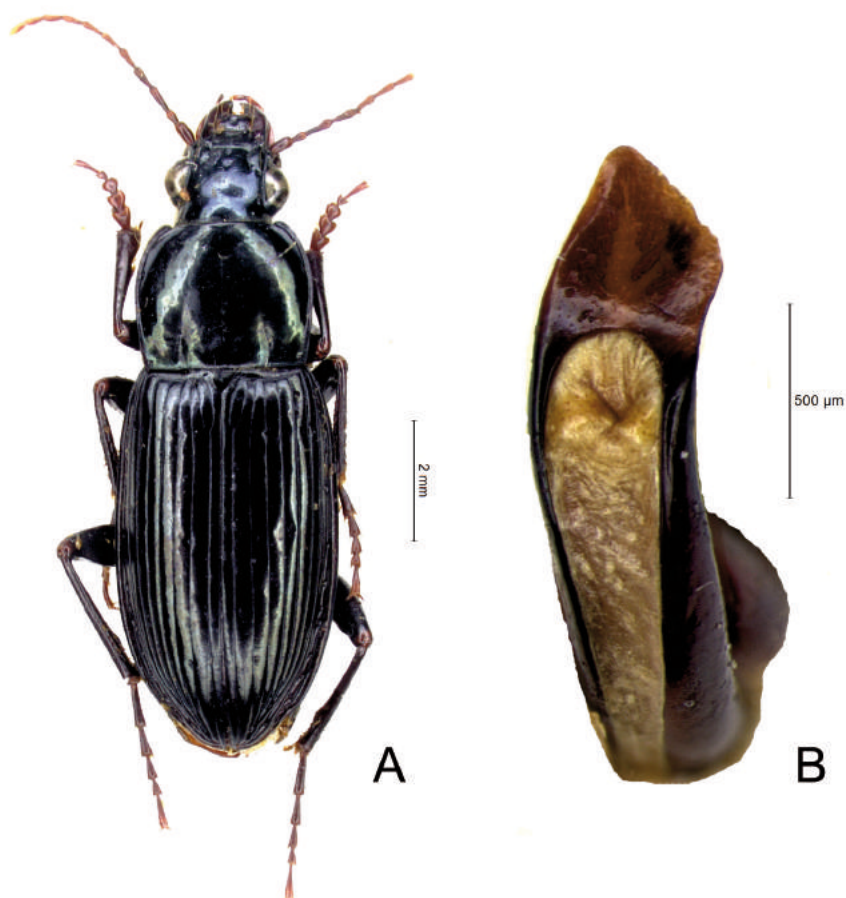


Fig. 6 – *Blennidus ferrugineicornis* Motschulsky, 1866 from Peru (in Collection Straneo, Museo civico di Storia naturale, Milano, Italy): habitus (A); median lobe of aedeagus in dorsal view (B).

treatment, are urgently required to enable more reliable biogeographical as well as systematic studies in future.

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ABSTRACT

Blennidus magellanicus sp. n. is described from the Province of Magallanes, Chile. This new species is remarkable as it shares some morphological features with the species formerly included in the subgenus *Blennidus* sensu stricto and some other features with the species included in the subgenus *Agraphoderus*, thus supporting the opinion of Moret that the subdivision of the *Blennidus* species into different subgenera is inconsistent.

KEY WORDS: South America, Chile, Magallanes, subantarctic fauna, Carabidae, taxonomy, biodiversity

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REFERENCES

- ALLEGRO G., GIACHINO P.M., 2011a. Studies on the subgenus *Agraphoderus* Bates of *Blennidus* Motschulsky from Peru: the *jelskii* species-group (Coleoptera, Carabidae, Pterostichini). – *Animal Biodiversity and Conservation*, 34.2: 295–308.
- ALLEGRO G., GIACHINO P.M., 2011b. Studies on the *Blennidus* Motschulsky subgen. *Agraphoderus* Bates from Peru: the *orbicollis* species group (Coleoptera: Carabidae: Pterostichini). – *Veroeffentlichungen des Naturkunde Museums Erfurt*, 30: 167–173.
- ALLEGRO G., GIACHINO P.M., 2015. Annotated checklist of the *Blennidus* subgenus *Agraphoderus* species from Peru with description of *B. bombonensis* n. sp. and synonymic notes (Coleoptera: Carabidae: Pterostichinae). – *Zootaxa*, 4000(1): 1–48.
- GIACHINO P.M., SCIACY R., 1991. Valore sistematico delle strutture genitali femminili in Pterostichinae (Coleoptera: Carabidae). – *Atti XVI Congresso nazionale italiano di Entomologia*, Bari-Martina Franca (TA), 23-28 settembre 1991, pp. 885–892.
- LORENZ W., 2005. Systematic list of extant ground beetles of the world (Insecta Coleoptera ‘Geadephaga’: Trachypachidae and Carabidae incl. Paussinae, Cicindelinae, Rhysodinae). Second Edition. – Tutzing, 530 pp.
- MORET P., 1995. Contribution à la connaissance du genre néotropical *Blennidus* Motschulsky, 1865. 1^{re} partie (Coleoptera, Harpalidae, Pterostichinae). – *Bulletin de la Société entomologique de France*, 100(5): 489–500.
- MORET P., 2003. Clave de identificación para los géneros de Carabidae (Coleoptera) presentes en los páramos del Ecuador y del sur de Colombia. – *Revista Colombiana de Entomología*, 29(2): 185–190.
- MORET P., 2005. Los coleópteros Carabidae del páramo en los Andes del Ecuador. Sistemática, ecología y biogeografía. Quito, Pontificia Universidad Católica del Ecuador, Centro de Biodiversidad y Ambiente, Monografía 2. – Gruppo Editoriale il Capitello, Torino, 306 pp.
- STRANEO S.L., 1951. On some Central and South American Pterostichini (Coleoptera, Carabidae) in the Museum of Comparative Zoology. – *Psyche*, 58(1): 1–19.
- STRANEO S.L., 1986. Sul genere *Blennidus* Motschulsky 1865 (Col. Carabidae, Pterostichini). – *Bollettino del Museo regionale di Scienze naturali di Torino*, 4(2): 369–393.
- STRANEO S.L., 1991. I Pterostichini dell’Ecuador (Coleoptera, Carabidae). – *Bollettino del Museo regionale di Scienze naturali di Torino*, 9(2): 397–425.
- STRANEO S.L., 1993. Nuove specie del genere *Ogmopleura* Tschitschérine (Coleoptera, Carabidae, Pterostichinae) del Perù e dell’Ecuador e chiave per la loro determinazione. – *Annali del Museo civico di Storia naturale “G. Doria”*, 89: 351–399.