CAENOCRYPTICOIDES TRIPLEHORNI NEW SPECIES, THE FIRST RECORD OF CAENOCRYPTICINI (COLEOPTERA: TENEBRIONIDAE) IN ARGENTINA, WITH CLADISTIC ANALYSIS OF THE GENUS

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Abstract.— The South American genus *Caenocrypticoides* (Pimeliinae: Caenocrypticini) comprises five species distributed in western South America. A new species from western Argentina, the first record of the tribe east of the high Andes mountains, *Caenocrypticoides triplehorni* **sp. nov.**, is described and included in the most recent key for the genus. Distributional and habitat records, SEM, and habitus photographs for this new species are included. A phylogeny of the five species of the genus is proposed, based on 19 morphological characters. The cladistic analysis provides one most parsimonious cladogram showing that four unambiguous synapomorphic characters of external morphology support the monophyly of *Caenocrypticoides*. Sexual dimorphism is for the first time reported for the genus and is present in all five species of the genus. A discussion on the biogeographic implications of the discovery of this new species east of the Andean mountains is presented, which also includes adding accurate data records and habitat associations for the Chilean species of the genus.

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Key words.— Coleoptera, Tenebrionidae, Caenocrypticini, *Caenocrypticoides*, South America, new species, cladistic analysis, biogeography.

INTRODUCTION

Caenocrypticini is a monophyletic tribe of Pimeliinae with 26 species arranged in two genera existing in two isolated areas in southwestern Africa and western South America (Endrödy-Younga 1996). The South African genus *Caenocrypticus* Gebien comprises 22 species in six subgenera distributed from the west of the Republic of South Africa through Namibia to southwestern Angola. The South American genus *Caenocrypticoides* Kaszab, prior to this study, including four species distributed over a narrow coastal desert in southern Peru and northern Chile, west of the Andes (Endrödy-Younga 1996). Caenocrypticini is one of only a few Pimeliinae higher taxa showing vicariance between South America and Africa (Doyen 1993).

Caenocrypticini was established by Koch (1958) to include the genera *Caenocrypticus*, *Cryptocarpes*

Koch (at present a subgenus of *Caenocrypticus*), *Lornamus* Koch (now synonymized under the subgenus *Cryptocarpes*), and *Vernayella* Koch (at present a subgenus of *Caenocrypticus*). Koch assigned the Caenocrypticini close to the Crypticini in the Tenebrioninae. *Caenocrypticoides* was added by Kaszab (1969) on the basis of three new species: *C. loksai* (type species) (Fig. 1), *C. translucidus* (Fig. 2), and *C. penai* (Fig. 3). The tribe was recently revised by Endrödy-Younga (1996), who described *Caenocrypticoides peruanus* (Fig. 4), removing the tribe from the subfamily Tenebrioninae and transferring it to the subfamily Pimeliinae (= Tentyriinae of Endrödy-Younga) based on lack of an external intersegmental membrane between the apical sternites and the inverted position of the aedeagus. The transfer of Caenocrypticini to Pimeliinae had been previously indicated by Doyen (1993) as part of a cladistic analysis of the subfamily.

During a recent collecting trip to the Precordillera range in Mendoza (western Argentina, east of the Andes mountains) we found specimens that belong to a new species of *Caenocrypticoides*, the first record of the tribe in Argentina.

The objectives of this study are to describe a new species of *Caenocrypticoides* with distributional and habitat records, discuss biogeographic implications, and conduct a cladistic analysis of the genus.

Methods

Type specimens are deposited in the following collections:

 HNHM – Hungarian Natural History Musem, Budapest, Hungary;

IADIZA – Instituto Argentino de Investigaciones de las Zonas Áridas, Mendoza, Argentina;

 LEULS – Laboratorio de Entomología Ecológica, Universidad de La Serena, La Serena, Chile;

 MACN – Museo Argentino de Ciencias Naturales Bernardino Rivadavia, Buenos Aires, Argentina;

 MNNC – Museo Nacional de Historia Natural, Santiago, Chile;

 PVGH – Pedro Vidal G. H., private collection, Santiago, Chile.

Body length was measured dorsally, along the midline, from anterior margin of labrum to elytral apex. Drawings were made with a camera lucida adapted to a stereoscopic microscope. For scanning electron microscopy, a male adult was fixed in 70° ethanol and later dehydrated in pure ethanol, critical point dried, and sputter-coated with gold-palladium. SEM were taken with an ETEC Autoscan U_1 at the Electronic Microscopy Laboratory of the University of Concepción, Concepción, Chile.

Taxonomy

Caenocrypticoides triplehorni sp. nov.
(Figs. 5–11)

Diagnosis. Integument glossy; punctation of dorsal surfaces conspicuous. Clypeus with anterior margin almost straight. Ventral portion of eye almost entirely covered by postgena, not exposed ventrally. Antennomere 9 as broad as long; antennomere 10 broader than long, triangular. Prosternal apophysis longer, ovate. Humeral angle of elytra rough.

Description. Length 2.5–3.0 mm.

Head. Clypeus with anterior margin almost straight. Antenna reaching mid lateral margin of pronotum; antennomere 1 broad, twice as long as broad, antennomere 2 slightly shorter, narrower, antennomere 3 again narrower,

being the narrowest segment, antennomeres 4–8 shortened, more ovate, slightly longer than broad, antennomere 9 as broad as long, antennomere 10 broader than long, both evenly triangular, antennomere 11 longer, ovate, with apical tomentose sensory patches on distal ¾ (Figs. 7–8). Ventral portion of eye not exposed and entirely covered by postgena, only supported by postgenal margin from behind. Head broadest at eyes. Punctation of dorsal surface fine, intervals broader than diameter of punctures.

Thorax. Pronotum broadest at middle, lateral margins semiparallel between middle, posterior angle, evenly arcuate towards anterior angle (Fig. 5); lateral, anterior margination fine, sharp, continuous, posterior margin immarginate, straight, anterior angles acute, posterior angles rectangular; shagreen of integument and punctation similar to head; microscopic discal hairs emerging from punctures, hardly discernible. Prosternal process produced posteriorly, ovate (Figs. 6, 9–10), forming strong acute angle in lateral view. Proepisternum lacking long silky hairs (Fig. 9).

Elytra longer than broad (110:86), broadest in front of middle (Fig. 5); lateral margins semiparallel in anterior half, evenly, gently arcuate from humeri to pointed apex (Fig. 5); humeral angle rough; transverse convexity moderate on disc, arc flattened in middle, lateral portions roundly reflected, concealing epipleural margin, which is only visible from above at humeri; punctures larger than on pronotum, almost as large as intervals between them, each puncture with a short, microscopic hair, reflected portion of elytra lacking long silky hairs; luster of integument similar to pronotum.

Venter. Punctures on thoracic sterna large, comparable to that of elytra but sparser, separated by a distance much greater than diameter of one puncture, gradually smaller on abdominal sterna towards anal segment.

Legs. Femora with sparse short golden hair, tibiae with sparse short stout setae; protibiae strongly flattened and expanded apically as an attenuate, acute process reaching base of third tarsal segment (Fig. 6); length: breadth ratio 25:10.

Sexual dimorphism: profemora of male with a nipple-shaped area in the midline between ventral face and anterior face, darker in colour, with a stout central seta surrounded by a tuft semicircle of finer setae on anterior face; female with profemora smooth and glabrous.

Etymology. We take pleasure in naming this interesting species in honor of Charles A. Triplehorn, outstanding specialist in Tenebrionidae and from whom we received valuable help during our study of this family.

Distribution and habitat. This species was found in Araucarias de Darwin, 2730 m, Sierra de Uspallata (high Precordillera range) and in Punta de Vacas, 2400 m (high Andean mountains) in the northwest of Mendoza Province, Argentina (Fig. 11). In Araucarias de Darwin all six type specimens of *Caenocrypticoides triplehorni* were collected under the same stone and were observed
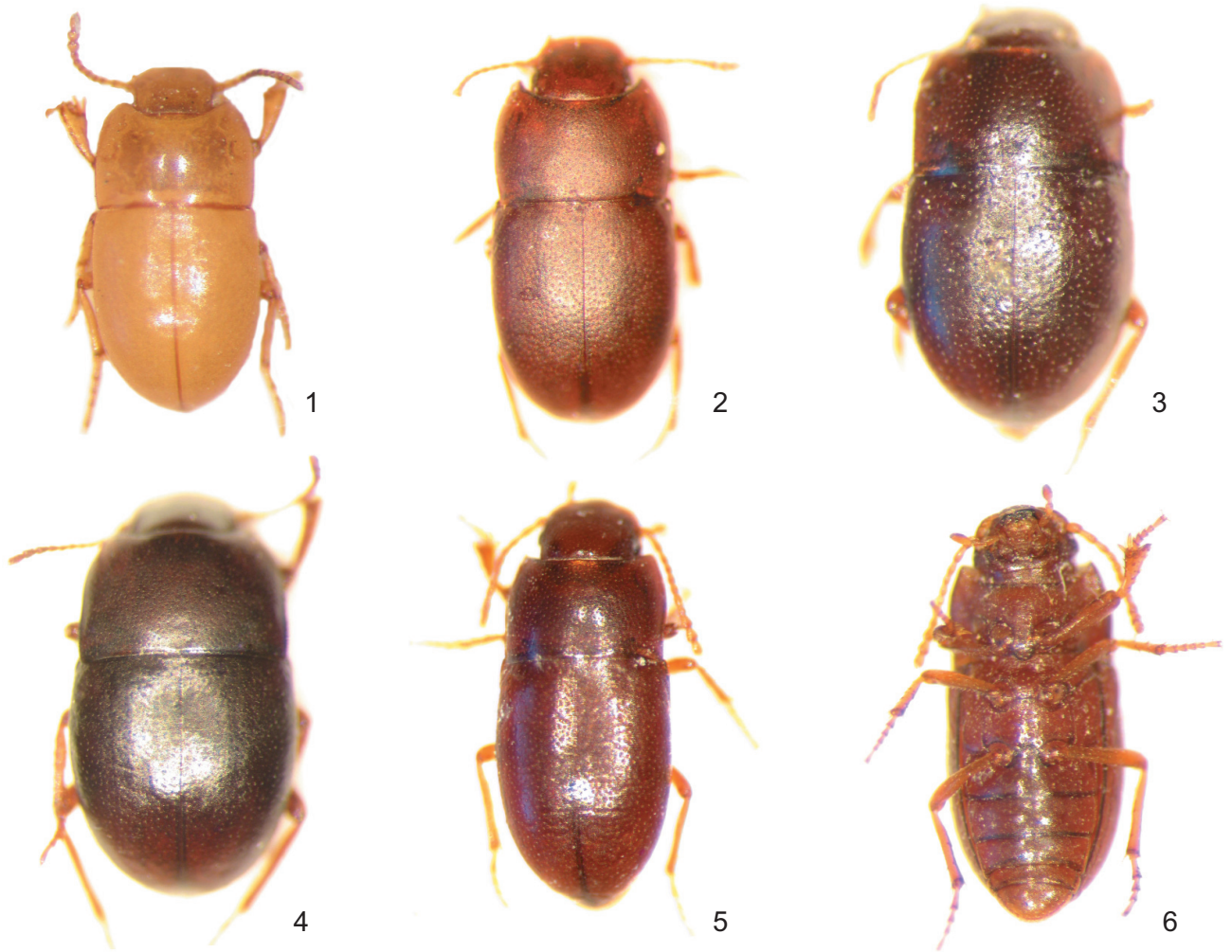
Figures 1–6. Habitus. (1) *Caenocrypticoides loksai* Kaszab; (2) *C. translucidus* Kaszab; (3) *C. penai* Kaszab; (4) *C. peruanus* Endrödy-Younga; (5–6) *C. triplehorni* sp. nov., dorsal and ventral views.

to share the habitat with other tenebrionid species such as *Epipedonota senex* (Lacordaire), *Nyctelia plicatipennis* (Lacordaire), *Scelidospecta lobata* (Burmeister) (Nycteliini), *Platyholmus uspallatensis* Fairmaire, and *Praocis* (*Orthogonoderus*) *soror* Kulzer (Praocini).

Types. Holotype, male: Argentina, Mendoza, Las Heras Department, Araucarias de Darwin, Sierra de Uspallata, 2730 m, 32°28'S, 69°09' W, 27.IX.2003, G. Flores coll. [*Caenocrypticoides* n.sp./HOLOTYPUS male/ Det. G. Flores and/J. Pizarro-Araya 2004] (IADIZA). Allotype, female (IADIZA) and four paratypes having the same data as holotype (1 male, 1 female LEULS, 1 female MACN, 1 female HNHM). Three paratypes: Argentina, Mendoza, Uspallata, Punta de Vacas, 2400 m, 12.XII.1998, coll. P. Vidal G.H. (1 male, 1 female PVGH, 1 female MNNC).

The most recent key for the genus *Caenocrypticoides* by Endrödy-Younga (1996) should be modified at couplet 6 to key out *Caenocrypticoides triplehorni*:

5 (6). Humeral angle of elytra evenly and smoothly rounded. Punctation of dorsal surfaces inconspicuous. Lateral deflection of elytra narrowly rounded in caudal view. Antennomere 10 as broad as long, cup-shaped. Length 2.0 mm . . . . *C. loksai* Kaszab

6 (5). Humeral angle of elytra rough. Punctation of dorsal surfaces conspicuous. Lateral deflection of elytra broadly rounded in caudal view. Antennomere 10 broader than long, triangular. Length 2.5–3.0 mm. **7**

7 (8). Integument with greasy sheen. Antennomere 9 broader than long. Prosternal process short and rounded, forming a weak acute angle in lateral view . . . . *C. translucidus* Kaszab

8 (7). Integument glossy. Antennomere 9 as broad as long. Prosternal process longer and ovate (Figs. 9–10), forming a strong acute angle in lateral view . . . . *C. triplehorni* sp. nov.
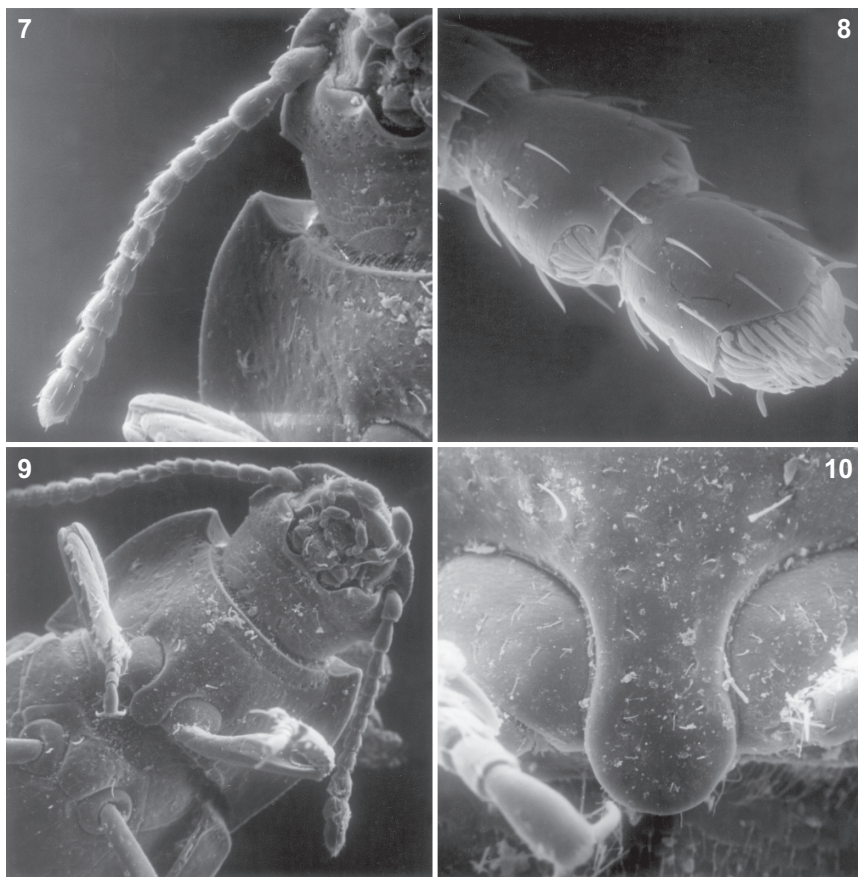
Figures 7–10. *Caenocrypticoides triplehorni* sp. nov. (7) Left antenna, ventral view; (8) antennomeres 10–11; (9) prothorax, ventral view; (10) prosternal process.

Cladistic Analysis of *Caenocrypticoides*

Methods

Outgroups. Character polarity was determined by the outgroup comparison method (Nixon and Carpenter 1993). Outgroups were used to provide a root for the cladogram and to test the monophyly of *Caenocrypticoides*, not to explore the sister group relationships of *Caenocrypticoides*. The outgroups chosen within Caenocrypticini were four of the six subgenera of *Caenocrypticus*: *Phyloradyx* Endrödy-Younga, *Cryptocarpes*, *Caenocrypticus* and *Vernayella*. The present analysis was based on nine terminal units: five species of *Caenocrypticoides* plus the following outgroup species of *Caenocrypticus*: *C.* (*Phyloradyx*) *soror* Endrödy-Younga (type species), *C.* (*Cryptocarpes*) *elongatus* Koch (type species), *C.* (*Caenocrypticus*) *uncinatus* Gebien (type species) and *C.* (*Vernayella*) *noctivagus* Koch (type species).

Characters. The 19 characters used were features of external morphology (Appendix 1). The distribution of states among the terminal taxa is indicated in the

data matrix (Appendix 2). Multistate characters 8 and 13 were treated as non-additive.

Procedure. The data matrix (Appendix 2) was analyzed with the computer programs Hennig86 (Farris 1988) and NONA version 2.0 (Goloboff 1993). In the case of Hennig86 the implicit enumeration (ie) option was used, and with NONA the command sequence hold 200, mult* 20, and max* was used. Clados version 1.8.1 (Nixon 1993) was employed to examine the character distribution and print the cladogram.

Results

The results of analyses (topology, L, CI, RI) of the data matrix (Appendix 2) with both programs did not differ and produced one most parsimonious cladogram (Fig. 12) 32 steps long, with a consistency index (CI) of 0.65 and a retention index (RI) of 0.71. Excluding autapomorphies (characters 1, 2 and 7) the consistency index (CI) is 0.62. The monophyly of *Caenocrypticoides* is established by four unambiguous synapomorphies (Fig. 12): epipleuron broadened on anterior quarter (12.1), metacoxa moderately transverse (14.1), first mesotarsal segment only slightly larger than second (18.1) and sexual dimorphism: profemora of male with nipple-shaped area in ventral surface (19.1), unique to *Caenocrypticoides* within Caenocrypticini. The species of *Caenocrypticoides* are grouped in two clades (Fig. 12), the first includes two species from coastal Peru and is supported by the synapomorphy pronotum widest at anterior third (8.1). The second clade includes the remaining three species of *Caenocrypticoides* from northern Chile and western Argentina, supported by the synapomorphy ventral portion of eye entirely covered by postgena (4.1).

Discussion

The discovery of this new species in western Argentina east of the Andean range at least 1,000 km south of the nearest distribution point of other species of *Caenocrypticoides* (*C. translucidus*) (Fig. 11) was totally unexpected. The collecting site, Araucarias de Darwin, is on the old international road linking Mendoza and Chile, used between the XVI and XIX centuries (Bárcena
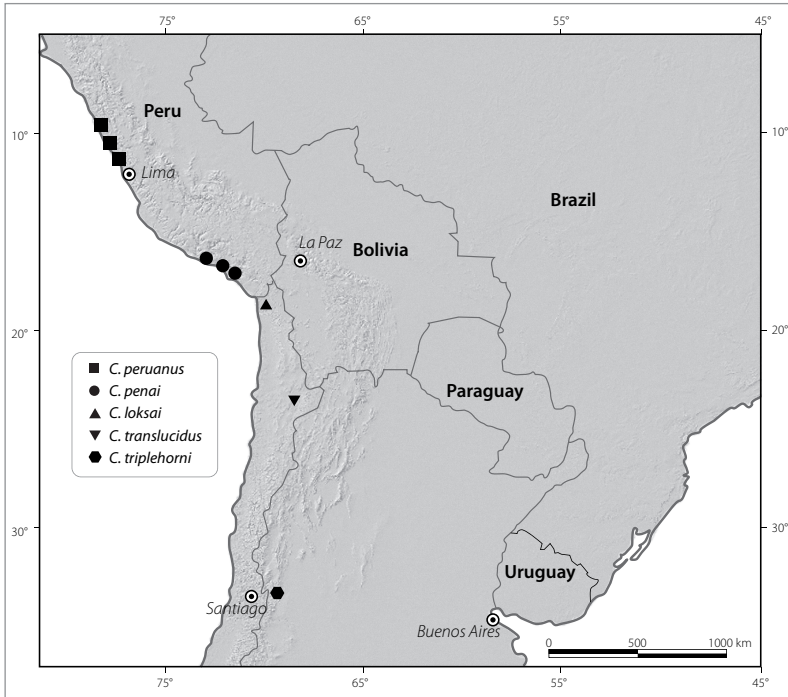
Figure 11. Geographical distribution of species of *Caenocrypticoides*.

1998), and was searched by early entomologists such as Lacordaire (1830) and Darwin (1845), the latter finding at the side of the road the fossil trunks of *Araucaria* Jusseus (Araucariaceae) from the Triassic period which are named after him. Before the discovery of this new species in 2003, the area had been searched for years by the team of entomologists of Laboratorio de Entomología, Instituto Argentino de Investigaciones de las Zonas Áridas.

Figure 12. Cladogram showing relationships of species of *Caenocrypticoides*. Black squares: non-homoplasious apomorphies; dotted squares: homoplasies. *C.* = *Caenocrypticus*; *Ca.* = *Caenocrypticoides*.

Araucarias de Darwin is located at 2730 m, in the eastern Uspallata Valley, on the western slope of the high Precordillera range, in the biogeographical province of Puna (Roig and Martínez Carretero 1998). A later examination of Pedro Vidal's private collection led to the discovery of more specimens belonging to this new species, collected in Punta de Vacas at 2400 msl, west of the Uspallata Valley, on the eastern slope of the Andes, in the Altoandean biogeographical province (Martínez Carretero 2000). Thus, the known distribution of this new species is disjunct, there being no records for the lower part (1900–2200 msl) of the high altitude longitudinal Uspallata valley, which is a small area of endemism of the Monte desert biogeographical province (Roig-Juñent et al. 2001) and one of the most arid lands in Argentina (Roig and Martínez Carretero 1998). In the known distribution area of *Caenocrypticoides triplehorni* (northwest of Mendoza Province, Argentina), there are two N–S mountain ranges: the Andes Cordillera and, east of it, the Precordillera, separated 50 to 100 km from each other by the lengthy, narrow tectonic depression of the longitudinal Uspallata-Calingasta-Iglesia valley (Roig and Martínez Carretero 1998). The Cordillera stretches along the Pacific coast of South America from Venezuela down south to Tierra del Fuego, reaching its maximum altitude in Mt. Aconcagua (6959 m) located in the northwest of Mendoza. The Precordillera extends for about 450 km along the west of Argentina, from 28° to 33°S (Roig and Martínez Carretero 1998), with variable width, but not exceeding 100 km, with maximum altitudes between 3000 m in Paramillos de Uspallata (Mendoza) and up to 4900 m in Sierra de Punilla (La Rioja). A cladistic biogeographic analysis of the areas of endemism of the Precordillera (Roig-Juñent et al. 2003) using analysis of paralogy-free subtrees (Nelson and Ladiges 1996) showed that the different areas that make up the Precordillera (Central Monte, Uspallata-Calingasta Monte and Cuyoan Puna) are more closely related to Patagonia, Monte and Chaco. In this analysis, high altitude epigean arthropods (Cuyoan Puna) showed no relationships with those of other high altitude areas (i.e. the Jujuyan and Bolivian Puna, Altoandean or other extra-Andean mountainous systems such as Sierras Pampeanas (Roig-Juñent et al. 2003)). The lack of connection for some taxa with the fauna of the Andes Cordillera, considering that the Uspallata-Calingasta valley that separates it from the Precordillera is only 50 km wide is of note. Genera of Tenebrionidae and scorpions endemic to the Andes Cordillera, such as *Falsopraocis* Kulzer and *Orobothriurus* Maury, are absent at the same latitude in the Precordillera (Flores 2000, Ochoa 2004). Vegetation studies made by
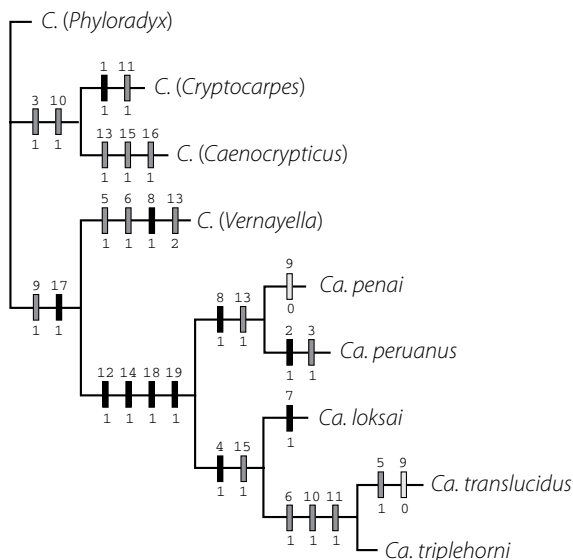
Roig and Martínez Carretero (1998) also highlighted the very few floristic relationships between the Precordillera and the Cordillera despite their nearness. Nonetheless, this new species of *Caenocrypticoides* is present in both ranges (Fig. 11), showing a different distributional pattern from that of the taxa analyzed by Roig-Juñent et al. (2003) as well as a relationship between both mountain ranges, which indicates that this species could be older than the uplift of Precordillera and Cordillera.

The area of origin of the tribe has been postulated to have been in the western part of the present Namibia (Africa) and have extended into parts of adjacent South America before it broke away (100–80 mya) (Endrödy-Younga 1996). This assumed center of origin was within the landlocked central parts of Gondwanaland. The present vicariant distribution of the tribe suggests a period of dispersal at a time when the two continents had not yet separated and implies a historical contact between both ancestral stocks, prior to the elevation of the Andean mountains (Endrödy-Younga 1996). The discovery of the new species described here, the first record for the genus to the east of the Andean mountains, supports this hypothesis, assuming that the ancestral stock of *Caenocrypticoides* is older than the uplift of the Andes. The greatest phase of the Andean orogeny (Quechua) took place during the Middle Miocene (14–11 mya), resulting in the Andean mountain uplift (reaching up to 2000 or 3000 m). This uplift acted as a vicariant event separating widespread populations east and west (Roig-Juñent and Flores 2001), such as the ancestral stock of other tenebrionid genera i.e. *Callyntra* Solier plus *Epipedonota* Solier (Flores and Vidal 2000, Flores and Roig-Juñent 2001).

Caenocrypticoides triplehorni was found under stones at altitudes between 2400 and 2730 m, contrasting with most of the remaining species of the tribe that live in low altitude areas close to the western oceanic coasts where cold Antarctic streams originate and maintain arid coastal conditions (Endrödy-Younga 1996). In South America, *Caenocrypticoides* is a relict genus that includes five species, two (*C. penai* and *C. peruanus*) distributed along the central-southern Peru coast (Endrödy-Younga 1996) (Fig. 11) and the remaining three not related to the Pacific coast (Fig. 11). Kaszab (1969) described *C. translucidus* on the basis of only one specimen labelled as "Chili". Endrödy-Younga (1996) examined three additional specimens from Tumbres, a high mountain locality in Antofagasta, 4000 msl, northern Chile, and stated that the place could not be traced and the record required confirmation. In this study we have examined another specimen of *C. translucidus* collected by L.E. Peña in Talabre, 3580 m, February 1992. We confirmed that this species inhabits at high altitude, and that the Tumbres locality does exist, being located in II Region of Chile, 23°19´S, 67°47´W, 3843 msl, 4 km east of Talabre (Fig. 11). *C. translucidus* inhabits the Gajardo´s (1994) xeric vegetational formation called Pre-Puna shrubbery steppe. For *C. loksai*,

Kaszab (personal communication to Endrödy-Younga) stated that the specimens were collected near Azapa, 25 km west of Arica, near the foothills of the Andes (Endrödy-Younga 1996). The original description indicates: Chile, Prov. Tarapacá, Azapa, on riverside of Rio Lauca, 18.xi.1965, leg. Loksa (Kaszab 1969 and our examination of the holotype). The Azapa valley is located in I Region of Chile, 18°33´S, 70°07´W, 450 msl, 25 km east of the Pacific coast (Fig. 11), to the east of the Cordillera de la Costa mountain range, which is older than the Andes mountains. *C. loksai* inhabits the Gajardo´s (1994) xeric vegetational formation called interior desert.

Sexual dimorphism for the genus is reported here for the first time: profemora of male having a nipple-shaped area in the midline between ventral and anterior faces. We examined all the specimens (including types) housed at HNHM (the only known collection housing all species of *Caenocrypticoides*) and confirmed that this feature is present in all species in the genus. On the basis of this character, we sexed all of the specimens housed at HNHM (Appendix 3). Within Caenocrypticini, sexual dimorphism was also reported by Endrödy-Younga (1996) for two of the six subgenera of *Caenocrypticus*: *C.* (*Caenocapicus*) Endrödy-Younga, 1996 and *C.* (*Caenocrypticus*). In *C.* (*Caenocapicus*) the protibia in males has the inner margin inwardly arcuate and the inner apical angle is more distinctly lobiform (Endrödy-Younga 1996: Fig. 9 D, E), while in *C.* (*Caenocrypticus*), the apical third of inner margin is strongly curved inward in males, less so in females, resulting in apical dilation of the tibia (Endrödy-Younga 1996: Figs. 14 D–E; 18 A–D).

Acknowledgments

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Appendix 1 Characters and character states used in the cladistic analysis of *Caenocrypticoides*

Characters	Character states
1. Eye	Not divided (0) (Endrödy-Younga 1996: Plate 11 D); partially divided (Endrödy-Younga 1996: Plate 9 A) (1).
2. Lateral profile of eye	Not contracted behind (0); slightly contracted towards base (1).
3. Postgenal margin	Blended smoothly (Endrödy-Younga 1996: Plate 10 D) (0); forming a small, laterally exposed protuberance (Endrödy-Younga 1996: Plate 10 C) (1).
4. Ventral portion of eye	Exposed ventrally (0); not exposed and entirely covered by postgena (1)
5. Antennomere 9	As broad as long (0); broader than long (1).
6. Antennomere 10	As broad as long, cup shaped (0); broader than long, triangular (1).
7. Punctation of dorsal surfaces	Conspicuous (0); inconspicuous (1).
8. Pronotum widest	At mid point (Fig. 5) (0); at anterior third (Endrödy-Younga 1996: Plate 4 B) (1); at posterior third (Endrödy-Younga 1996: Plate 2 D) (2).
9. Prosternal apophysis	Short and rounded (Endrödy-Younga 1996: Plate 5 D) (0); longer and ovate (Figs 9–10) (1).
10. Humeral angle of elytra	Rounded (0); rough (1).
11. Lateral deflection of elytra	Smoothly rounded (0); broadly rounded (1).
12. Epipleuron	Equal width throughout (Endrödy-Younga 1996: Plate 5 A) (0); broadened on anterior quarter (Endrödy-Younga 1996: Plate 5 D) (1).
13. Mesocoxal separation	Closer than distance to metacoxa (0); equal to distance to metacoxa (1); more widely separated than distance to metacoxa (Endrödy-Younga 1996: Plate 5 C) (2).

14. Metacoxa	Strongly transverse (Endrödy-Younga 1996: Plate 5 A) (0); moderately transverse (Endrödy-Younga 1996: Plate 5 D) (1).
15. Protibia	Moderately dilated (0); strongly dilated (1).
16. Protibia	Straight (0); curved (1).
17. Protibia	Without apicolateral process (0); with apicolateral process (1).
18. First mesotarsal segment	At least twice as long a second segment (Endrödy-Younga 1996: Plate 5 C) (0); only slightly larger than second segment (Endrödy-Younga 1996: Plate 4 A) (1).
19. Sexual dimorphism	Profemora of male smooth (0); profemora of male with a nipple-shaped area in ventral surface (1).

Appendix 2 Data matrix of species of *Caenocrypticoides* (plus the outgroups *Caenocrypticus* (*Phyloradyx*), *C.* (*Cryptocarpes*), *C.* (*Caenocrypticus*) and *C.* (*Vernayella*)). 0–2 = character states. *C.* = *Caenocrypticus*; *Ca.* = *Caenocrypticoides*. There is no necessary relationship between the numerical code "0" and being primitive. The most distant outgroup was coded all "0" for convenience only

Taxa	Characters
	1 111111111
	1234567890 123456789
C. (*Phyloradyx*)	0000000000 000000000
C. (*Cryptocarpes*)	1010000001 100000000
C. (*Caenocrypticus*)	0010000001 001011000
C. (*Vernayella*)	0000110210 002000100
Ca. penai	0000000100 011101111
Ca. peruanus	0110000110 011101111
Ca. loksai	0001001010 010110111
Ca. translucidus	0001110001 110111111

Appendix 3 Specimens examined of *Caenocrypticoides* housed at HNHM (Hungarian Natural History Museum, Budapest, Hungary)

Caenocrypticoides loksai Kaszab, 1969. Holotypus: [Hungarian Soil-Zool. Exp./ Chile: Prov. Tarapacá/ Azapa, on riverside of/ Rio Lauca, 18.XI.1965] [Nr. P-B 128-2/ leg. Loksa] [Holotypus 1969/ *Caenocrypticoides/ loksai/* Kaszab] [Sex: male/ Det. G. Flores and/ J. Pizarro-Araya 2004].

Caenocrypticoides penai Kaszab, 1969. Holotypus: [S Huarmey/ Peru/ 13.II.1965/ Coll. L. E. Peña] [Holotypus 1969/ *Caenocrypticoides/ penai/* Kaszab] [Sex: male/ Det. G. Flores and/ J. Pizarro-Araya 2004]. One paratype having the same data as holotype: [Sex: male/ Det. G. Flores and/ J. Pizarro-Araya 2004]. One specimen having the same data as holotype: [*penai* Kaszab/ det. Kaszab] [*Caenocrypticoides/ penai* Kaszab/ det. Endrödy-Younga] [Sex: male/ Det. G. Flores and/ J. Pizarro-Araya 2004]. One specimen: [Peru/ 220 km N/ Lima, 10.VII.1965/ Coll. L. E. Peña] [*penai* Kaszab/ det. Kaszab] [*Caenocrypticoides/ penai* Kaszab/ det. Endrödy-Younga] [Sex: male/ Det. G. Flores and/ J. Pizarro-Araya 2004].

Caenocrypticoides peruanus Endrödy-Younga, 1996. One paratype: [Peru/ Mollendo/ Loma Verde/ 19.XI.1950] [Michelbacher & Ross Colectors] [Paratypus/ *Caenocrypticoides/ peruanus* sp. n./ Endrödy-Younga] [Sex: male/ Det. G. Flores and/ J. Pizarro-Araya 2004]. Two paratypes both as: [Peru, 16 km S/ Rio Tambo/ 9.II.1965, Peña] [Paratypus/ *Caenocrypticoides/ peruanus* sp. n./ Endrödy-Younga] [Sex: male/ Det. G. Flores and/ J. Pizarro-Araya 2004].

Caenocrypticoides translucidus Kaszab, 1969. Holotypus: [Chili/ Coll. R. Oberthür/ ex. Coll. Deyrolle] [Holotypus 1969/ *Caenocrypticoides/ translucidus/* Kaszab] [Sex: female/ Det. G. Flores and/ J. Pizarro-Araya 2004]. One specimen: [Tumbre/ Cord. Antofagasta/ 4000 m] [8.XII.1965/ coll. L. E. Peña] [*translucidus* Kaszab/ det. Kaszab] [*Caenocrypticoides/ translucidus* Kaszab/ det. Endrödy-Younga] [Sex: male/ Det. G. Flores and/ J. Pizarro-Araya 2004].