A new species of *Dercylus* (*Licinodercylus*) Kuntzen, 1912 from Peruvian Andes (Coleoptera: Carabidae: Dercylini)

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Abstract. A new species of carabid beetle, *Dercylus* (*Licinodercylus*) *catequili* sp. nov. is described and illustrated on the basis of specimens collected in northern Peruvian Andes (Cajamarca, Peru). From the morphological characters observed, the species should be placed in the *gaujoni* species group.

INTRODUCTION

The genus *Dercylus* Castelnau, 1832 includes between 34 and 36 species recorded from Mexico, Colombia, Venezuela, French Guiana, Surinam, Ecuador, Peru, Brazil, Bolivia and Paraguay, according to different bibliographic sources (Reichardt 1977, Martínez 2005). Four subgenera are currently recognized for this genus following the most recent works aimed at revisions (Moret & Bousquet 1995): *Asporina* Castelnau, 1835 (two species), *Dercylus* s. str. (12 species), *Eurydercylus* Moret & Bousquet, 1995 (six species) and *Licinodercylus* Kuntzen, 1912 (14 species). The subgenus *Licinodercylus* is found in Andean environments of Colombia, Ecuador and Peru, while other subgenera occupy large areas of the Neotropics, with a higher concentration of species in the west of the Amazon basin (Moret 2005).

According to a recent checklist for Peruvian carabid fauna (Erwin et al. 2015), only four species have been recorded from this country so far, namely: *Dercylus* (*Dercylus*) *buckleyi* (Chaudoir, 1882), *Dercylus* (*Licinodercylus*) *catenatus* Kuntzen, 1912, *Dercylus* (*Dercylus*) *heynei* (Kuntzen, 1912) and *Dercylus* (*Licinodercylus*) *mathani* Moret, 1995.

In the present study, a new species of *Dercylus* (*Licinodercylus*) is described based on specimens recently collected in northern Peruvian Andes. The placement of the species in currently established species groups is also suggested from morphological evidence.

MATERIAL AND METHODS

Morphological terms of the description follow most recent revisions concerning the genus *Dercylus* (Moret & Bousquet 1995). Comparisons with other species were also based on original descriptions and images presented in that revision.

Type specimens are housed at entomological collections of Museo de Entomología Klaus Raven Büller, Universidad Nacional Agraria La Molina, Lima, Peru (MEKRB) and Museo de Historia Natural Javier Prado, Universidad Nacional de San Marcos (MUSM).

Holotype was photographed with a Canon© EOS Rebel T5i DSLR, equipped with macro lens. Photos were edited using Combine ZP (Hadley 2006) and Adobe Photoshop software. Parameres were extracted, treated for 10 minutes in 20% KOH, washed with distilled water and attached to a small piece of cardboard. Drawings were done by the prints of photographs, observations with stereomicroscope and digital improving with Inkscape software. Distribution map was elaborated using SimpleMappr (Shorthouse 2010).

TAXONOMY

Dercylus (*Licinodercylus*) *catequili* sp. nov.

(Figs. 1-7)

Type locality. PERU, Cajamarca dep., Hualgayoc prov., Cerro Coymolache.

Type material. Holotype Holotype (♂): PERU, Cajamarca, Hualgayoc, Hualgayoc, Cerro Coymolache, 06°46'45.52"S, 78°36'57.97"W, 3500 m, Puna grassland, pitfalltraps, XI-2014, R. Sánchez coll. (MEKRB). Paratypes (28 ♂♂, 20 ♀♀): (6 ♂♂, 6 ♀♀): same data as for holotype (MEKRB); (1 ♀): PERU, Cajamarca, Cajamarca, 06°58'03"S, 78°18'40"W, 3888 m, 16-IV-2010, C. Espinoza coll. (MUSM); (2 ♂♂): PERU, Cajamarca, Cajamarca, La Encañada, El Punre, 06°59'27"S, 78°16'33"W, 3810 m, 11-12-IV-2009, L. Huerto coll. (MUSM); (5 ♂♂, 2 ♀♀): PERU, Cajamarca, Cajamarca, La Encañada, El Punre, 06°59'28"S, 78°17'17"W, 3652 m, 11-12-IV-2009, L. Huerto coll. (MUSM); (1 ♂): PERU, Cajamarca, Cajamarca, La Encañada, El Punre, 06°59'40.38"S, 78°16'38.61"W, 3338 m, 03-VIII-2009, L. Huerto coll. (MUSM); (3 ♀♀): PERU, Cajamarca, Cajamarca, La Encañada, El Punre, 06°59'47"S, 78°16'33"W, 3545 m, 12-IV-2010, C. Espinoza coll. (MUSM); (1 ♂): PERU, Cajamarca, Cajamarca, La Encañada, Hierba Buena Alta, 06°57'54.27"S, 78°20'43.41"W, 3760 m, 07-09-IX-2010, C. Carranza coll. (MUSM); (1 ♂): PERU, Cajamarca, Cajamarca, La Encañada, Laguna Chica, 06°56'23.82"S, 78°19'38.16"W, 3660 m, 12-13-IX-2010, C. Carranza coll. (MUSM); (1 ♂): PERU, Cajamarca, Cajamarca, La Encañada, Laguna Papahuay, 06°57'02.24"S, 78°20'47.12"W, 3946 m, 13-14-IX-2010, C. Carranza coll. (MUSM); (2 ♂♂, 1 ♀): PERU, Cajamarca, Cajamarca, La Encañada, Mina Yanacocha, 06°58'48.08"S, 78°33'57.22"W, 3499 m, revegetated area, G. Sarabia coll. (MUSM); (1 ♀): PERU, Cajamarca, Cajamarca, Namora, 07°09'43.02"S, 78°14'33.56"W, 3600 m, scrubland, carrion-baited pitfall trap, III-2012, A. Giraldo coll. (MEKRB); (1 ♂): PERU, Cajamarca, Celendin, Sorochuco, Laguna Papacuay, 06°56'51"S, 78°20'56"W, 4038 m, 14-16-IV-2009, L. Huerto coll. (MUSM); (2 ♂♂): PERU, Cajamarca, Chota, San Miguel near to Quebrada Hueco del Inca, 06°51'54.05"S, 78°42'21.63"W, 3394 m, 29-III-2010, C. Espinoza coll. (MUSM); (1 ♂): PERU, Cajamarca, Hualgayoc, 06°45'22.93"S, 78°37'28.45"W, 3875 m, 10-17-III-2017, L. Figueroa coll. (MUSM); (1 ♀): PERU, Cajamarca, Hualgayoc, 06°45'22.93"S, 78°37'28.45"W, 3875 m, 19-26-VII-2018, L. Figueroa coll. (MUSM); (1 ♂): PERU, Cajamarca, Hualgayoc, 06°45'22.93"S, 78°37'28.45"W, 3875 m, 15-20-III-2019, P. Sanchez coll. (MUSM); (1 ♀): PERU, Cajamarca, Hualgaycoc, 06°45'24.08"S, 78°38'24.56"W, 3668m, 15-20-III-2019, P. Sanchez coll. (MUSM); (1 ♀): PERU, Cajamarca, Hualgayoc, 06°45'31.05"S, 78°37'19.85"W, 3997 m, 15-20-III-2019, P. Sanchez coll. (MUSM); (1 ♂): PERU, Cajamarca, Hualgayoc, 06°45'34.55"S, 78°36'49.66"W, 3705 m, 19-26-VII-2018, L. Figueroa coll. (MUSM); (2 ♀♀): PERU, Cajamarca, Hualgayoc, 06°45'42.15"S, 78°38'54.39"W, 3756 m, 10-17-III-2017, L. Figueroa coll. (MUSM); (1 ♀): PERU, Cajamarca, Hualgayoc, 06°46'14.74"S, 78°37'30.45"W, 3851 m, 07-14-IX-2017, L. Figueroa coll. (MUSM); (1 ♂): PERU, Cajamarca, Hualgayoc, 06°46'49.24"S, 78°37'50.49"W, 3831 m, 19-26-VII-2018, L. Figueroa coll. (MUSM); (1 ♂): PERU, Cajamarca, Hualgayoc, 06°46'49.24"S, 78°37'50.49"W, 3831 m, 15-20-III-2019, P. Sanchez coll. (MUSM); (1 ♂): PERU, Cajamarca, Hualgayoc, 06°46'55.48"S, 78°37'45.29"W, 3805 m, XII-2020, E. Delgado coll. (MUSM).

Description. 13.0-15.0 mm. Habitus (Fig. 1). Body shiny black, with reddish brown antennae and mouth parts. Pronotal surface with shallow transversal microsculpture. Elytral surface with noticeable isodiametric microsculpture.

Head. Moderate sized, with collar constriction barely insinuated. Mandibles smooth on apical half of upper surface, striate-rugulose on basal half. Labrum with six setae on anterior margin. Antennae not surpassing pronotal base, apical antennomeres hardly attaining pronotal posterior angles.

Pronotum. Transverse, with base wider than apex, its greatest width at middle (ratio width: length = 1.38) (Fig. 2). Lateral margins evenly curved, wholly beaded; posterior angles obtuse and blunt. Frontal margin with shallow indentation, wholly beaded, concave with anterior angles obtuse, protruding and directed forward. Basal margin almost devoid of indentation, not beaded. Two pairs of lateral setae located at anterior half and posterior angles. Midline well marked across disc length. Basal foveae deep, long, almost rectilinear. Prosternal process obtuse in lateral view.

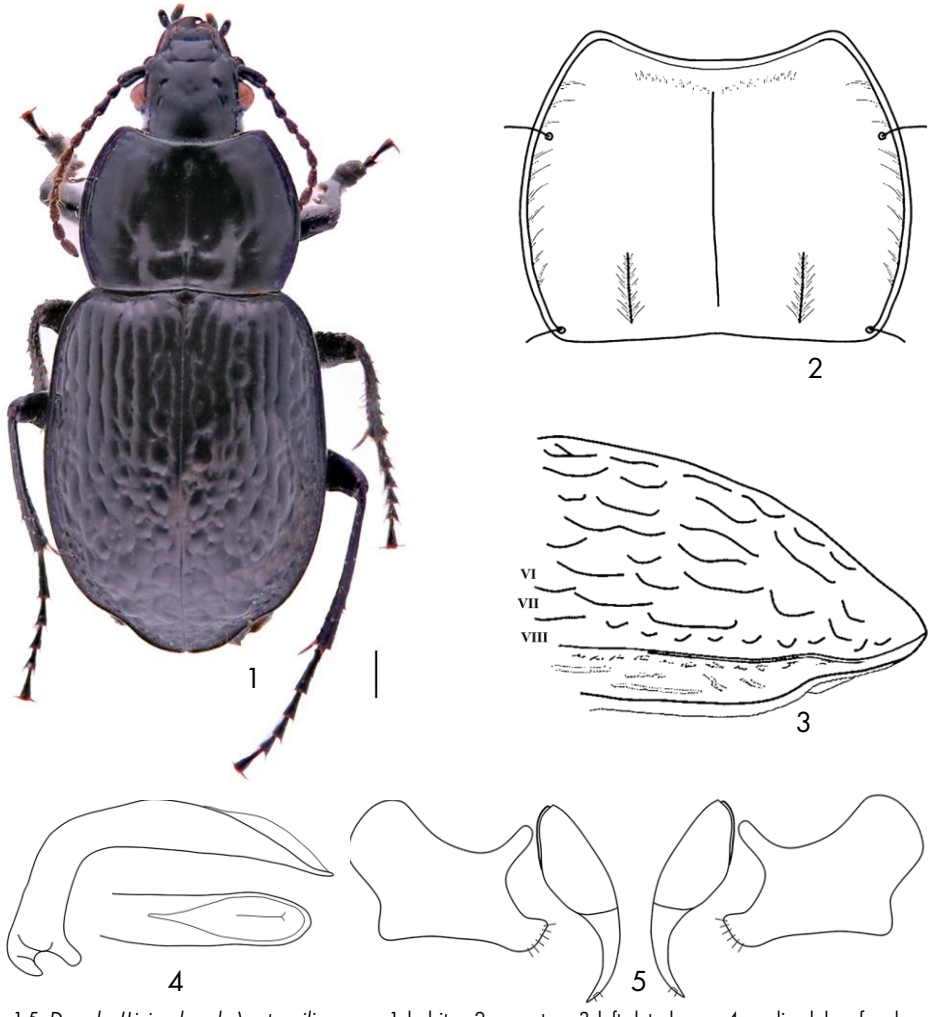
Elytra. Ovoid, convex, with rounded humeri. Second to six interstriae convex, smooth and entire in basal half of elytra, although these can be more or less catenulated according to specimen examined. Interstriae catenulated in apical half of elytra, these tend to be carinated, to break into

chains of nodules and to merge in apical third. Eighth interstriae carinated before elytral apex (Fig. 3). Juxtascutellar pore absent.

Legs. Dorsal surface of metatibia smooth and convex. Onychium glabrous.

Male genitalia (Fig. 4). Aedeagus with median lobe bent at a pronounced angle of almost 90 °; apical blade rectilinear, basally constricted, apically enlarged resembling a spoon.

Female genitalia (Fig. 5). Ovipositor with valvifer subequal in size compared to stylomeres 1 and 2 combined; stylomere 2 with external side markedly curved and ending in a point.



Figs. 1-5. *Dercylus* (*Licinodercylus*) *catequili* sp. nov.: 1- habitus; 2- pronotum; 3- left elytral apex; 4- median lobe of aedeagus, left lateral view and dorsal view of apex; 5- ovipositor, ventral view. Scale bar = 1 mm. Roman numerals refer to elytral interstriae.

Sexual dimorphism and variability. Males with first to third protarsomeres widened and ventrally covered with adhesive setae. Females with elytra more convex and rounded.

Catenulation of interstriae on elytral basal half is evident to varying degrees in examined specimens. Also, isodiametric microsculpture on elytral surface can be more or less noticeable.

Differential diagnosis. According to classification proposed by Moret & Bousquet (1995), *D.* (*L.*) *catequili* should be placed in the gaujoni species group because of following combination of characters: mandibles lacking striation on apical half of upper surface, lateral bead of pronotum reaching posterior angles, prosternal process obtuse, catenulated striae on elytral disc, eighth interstriae widened and apically carinated, metatibia with dorsal surface smooth, onychium glabrous and aedeagus clearly bent.
The new species is morphologically closer to *D.* (*L.*) *granifer* Moret, 1995, but is clearly distinguishable by its collar constriction barely insinuated, antennae not surpassing pronotal base, pronotum with maximum width at middle, catenulation of interstriae more spread on basal half of elytra, aedeagus bent almost at a right angle and ovipositor with stylomere 2 ending in a point.

Etymology. The specific name refers to the pre-Hispanic deity Catequil, whose attributes are thunder, lightning and predictions, and was worshiped mainly in the Peruvian northern Andes.

Distribution and habitat. Currently, the new species is known from a sort of localities at Cajamarca, Celendin, Chota and Hualgayoc provinces in northern Peruvian Andes. The records available for *D.* (*L.*) *catequili* are arranged in a sequence with those of high Andean species of the *gaujoni* group in southern Ecuador (Fig. 6). In comparison, previously known *Dercylus* (*Licinodercylus*) species in Peru have been recorded from lower altitudes covered with montane forests. Specimens were found in a wide range of plant covers, including Puna grassland with scattered shrubs at Cerro Coymolache, revegetated areas at Mina Yanacocha and shrubland at Namora (Fig. 7), located at different distances to human settlements and under different degrees of grazing pressure. The collections were frequently made with pitfall traps, according to biological habits known for the genus, epigeic predators associated with litter layer that feed on soil larvae (Martínez 2005).

Fig. 6. Distribution map of *Dercylus* (*Licinodercylus*) species in southern Ecuador and northern-central Peru: 1- *D.* (*L.*) *catequili* (red circles); 2- *gaujoni* species group (black circles); 3- *mathani* species group (white triangles); 4- *D.* (*L.*) *catenatus* (white square). Fig. 7. Habitat of *D.* (*L.*) *catequili* at Namora, 3600 m.

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