New species and notes about *Dercylus* (*Licinodercylus*) Kuntzen, 1912 from northern Peru (Coleoptera: Carabidae: Dercylini)

Alfredo Edgardo GIRALDO-MENDOZA

Universidad Nacional Agraria La Molina - Museo de Entomología Klaus Raven Büller,
Av. La Molina s/n, Lima 12, Lima, Perú
e-mail: aegmendoza@gmail.com

Taxonomy, new species, Carabidae, *Licinodercylus*, South America, Peru

Abstract. A new species of carabid beetle, *Dercylus* (*Licinodercylus*) *aterrimus* sp. nov. is described and illustrated on the basis of specimens collected in northern Peruvian Andes (Amazonas, Peru). Also, the male of *Dercylus* (*Licinodercylus*) *nicteae* Giraldo, 2022 is described and illustrated based on a recently collected specimen. Additional distribution records are provided for *Dercylus* (*Licinodercylus*) *catequili* Giraldo, 2021 and *Dercylus* (*Licinodercylus*) *erebus* Giraldo, 2022.

INTRODUCTION

The genus *Dercylus* Castelnau, 1832 includes more than 30 species recorded from Mexico, Colombia, Venezuela, French Guiana, Surinam, Ecuador, Peru, Brazil, Bolivia and Paraguay (Reichardt 1977, Martinez 2005). This genus has been arranged into four subgenera, firstly proposed by Kuntzen (1912) and more recently updated by Moret & Bousquet (1995), being currently recognized the following ones: *Dercylus* s. str., *Asporina* Castelnau, 1835, *Licinodercylus* Kuntzen, 1912 and *Eurydercylus* Moret & Bousquet, 1995.

The subgenus *Licinodercylus* is composed by 18 species distributed in Andean environments of Colombia, Ecuador and Peru (Kuntzen 1912, Moret & Bousquet 1995, Moret 1998, Giraldo-Mendoza 2021, 2022). The five species of *Licinodercylus* currently known from Peruvian territory are: *Dercylus* (*Licinodercylus*) *catenatus* Kuntzen, 1912, *Dercylus* (*Licinodercylus*) *mathani* Moret, 1995, *Dercylus* (*Licinodercylus*) *catequili* Giraldo, 2021, *Dercylus* (*Licinodercylus*) *erebus* Giraldo, 2022 and *Dercylus* (*Licinodercylus*) *nicteae* Giraldo, 2022 (Erwin et al. 2015, Giraldo-Mendoza 2021, 2022).

In the present study, a new species assigned to subgenus *Licinodercylus* is described based on specimens from northern Peru. Also, the male of *D.* (*L.*) *nicteae* is described and additional records for two Peruvian species of subgenus *Licinodercylus* are provided.

MATERIAL AND METHODS

Taxonomic placement of specimens was made using available keys to tribes and genera for Neotropical Carabidae (Reichardt 1977, Martinez 2005), and to subgenera, species groups and species of *Dercylus* (Kuntzen 1912, Moret & Bousquet 1995).

Morphological terms of descriptions follow most recent revision concerning the subgenus *Licinodercylus* (Moret & Bousquet 1995). Comparisons with other species were performed with original descriptions and images presented in those works, as well as specimens housed in Peruvian entomological collections.

The holotype is indicated by red, printed label bearing the status of the specimens, sex, name of species, name of the author, and year of the designation.Type and non-type specimens are housed at entomological collection of Museo de Historia Natural Javier Prado, Universidad Nacional Mayor de San Marcos, Lima, Peru (MUSM).

Specimens were 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 adhered to a small piece of cardboard. Drawings were done by the prints of photographs, observations with stereomicroscope and digital improving with Adobe Photoshop software. Distribution maps were elaborated using Simple Mappr (Shorthouse 2010) and Google Earth Pro.

TAXONOMY

Tribe Dercylini Sloane, 1923

Genus *Dercylus* Castelnau, 1832: 392.

Type species: *Dercylus ater* Castelnau, 1832.

Subgenus *Licinodercylus* Kuntzen, 1912: 586.

Type species: *Dercylus catenatus* Kuntzen, 1912.

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

(Figs. 1-2, 5-6)

Type locality. PERU, Amazonas dep., Bongará province, Shipasbamba.

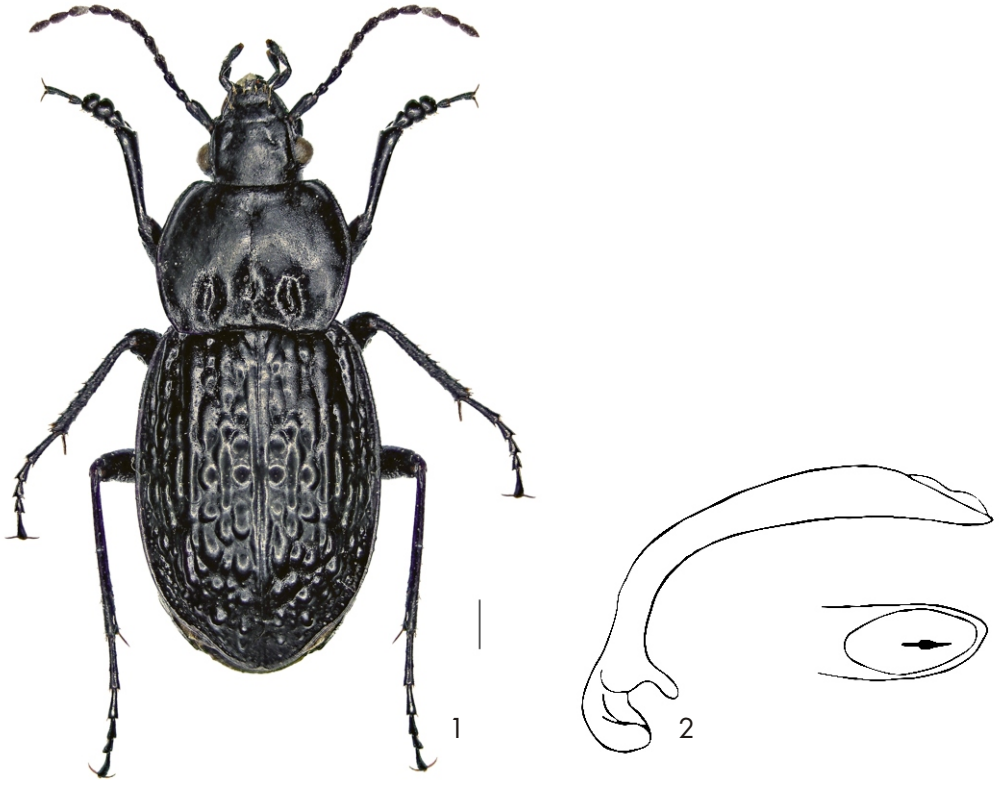
Type material. Holotype (♂): PERU, Amazonas, Bongará, Shipasbamba, 05°51'38.94"S, 78°04'22.04"W, 2317 m, 24-IX-2020, L. Ramirez coll., (MUSM). Paratypes: (3 ♂♂, 1 ♀): same data as for holotype (MUSM); (2 ♂♂): PERU, Amazonas, Bongará, Shipasbamba, 05°51'41.9"S, 78°04'17.54"W, 2439 m, 16-III-2022, N. Zenteno coll. (MUSM); (1 ♀): PERU, Amazonas, Bongará, Shipasbamba, 05°50'42.74"S, 78°03'46.80"W, 2732 m, 01-XII-2018, E. Quispe coll., (MUSM).

Description. 12.0-13.0 mm. Habitus (Fig. 1). Body shiny black,with reddish brown apices on antennomeres, palpomeres, coxae, femora and tibiae. Pronotal and elytral surface with noticeable isodiametric microsculpture.

Head. Moderate sized, with collar constriction barely insinuated. Upper surface of mandibles smooth on apical half, striate-rugulose on basal half. Labrum with six setae on anterior margin. Antennae not surpassing pronotal base, antennomere 11 attaining posterior fourth of pronotum.

Pronotum. Transverse, with base as wide as apex, its greatest width at middle of its length (ratio width: length = 1.37). Lateral margins evenly curved through its entire length, wholly beaded; posterior angles obtuse and rounded. Frontal margin with only traces of indentation, wholly beaded, concave with anterior angles obtuse, protruding and directed forward. Basal margin with shallow indentation, not beaded. Two pairs of lateral setae located at anterior half and posterior angles. Midline well marked across disc length, crossed by two small foveae on anterior and posterior fourths respectively. Basal foveae deep, long, oval. Prosternal process obtuse in lateral view.

Elytra. Elongated oval, slightly flattened, with rounded humera. Second to sixth interstriae convex, smooth and catenulated in basal half of elytra, sometimes only the third, fifth, or both interstriae remain entire. Interstriae nodulose catenulated in apical half of elytra, these tend to be carinated, to break into chains of nodules and to merge in apical third. Eighth interstrie carinated before elytral apex. Yuxtascutellar pore absent.



Figs. 1-2. *Dercylus* (*Licinodercylus*) *aterrimus* sp. nov.: 1- habitus; 2- median lobe of aedeagus, left lateral view and dorsal view of apex. Scale bar = 1 mm.

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

Male genitalia (Fig. 2). Aedeagus with median lobe bent at a pronounced angle of almost 90°; apical blade elongated oval, with almost the same width across its entire length. In lateral view, tip of apical blade is slightly pointed, hardly protruding forwards.

Sexual dimorphism and variability. Males and females do not differ noticeably in size and body shape. Males with first to third protarsomeres widened and ventrally covered with adhesive setae. Elytra with catenulation of interstriae evident to varying degrees in the eight specimens examined. Two male specimens with effaced striae on basal half of elytra.

Differential diagnosis. According to classification proposed by Moret & Bousquet (1995), *D.* (*L.*) *aterrimus* 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 close to *D.* (*L.*) *catequili* and *D.* (*L.*) *erebus*, but it is clearly

distinguishable from both by its smaller body size, sexual dimorphism restricted to protarsomeres, anterior and posterior foveae crossing pronotal midline, shorter basal foveae on pronotum and aedeagus with tip of apical blade slightly pointed, hardly protruding forwards.

Etymology. The specific name is a Latin word meaning "very black".

Distribution and habitat. Currently, the new species is only known from three localities at Bongará province in northern Peru (Fig. 5). Data labels do not provide details about habitat preference for this species. Type localities of *D.* (*L.*) *aterrimus* are located in montane forests east to Marañon river canyon (2300-2700 m), ecologically segregated with respect to *Licinodercylus* species recorded from Cajamarca at higher altitudes (Fig. 6).

Dercylus (*Licinodercylus*) *catequili* Giraldo, 2021

Material examined: In addition to localities of the typical series (Giraldo-Mendoza, 2021), the following are added: (1 ♂): PERU, Cajamarca, San Miguel, La Zanja, 06°46'24.31"S, 78°38'47.6"W, 3967 m, 09-XII-2022, A. Ayala coll. (MUSM); (1 ♀): PERU, Cajamarca, Hualgayoc, 06°46'49.02"S, 78°37'50.83"W, 3831 m, 19-IX-2021, J. Vergara coll. (MUSM); (1 ♀): PERU, Cajamarca, Cajamarca, La Encañada, 06°53'09.79"S, 78°27'59.18"W, 3748 m, pitfall trap, 17-IV-2019, C. Rossi coll. (MUSM); (1 ♀): PERU, Cajamarca, San Miguel, Llapa, 06°54'0.1"S, 78°47'41.2"W, 3560 m, VIII-2023, I. Galindo coll. (MUSM); (1 ♀): PERU, Cajamarca, Cajamarca, Cajamarca, 06°57'58.33"S, 78°32'28.94"W, 3942 m, yellow trap, 30-31-VIII-2022, T. Neyra coll. (MUSM); (1 ♀): PERU, Cajamarca, Cajamarca, Cajamarca, 06°57'59.36"S, 78°33'34.87"W, 3490 m, yellow trap, 25-26-VIII-2022, T. Neyra coll. (MUSM); (1 ♂): PERU, Cajamarca, Cajamarca, Cajamarca, 06°58'0.55"S, 78°30'31.28"W, 4113 m, pitfall trap, 30-31-VIII-2022, T. Neyra coll. (MUSM).

Distribution. Based on label data presented here and on its original description, *D.* (*L.*) *catequili* is a high-andean species recorded from 3338 to 4113 m (median = 3758 m) in Cajamarca, Celendin, Chota, Hualgayoc and San Miguel provinces of Cajamarca (Figs. 5-6).

Dercylus (*Licinodercylus*) *erebus* Giraldo, 2022

Material examined: In addition to type locality (Giraldo-Mendoza, 2022), the following is added: (2 ♀♀): PERU, Cajamarca, Santa Cruz, Pulán, 06°49'44.92"S, 78°54'40.29"W, 3338 m, 10-V-2021, N. Zenteno coll. (MUSM).

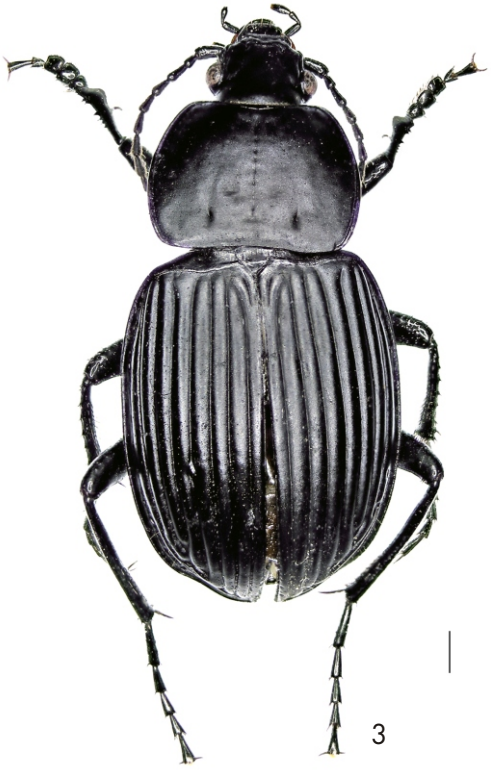
Distribution. Based on label data presented here and on its original description, *D.* (*L.*) *erebus* is a mid-altitude species recorded from two localities at 3311 and 3338 m in Santa Cruz province of Cajamarca (Figs. 5-6).

Dercylus (*Licinodercylus*) *nicteae* Giraldo, 2022
(Figs. 3-6)

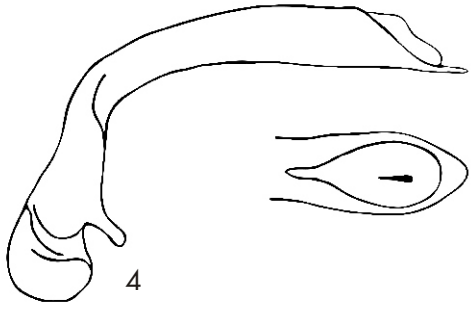
Material examined: In addition to localities of the typical series (Giraldo-Mendoza, 2021), the following is added: (1 ♂): PERU, Cajamarca, Chota, Querocoto, La Iraca, 06°20'59.20''S, 79°07'43.45''W, 1998 m, IV-2021, I. Galindo coll. (MUSM).

Description of male. Habitus (Fig. 3). 14.5 mm. Male specimen does not differ from females in size, body shape and most morphological characters. Elytra with eighth interstriae becoming into rugose longitudinal carinae. Tarsi with first to third protarsomeres widened and ventrally covered with adhesive setae; onychium with three to four pairs of setae.

Male genitalia (Fig. 4). Aedeagus with median lobe bent and constricted at a pronounced angle of almost 90 °; apical blade fusiform, basally constricted and apically rounded. In lateral view, tip of apical blade is conspicuously pointed and protruding forwards.



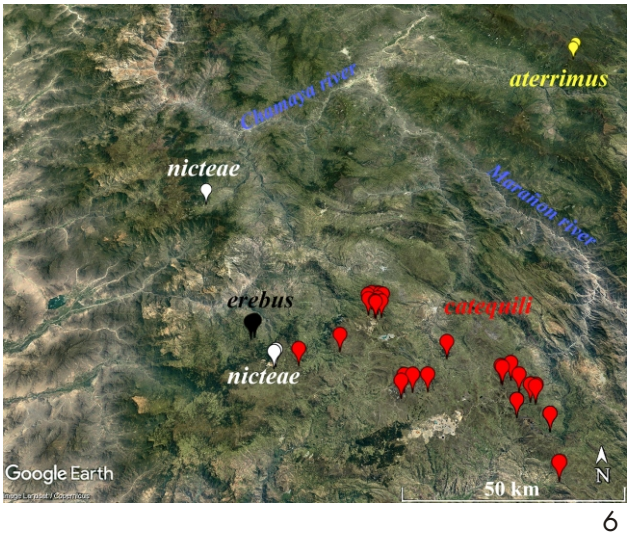
3



4

Figs. 3-4. *Dercylus* (*Licinodercylus*) *nicteae* Giraldo, 2022: 3- male habitus; 4- median lobe of aedeagus, left lateral view and dorsal view of apex. Scale bar = 1 mm.

5



6

Figs. 5-6. Distribution maps: 5- *Dercylus* (*Licinodercylus*) species in Peru; 6- *Dercylus* (*Licinodercylus*) species in northern Peru.

Differental diagnosis. Position of *D.* (*L.*) *nicteae* in the species groups suggested by Moret & Bousquet (1995) for *Licinodercylus* remains uncertain, due to its unusual combination of characters, setose onychium as observed in catenatus and mathani species groups, aedeagus clearly bent as in gaujoni species group, besides the presence of yuxtascutellar pore previously seen in only three species of the subgenus.

Distribution. Based on label data presented here and on its original description, *D.* (*L.*) *nicteae* is a mid-altitude species recorded from three localities at 1998, 3064 and 3663 m in Chota and Santa Cruz provinces of Cajamarca (Figs. 5-6).

ACKNOWLEDGEMENTS. To Mabel Alvarado and Luis Figueroa for facilitate the study of carabid specimens housed in entomological collection of MUSM.

REFERENCES

ERWIN T., MICHELI C. & CHABOO C. 2015: Beetles (Coleoptera) of Peru: A Survey of the Families. Carabidae. *Journal of the Kansas Entomological Society* 88(2): 151-162.

GIRALDO-MENDOZA A. 2021: A new species of *Dercylus* (*Licinodercylus*) Kuntzen, 1912 from Peruvian Andes (Coleoptera: Carabidae: Dercylini). *Folia Heyrovskyana, Series A* 29(2): 21-25.

GIRALDO-MENDOZA A. 2022: New species and records for the genus *Dercylus* Castelnau, 1832 from Peru (Coleoptera: Carabidae: Dercylini). *Folia Heyrovskyana, Series A* 30(1): 1-8.

HADLEY A. 2006: Combine ZM public domain image processing software.
Available from https://combinezp.software.informer.com (accessed 29 September 2024).

KUNTZEN H. 1912: Beiträge zur Kenntnis der Carabiden, I: Die Gattung *Dercylus*. *Deutsche Entomologische Zeitschrift* 1912: 575-588.

MARTINEZ C. 2005: *Introducción a los escarabajos Carabidae (Coleoptera) de Colombia*. Bogotá: Instituto de Investigación de Recursos Biológicos Alexander von Humboldt, 546 pp.

MORET P. 1998: Une nouvelle espéce équatoriene de *Dercylus* (*Licinodercylus*) Kuntzen (Coleoptera, Carabidae). *Nouvelle Revue d'Entomologie (N.S.)* 16(1): 81-82.

MORET P. & BOUSQUET Y. 1995: The subgenus *Dercylus* (*Licinodercylus*) Kuntzen, 1912: Systematic position, revision of the species, and description of the larva (Carabidae, Dercylini). *The Canadian Entomologist* 127: 753-798.

REICHARDT H. 1977: A synopsis of the genera of Neotropical Carabidae (Insecta: Coleoptera). *Quaestiones Entomologicae* 13: 346-493.

SHORTHOUSE D. 2010: Simple Mappr, an online tool to produce publication-quality point maps. Available from http://www.simplemappr.net (accessed: 29 September 2024).

Published: 25. 12. 2024