

Artículos Científicos

A new species of *Suniellus* Breure, 1978 from the Paramo in Northern Ecuador (Mollusca, Gastropoda, Bulimulidae)

Una nueva especie de *Suniellus* Breure, 1978 del páramo del norte de Ecuador (Mollusca, Gastropoda, Bulimulidae)

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Abstract.- We describe a new species of land snail, *Suniellus tufinoensis* sp. nov., from the Northern Andean páramo ecoregion (*Reserva Ecológica El Ángel*), where it occurs in low density in this vulnerable habitat.

Keywords: *Suniellus tufinoensis* sp. nov., new species, Ecuador, Eupulmonata, Orthalicoidea.

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Resumen.- Describimos una nueva especie de caracol terrestre, *Suniellus tufinoensis* sp. nov., de la ecorregión del páramo andino septentrional (*Reserva Ecológica El Ángel*), donde aparece en baja densidad en este hábitat vulnerable.

Palabras clave: *Suniellus tufinoensis* sp. nov., especie nueva, Ecuador, Eupulmonata, Orthalicoidea.

Identificador ZooBank: urn:lsid:zoobank.org:pub:5878AAF7-118B-40DA-8360-ADAEAA66BE25

Introduction

Ecuador is a relatively small country with an extremely biodiverse terrestrial malacofauna (Correoso 2008; Breure et al. 2022). Of most known species only a taxonomic description of the shell is available. However, recent studies have also yielded several species that are new to science (Greke et al. 2023; Roosen 2023; Roosen and Breure 2024; Roosen and Büttner 2024; Roosen and Dorado 2022; Roosen et al. 2023). These species are likely only a fraction of the new species that can be found in Ecuador, as indicated by the number of unidentifiable taxa found in ecological inventories (Ramirez and Hausdorf 2022; Roosen 2019).

In November and December 2024, the first author (MR) examined the collection of the Pontificia Universidad Católica del Ecuador (PUCE) to identify the land snails and locate undescribed species in their collection. During this visit, a new species of *Suniellus* Breure, 1978 was found. It is described in this contribution to science.



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Material and Methods

The specimens were collected in the Northern part of the Carchi province (Ecuador), around El Ángel and Tufiño. Multiple vegetation types are known from this area (Moscol Oliveira and Cleef 2009), including patches of Andean rainforest, but fragments belonging to a *Suniellus* species were found in the paramo community dominated by *Espeletia pycnophylla* J. Cuatrecasas, 1942 (pers. com. Dorado 2024). Therefore, it is most likely associated with the paramo ecosystem.

We obtained the measurements with a digital caliper, accurate to 0.1 mm, as follows: the shell height (H), diameter (D), height of the aperture (HA), width of the aperture (WA) and height of the last whorl (LW); the measurements were taken and the number of whorls (W) were counted as indicated in Figure 1. Two shells were measured, as no more shells are available. The studied material is housed at: MNHN, *Muséum national d'Histoire naturelle*, Paris, France; QCAZI, PUCE, Pontificia Universidad Católica del Ecuador, Zoological collection, Quito, Ecuador.

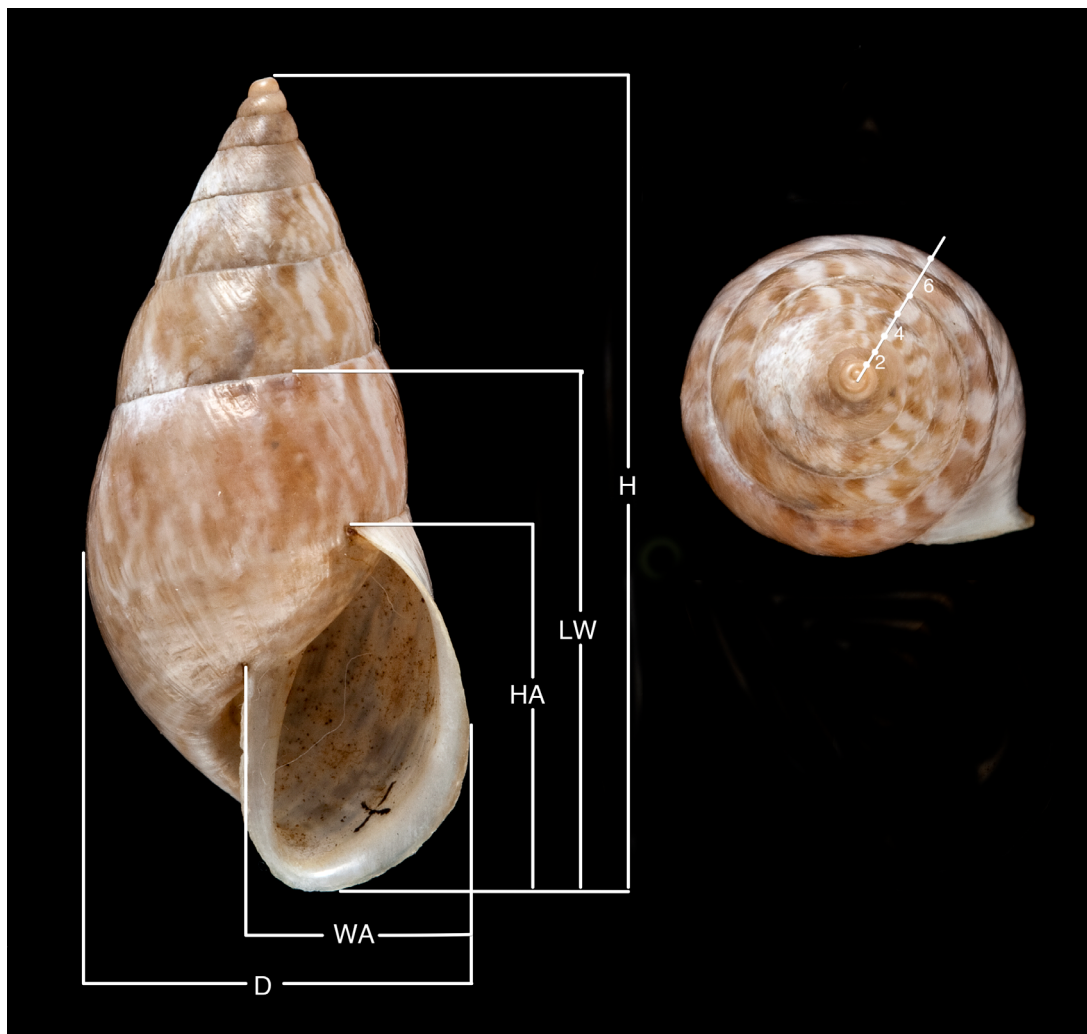


Figure 1. Measurement taken of the shell.

Results

Systematics

Family Bulimulidae Tryon, 1867

Genus *Suniellus* Breure, 1978

Scutalus (*Suniellus*) Breure 1978: 84. Type species: *Scutalus* (*Suniellus*) *chillu* Breure, 1978 by original designation.

Diagnosis.- Shell thin, yellowish to dark brown, rimate to imperforate, with a crenelated suture. Protoconch sculpture of straight to slightly anastomosing wrinkles. Growth lines visible on the entire teleoconch. Whorls slightly convex, peristome simple.

Remarks.- Breure (2011: 44) considered *Suniellus* as the high-altitude sister-group of *Kuschelenia* Hylton Scott, 1951, and gave it the status of a separate genus. At that time 4 species were recognised, ranging from Colombia to Bolivia: *S. adriani* Breure 2011; *S. chillu* (Breure 1978); *S. goudoti* (Petit de la Saussaye 1843) and *S. troscheli* (Phillipi 1867).

Suniellus tufinoensis Breure and Roosen sp. nov.

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(Figure 2)



Figure 2. *Suniellus tufinoensis* sp.n., holotype QCAZI-278701. Shell height 34.3 mm.

Diagnosis.- A species of *Suniellus*, up to 34.3 mm, with a relatively prominent sculpture, regularly rounded last whorl and in lateral view a straight peristome.

Description. - Shell height 34.3 mm, 1.55 times as long as wide, ovate, with hardly convex sides, imperforate, thin. Colour yellowish-olivaceous with streaks of brownish, especially behind the lip on the last whorl. Upper whorls lighter, the apex worn and whitish. Surface rather shining, with irregularly spaced, thickened growth striae, in between with weaker incrassations and crossed by indistinct spiral lines, forming oblong granules. Protoconch eroded, with some traces of axial wrinkles, partly anastomosing. Whorls 5, hardly convex, the last 0.85 times total shell height, well rounded; suture impressed, slightly descending in front. Aperture ovate, 0.57 times shell height, 1.5 times as long as wide, a pearly glow inside near the aperture. Peristome thin and simple, unexpanded, in lateral view straight; columella thread-like, hardly dilated above.

Dimensions.- Holotype H 34.3, D 22.2, HA 19.7, WA 12.8 mm; W 5 ¼ ; Paratype H 32, D 20, HA 21, WA 12 mm; W 5.

Type locality.- Ecuador, Prov. Carchi, Chiles volcano, Tufiño paramo; 0.78933 N, -077.89072 W, 3 669 m.

Type material.- QCAZI-278701, holotype (dry shell), from the type locality, leg. L. Camacho, 19-04-2014., QCAZI-274928, paratype (one shell, dry), Ecuador, Prov. Carchi, El Angel, 3 500 m, leg. M.B. Larrea, 17-05-1997.

Etymology.- Named after the type locality.

Comparison with other taxa.- This novelty resembles *Suniellus goudoti* (Petit de la Saussaye, 1843) (Figure 3), which occurs in Colombia, Tolima (type locality), Riseralda, and Cundinamarca (Linares and Vera 2012). It differs from that species by the relatively strong sculpture and the unexpanded peristome which is straight in side view. The new species may also be compared to *Suniellus adriani* Breure, 2011, occurring in Ecuador, Prov. Pichincha, from which it differs by being stouter, its ovate aperture, and by having a lighter colour.



Figure 3. *Suniellus goudoti* (Petit de la Saussaye 1843), lectotype MNHN-IM-2000-21877. Shell height 36.5 mm.

Remarks.- Sometimes placing a Bulimulid in the right genus can be challenging. However, *S. tofinoensis* sp. nov. fits the diagnosis of the genus *Suniellus* on all relevant shell characters: the axial ribs on the protoconch, dark periostracum, thin shell and crenulated suture. This combination of characters is not known from other genera in the Bulimulidae.

This species occurs in the Reserva Ecológica El Ángel, at the border with Colombia. This reserve is part of the Northern Andean paramo ecoregion (North Andean paramo [NT1006]) (Breure et al. 2022). It may be expected also in southernmost Colombia in suitable habitats at a similar altitude. The label of the holotype stated “3 300 m”, but the altitude of 3 669 m above has been taken from Google Earth Pro. It may be noted that *Suniellus* species generally occur in low densities in habitats at these high altitudes; they may be vulnerable for habitat change, like the rest of the paramo ecosystem (Brück et al. 2023). The paratype is damaged and does not allow measurements with the same accuracy as the holotype. Therefore, measurements of the paratype of the new species are rounded up to the nearest full millimetre.

Discussion and Conclusion

Thus, a new species of *Suniellus* is reported from Ecuador, highlighting that there are still unknown Bulimulids present in the mountains of the Andes. It might seem a bit odd to describe a new species based on shells without anatomy or DNA, but most Bulimulidae, including *Suniellus*, can be separated at the species level based on shell characters alone (for example Breure 1978, 2011; Breure et al. 2024; Mogollón Avila and Breure 2019). For *Suniellus* the relevant characters were described by Breure (1978, 2011) and repeated in this paper. Thus, waiting for live individuals to be collected and examined would likely not lead to different conclusions or characteristics useful in ecological studies. Aside from that, genus specific anatomical characters were presented in Breure (1978), so it is likely that for higher level systematics only DNA will supply additional information.

Moreover, it is important to describe these unknown species. If a species is described, it becomes known to other researchers and policymakers. Maybe this new, possibly endemic, species will provide an incentive to study the paramo of El Ángel more extensively. It should be stressed that this description is only a start, a short paper to give a name to *Suniellus tufinoense* sp. nov. and make sure that all data collected on this species can be tied to this nomen.

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Authors' Contributions

MR: studied the material in the PUCE collection, identified it as a possibly new *Suniellus* species and arranged the photographs. AB: used his expert knowledge on Bulimulidae to write the description of the new species. Both authors wrote the manuscript.

Conflict of interest statement

All authors declare there is no conflict of interest.

References

- Breure A 1978. Notes on and descriptions of Bulimulidae (Mollusca, Gastropoda). *Zoologische Verhandelingen* 164: 1-255
- Breure A 2011. Annotated type catalogue of the Orthalicoidae (Mollusca, Gastropoda) in the Royal Belgian Institute of Sciences, Brussels, with description of two new species. *ZooKeys* 101: 1-50.
- Breure A, Roosen MT, Ablett JD. 2022. Land and freshwater molluscs of mainland Ecuador: an illustrated checklist. *Iberus* 40: 1-290.
- Brück SA, Medina Torres BD, Lourdes Teixeira de Moraes Polizeli, M de. 2023. The Ecuadorian paramo in danger: What we know and what might be learned from northern wetlands. *Global Ecology and Conservation* 47: e02639.
- Correoso M 2008. *Los moluscos terrestres y fluviales del Ecuador continental. La biodiversidad desconocida*. 1st ed. SIMBIOE, Quito.
- Greke K, Kagainis U, Telnov D. 2023. First record of the family Diplommatinidae Gray, 1847 (Gastropoda: Architaenioglossa) from Ecuador with description of a new *Adelopoma* Doering, 1885. *Zootaxa* 5339 (3): 273-284.
- Linares EL, Vera ML. 2012. *Catálogo de los moluscos continentales de Colombia*. Universidad Nacional de Colombia, Bogotá, 360 pp.
- Mogollón Avila V, Breure ASH. 2019. Notes on *Drymaeus* species from Peru (Mollusca, Gastropoda, Bulimulidae), and description of a new species. *Basteria* 83: 13-18
- Moscol Olivera MC, Cleef AM. 2009. Vegetation composition and altitudinal distribution of Andean rain forests in El Angel and Guandera reserves, northern Ecuador. *Phytocoenologia* 39: 175-204.

- Ramirez Perez MC, Hausdorf B. 2022. Low abundance but high land snail diversity in montane rainforest on the western slope of the Andes in Ecuador. *Journal of Molluscan Studies* 88: eyab048.
- Roosen MT. 2019. *Abundance, species richness and biodiversity of terrestrial gastropods in the "Un poco del Chocó" nature reserve in North-western Ecuador*. Unpublished thesis, HAS University of Applied Sciences, Den Bosch.
- Roosen M. 2023. The Helicinidae (Gastropoda) of the Un poco del Chocó nature reserve (NW Pichincha province, Ecuador). *Folia Malacologica* 31: 61-67.
- Roosen MT, Breure ASH. 2024. Revision of the genera of Scolodontidae part 1: *Happia* Bourguignat, 1890 from *Austroselenites* Kobelt, 1905, *Drepanostomella* Bourguignat, 1890, *Hirtudiscus* Hylton Scott, 1973, *Luteostriatella* gen. nov., and *Systrophiella* H.B. Baker, 1925. *Journal of Conchology* 45: 91-110.
- Roosen MT, Büttner N. 2024. An unidentifiable species of? *Radiodiscus* Pilsbry, 1905 (Gastropoda; Charopidae) from the Un poco del Chocó nature reserve. *Revista Ecuatoriana de Medicina y Ciencias Biológicas* 45(1).
- Roosen MT, Dorado C 2022. Revision of the genus *Bourciera* (Gastropoda; Helicinidae), with the description of six new species from Ecuador and Peru. *Folia Malacologica* 30: 155-167.
- Roosen MT, Weijsenfeld J, Dorado C 2023. Notes on the genus *Xenodiscula* Pilsbry, 1919 (Gastropoda, Scolodontidae), with the description of a new species from NW Ecuador. *Folia Malacologica* 31 (2): 100-106.