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A new freshwater snail (Caenogastropoda: Cochliopidae) from the Atacama Desert, northern Chile

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In the family Cochliopidae, *Heleobia* Stimpson, 1865 is the most speciose genus in South America, with about 90 species (Hershler & Thompson 1992; Cazzaniga 2011). A recent molecular and morphological analysis performed in northern Chile (Atacama Desert) showed that the previously undescribed springsnails from Aguada de Chorrillos belong to *Heleobia* (Collado *et al*. 2013). In this study I formally describe this new species. Although this paper does not treat morphology in detail, the anatomical characters, in combination with the previously published molecular data provides a strong basis for recognizing this population as a distinct species.

Material and methods

The snails were collected alive from Aguada de Chorrillos (27°12′32.40″ S; 70°57′03.30″ W), Atacama Desert, northern Chile using a sieve of 0.5 mm mesh width and stored in absolute ethanol. The shells, opercula and penes were photographed and measured using a Motic SMZ–168 Stereo Microscope with a Moticam 2000 integrated digital camera. Type specimens were deposited in the Museo de Zoología de la Universidad de Concepción (MZUC), Concepción, Chile. Measurements in mm are presented as: mean ± standard deviation (minimum–maximum). Abbreviations: SL, shell length; SW, shell width; AL, aperture length; AW, aperture width.

Systematics

Class Gastropoda Cuvier, 1795

Order Littorinimorpha Golikov & Starobogatov, 1975

Family Cochliopidae Tryon, 1866

Subfamily Semisalsinae Giusti & Pezzoli, 1980

Genus *Heleobia* Stimpson, 1865

Species *Heleobia deserticola* sp. nov.

Holotype. (MZUC 43067, Fig. 1A). Collected by G.A. Collado from Aguada de Chorrillos, Chile (28 November 2011). Holotype measurements: SL 4.41 mm, SW 2.10 mm, AL 2.00 mm, AW 1.21 mm.

Paratypes. (MZUC 43068–43077, Fig. 1B–K). Snails from Aguada de Chorrillos, Chile, collected with the holotype by G.A. Collado. Morphometric data of the paratypes (n = 10): SL: 4.01 ± 0.31 (3.40–4.40); SW: 1.99 ± 0.13 (1.80–2.20); AL: 1.76 ± 0.19 (1.40–2.00); AW: 1.22 ± 0.15 (1.00–1.40); SW/SL: 0.50 ± 0.02 (0.46–0.53); AL/SL: 0.44 ± 0.04 (0.35–0.47); AW/AL: 0.07 ± 0.08 (0.61–0.86).

Description. Shell small, elongate–conic, thin, transparent, smooth, suture depth, closed umbilicus (imperforate). Adults with 6 to 7 convex whorls. Aperture ovate, outer lip thin. Operculum corneous, ovate, flat, thin, light brown,

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FIGURE 2. Aguada de Chorrillos, Atacama Desert, northern Chile, the type locality of *Heleobia deserticola* **sp. nov. A.** Panoramic view of the system, desert, beach and Pacific Ocean. **B.** Spring where the snails live.

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Literature cited

Bavay, A. (1904) Mission de Créqui–Montfort et Sénéchal de la Grange en Amérique du Sud. Mollusques terrestres et fluviatiles récoltés par le Dr Neveu–Lemaire. *Bulletin de la Société Zoologique de France*, 29, 152–156.

Biese, W.A. (1944) Revisión de los moluscos terrestres y de agua dulce provistos de concha de Chile. Parte I, Familia Amnicolidae. *Boletín del Museo Nacional de Historia Natural*, 22, 169–190.

Biese, W.A. (1947) Revisión de los moluscos terrestres y de agua dulce provistos de concha de Chile. Parte II, Familia Amnicolidae (continuación). *Boletín del Museo Nacional de Historia Natural*, 23, 63–77.

Cazzaniga, N.J. (1982) Notas sobre los hidróbidos argentinos. 5. Conquiliometría de *Littoridina parchappii* (d'Orbigny, 1835) (Gastropoda Rissoidea) referida a su ciclo de vida en poblaciones australes. *Iheringia*, Série Zoologia, 61, 97–118.

Cazzaniga, N.J. (2011) *Heleobia* Stimpson, 1865: taxonomía. *In*: Cazzaniga, N.J. (Ed.), El género *Heleobia* (Caenogastropoda: Cochliopidae). *Amici Molluscarum*, (*Número Especial*), pp. 12–17.

Collado, G.A. (2012) Nuevo registro de distribución geográfica y antecedentes de historia natural de *Heleobia chimbaensis* (Biese, 1944) (Caenogastropoda: Cochliopidae) en la costa del desierto de Atacama: implicancias para su conservación. *Amici Molluscarum*, 20 (2), 13–18.

Collado, G.A. (2013a) *Heleobia atacamensis* (Philippi, 1860). *In*: 10º Proceso de Clasificación de Especies. Ministerio del Medio Ambiente, Chile. Available from: http://www.mma.gob.cl (accessed 7 July 2014)

Collado, G.A. (2013b) *Heleobia chimbaensis* (Biese, 1944). *In*: 10º Proceso de Clasificación de Especies. Ministerio del Medio Ambiente, Chile. Available from: http://www.mma.gob.cl (accessed 7 July 2014)

Collado, G.A. & Méndez, M.A. (2011) Estrategias reproductivas y tipos de desarrollo en especies endémicas del género *Heleobia* Stimpson, 1865 (Caenogastropoda: Cochliopidae) de Chile. *Amici Molluscarum* (*Número Especial*), 67–71.

Collado, G.A., Valladares, M.A. & Méndez, M.A. (2013) Hidden diversity in spring snails from the Andean Altiplano, the second highest plateau on Earth, and the Atacama Desert, the driest place in the world. *Zoological Studies*, 52, 50.
http://dx.doi.org/10.1186/1810-522X-52-50

Collado, G.A., Méndez, M.A., Letelier, S., Veliz, D. & Sabando, M.C. (2011) Morfología peniana y taxonomía del género *Heleobia* Stimpson, 1865 en Chile junto a una revisión de los ejemplares tipo del Museo Nacional de Historia Natural de Chile. *Amici Molluscarum* (*Número Especial*), 49–58.

Courty, G. (1907) Explorations géologiques dans l'Amerique du Sud. *In*: Mission Scientifique de G. de Crèqui Montfort

et E. Sénéchal de la Grange, Vol. 14: 1–208. Paris: Imprimerie Nationale.
Doering, A. (1885) Apuntes sobre la fauna de moluscos de la República Argentina. 5ª entrega. *Boletín de la Academia Nacional de Ciencias en Córdoba*, 7 (4), 457–474.
d'Orbigny, A.D. (1835) Synopsis terrestrium et fluviatilium molluscorum in suo per Americam Meridionalem itinere collectorum. *Magasin de zoologie, d'anatomie comparée et de palaeontologie*, 5 (61–62), 1–44.
Gaillard, M.C. (1973) *Contribución al conocimiento del género* Littoridina *Souyelet 1852 en Argentina*. Facultad de Ciencias Naturales y Museo, Universidad Nacional de La Plata, 119 pp. [Argentina]
Gaillard, M.C. & de Castellanos, Z.A. (1976) Mollusca, Gasteropoda, Hydrobiidae. *In*: Ringuelet, R.A. (Eds.), *Fauna de agua dulce de la República Argentina*, 15 (2), pp. 1–39. [Fundación para la Educación, la Ciencia y la Cultura (FECIC), Buenos Aires]
Haas, F. (1955) XVII. Mollusca: Gastropoda. *In*: The Percy Sladen Trust Expedition to Lake Titicaca in 1937. *Transactions of the Linnean Society of London*, 1 (3), 275–308.
Hershler, R. & Thompson, F.G. (1992) A review of the aquatic gastropod subfamily Cochliopinae (Prosobranchia: Hydrobiidae). *Malacological Review* (*Supplement*), 5, 1–140.
Hubendick, B. (1955) XVIII. The anatomy of the Gastropoda. *In*: The Percy Sladen Trust Expedition to Lake Titicaca in 1937. *Transactions of the Linnean Society of London*, 1 (3), pp. 309–327.
Marcus E. & Marcus E. (1965) On Brazilian supratidal and estuarine snails. *Boletim da Faculdade de Filosofia, Ciências e Létras da Universidade de São Paulo, Zoologia,* 25, 18–103.
Ovando, X.M.C. & De Francesco, C.G. (2011) El género *Heleobia* en el noroeste argentino. *In*: Cazzaniga, N.J. (Eds.), El género *Heleobia* (Caenogastropoda, Cochliopidae) en América del Sur. *Amici Molluscarum*, (*Número Especial*), pp. 22–25
Philippi, R.A. (1860) *Reise durch die Wueste Atacama auf Befehl der chilenischen Regierung im Sommer 1853–54*. E Anton, Halle, 62 pp.
Pilsbry, H.A. (1911) Non–marine Mollusca of Patagonia. *In*: Scott, W.B. (Eds.), *Reports of the Princeton University Expedition to Patagonia 1896–1899. Part 5. Zoology.* The University of Princeton, Princeton, NJ, pp. 513–633.
Stimpson, W. (1865) Researches upon the Hydrobiinae and allied forms; chiefly made upon materials in the Museum of the Smithsonian Institution. *Smithsonian Miscellaneous Collections*, 201, 1–59.