

FIRST RECORD OF *LUCINOMA ANEMIOPHILA* HOLMES, OLIVER & SELLANES (2005 (BIVALVIA: LUCINIDAE) OUTSIDE ITS TYPE LOCALITY

Although there are scarce works dealing with the deep-water molluscan fauna from the south-eastern Pacific off Chile, several new species have recently been discovered from reducing environments, particularly in central and southern Chile^{1, 2}. Among these species is *Lucinoma anemiophila* Holmes, Oliver & Sellanes, 2005, a rather large lucinid bivalve described from a single locality at a methane cold seep off the port of Concepción, in central Chile, and one of the two species of *Lucinoma*, —the other being *Lucinoma lamellata* (E. A. Smith, 1885) found in Magellanic waters—, recorded from Chilean waters^{1, 3}. In this work, as part of ongoing studies documenting the bycatch of deep-water fisheries off northern Chile⁴, we present the first record of *L. anemiophila* outside its type locality, which is also the first record after its description,

extending its distribution about 14 latitudinal degrees (about 1540km) northwards from its type locality. This record is based on twelve specimens of *L. anemiophila* collected in green mud, with no other associated fauna, in a single batch deployed during prospective shrimp trawls off the port of Mejillones (22°49' S; 70°31' W, 485m depth), Región de Antofagasta, northern Chile. Voucher specimens were deposited at the Museo Nacional de Historia Natural at Santiago, Chile (MNHNCL 15316).

Lucinoma anemiophila Holmes, Oliver & Sellanes
2005
(Figs 1a–d)

Description Shell large (up to 61mm in diameter), thick, equivalve, equilateral, subcircular

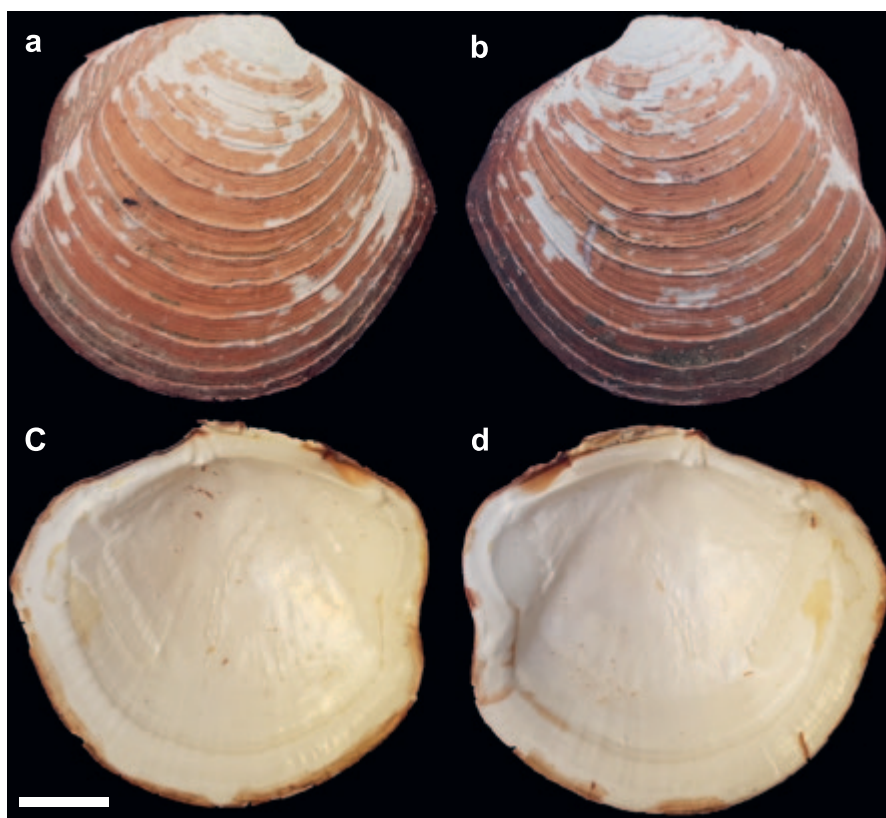


Figure 1 *Lucinoma anemiophila* Holmes, Oliver & Sellanes, 2005, off Mejillones (22° S), northern Chile, 412m depth (MNHNCL 15316); a: external view of right valve; b: external view of left valve; c: internal view of right valve; d: internal view of left valve. Scale bar: 1cm.

and lenticular, a little inflated. Escutcheon long and narrow. Sculpture concentric of low lamellae interspersed by 7–10 thin concentric lines. Ligament deeply inset on nymph. Hinge teeth of 2 cardinals in each valve, 2a and 3b slightly bifid; anterior laterals in all, obscure posterior laterals in some. Muscle scars prominent, with an oval posterior scar set against the pallial line, and an anterior adductor scar long and divergent¹. Shell colour cream with a greenish-brown periostracum. Interior of shell whitish and slightly nacreous.

Remarks The recovered specimens show little difference from the original description of the species¹, sharing most of the shell characteristics with the Concepción specimens and differing slightly in the outline of the shells (being a little wider than the type specimens). This rather large deep-water bivalve is easily distinguished from all other bivalve species present in northern Chile by its distinctly defined concentric lamellated sculpture, and by its large chalky shells.

The present discovery of *Lucinoma anemiophila* outside its type locality is similar to the recent discovery of the tubeworms *Escarpija spicata* Jones, 1985 and *Lamellibrachia barhami* Webb 1969, or of the deep water dove snail *Astyris atacamensis* Araya, Catalán & Aliaga 2016, in northern Chile: these organisms live in similar reducing environments, often in restricted bathymetric and geographical distributions, or in pockets, which may explain the scarce records for these species^{4, 5}. This new record of *L. anemiophila* is also exemplified, for example, by the lack of records of the vesicomid *Ectenagena australis* (Stuardo & Valdovinos, 1988), a very large clam (with a shell size up to 15cm) which may also thrive in cold seeps of methane in central Chile, but which has not been cited again since its discovery, even in a well-researched area⁶. Research focused on deep waters in the area may reveal the true distribution of these and similar species, which may prove to be locally abundant in the continental shelf at similar habitats.

¹ HOLMES AM, OLIVER PG, SELLANES J 2005 A new species of *Lucinoma* (Bivalvia: Lucinoidea) from a methane gas seep off the southwest coast of Chile. *Journal of Conchology*, 38(6), 673–682.

- ² KRYLOVA EM, SELLANES J, VALDÉS F, D'ELÍA G 2014 *Austrogena*: a new genus of chemosymbiotic bivalves (Bivalvia; Vesicomidae; Pliocardiinae) from the oxygen minimum zone off central Chile described through morphological and molecular analyses. *Systematics and Biodiversity*. 12(2), 225–246.
- ³ OSORIO C, REID DG 2004 Moluscos marinos intermareales y submareales entre la Boca del Guafo y el estero Elefantes, sur de Chile. *Investigaciones Marinas* 32(2), 71–89.
- ⁴ KOBAYASHI G, ARAYA JF 2018 Southernmost records of *Escarpija spicata* and *Lamellibrachia barhami* (Annelida: Siboglinidae) confirmed with degraded DNA from undiscovered reducing environments in northern Chile. *PLoS ONE*, 13(10), e0204959.
- ⁵ ARAYA JF, CATALÁN R, ALIAGA JA 2016 A new deep-water *Astyris* species (Buccinoidea: Columbellidae) from the southeastern Pacific. *Zootaxa*, 4139, 140–144.
- ⁶ STUARDO J, VALDOVINOS C 1988 A new bathyal *Calyptogena* from off the coast of central Chile (Bivalvia: Vesicomidae). *Venus* 47(4), 241–250.

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