

Acestarica, a new genus for a translucent deep-water species (Bivalvia: Limidae)

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Abstract

In 2015, a very thin-shelled, translucent bivalve in the family Limidae Rafinesque, 1815 was described as *Acesta vitrina* Poppe, Tagaro & Stahlschmidt, 2015 and coming from deep water from the Philippines. A new genus is proposed to accommodate this species based on its unique shellcharacters: an oblique, rounded shape, very translucent, thin-walled shell of small to moderate size. Comments are made on the subgenera of *Acesta* H. Adams & A. Adams, 1858.

Key words. *Acesta*, *Callolima*, *Acesta vitrina*, Philippines, taxonomy.

ZooBank registration. urn:lsid:zoobank.org:pub:90D0B140-2215-46B2-998E-7D598B8633EC

Introduction

The author of this paper had been loaned a set of five paired valved examples of *Acesta vitrina* Poppe, Tagaro & Stahlschmidt, 2015 (family Limidae Rafinesque, 1815), then still undescribed. The aim was to describe these specimens as a new species, but due to hesitation for the proper generic placement, the description was never finalized. Poppe et al. (2015) then were first to publish the description of this species as *Acesta vitrina* Poppe, Tagaro & Stahlschmidt, 2015. Poppe et al. (2015) apparently struggled with the same uncertainty of generic affinities but decided to describe it as an *Acesta* H. Adams & A. Adams, 1858, although they were aware that the match with this genus was not “perfect”. According to Poppe et al. (2015), *Acesta* was the nearest suitable recent genus to accommodate the new species, but the usually large size and robust shells of *Acesta* set them apart from *A. vitrina*. On further reflection, a new genus for this remarkable species is proposed herein and named *Acestarica* new genus.

Materials and Methods

The following abbreviation is used: MNHN = Muséum national d’Histoire naturelle, Paris, France.

Limid species are easy to recognize but the generic composition is not clear in all cases, especially in the genus *Acesta* and its subgenera. This study is based on specimens on loan from Rika Goethals (Brussels, Belgium) and the description of the species by Poppe et al. (2015).

Systematics

Superfamily Limoidea Rafinesque, 1815

Family Limidae Rafinesque, 1815

Acestarica, new genus

Figure 1

Type species (monotypic). *Acesta vitrina* Poppe, Tagaro & Stahlschmidt, 2015; holotype MNHN-IM-2000-30338 (measures 35.4 mm high and 33.9 mm wide).

ZooBank registration. urn:lsid:zoobank.org:act:4C188558-5334-405F-80A9-A1B3F051D1C4

Diagnosis. Shell average in size for the family to 35mm, extremely thin and translucent, ears very small, the anterior smallest. Ligament external aphidetic. Hinge plate narrow, smooth. Shell outline obliquely oval, inequilateral, extended to the anterior side. Shells gaping on both sides, the byssus sinus the largest. External glossy with very faint commarginal and radial striae, internal with irregular pock marks (probably mantle muscle scars)

Material examined. Five paired valved shells and one single valve; Philippines, deep water; leg. Rika Goethals & Fernand De Donder, Brussels, Belgium, private collection.

Type locality. Philippines, Mactan Island, Punta Engano, in front of Coral Point, 200–250 m.

Distribution. Currently only known from the Philippines.

Bathymetric distribution. The genus and species lives in deep water and nothing is known about the actual depth, other than the range given by Poppe et al. (2015).

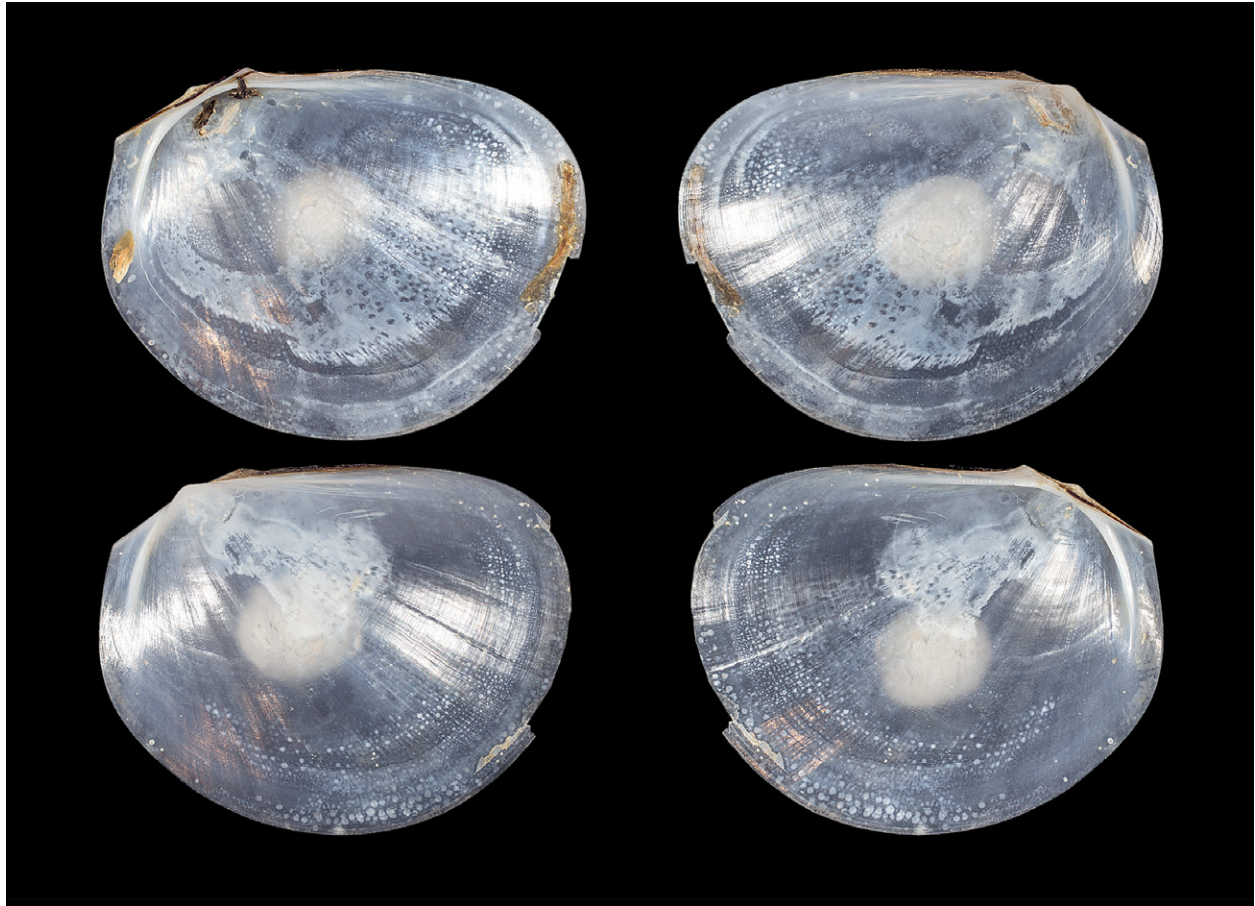


Figure 1. Genotype of *Acestarica* gen nov: *Acesta vitrina* Poppe, Togaro & Stahlschmidt, 2015. Holotype in Muséum national d'Histoire naturelle, Paris, MNHN-IM-2000-30338. Photograph by Manuel Caballier, © MNHN.

Habitat. The holotype and paratype 1 were trawled on a gravel bottom fide Poppe et al. (2015). The genus is probably free living on the substrate.

Comparison. There are no other Recent species of Limidae known that have a similar, oblique shape in combination with a thin, translucent shell. The only genus known with similar translucent shells is *Mantellina* Sacco, 1904, which was originally described as fossil from the Tertiary of Italy (type species: *Mantellum inoceramoides* Sacco, 1904: 148, pl. 28 fig. 4). The sole living species attributed to this genus is *Mantellina translucens* Harasewych & Tëmkin, 2015, which was discovered very recently (Harasewych & Tëmkin, 2015). *Mantellina* is distinguished by its prominent commarginal rugae and the large posterior and byssal gapes.

The genus *Acesta* H. Adams & A. Adams, 1858, in which *A. vitrina* was originally placed, was considered by Huber (2010) to be composed of three subgenera, but these are not accepted by MolluscaBase (2021). *Acesta* sensu stricto have medium-sized (*Acesta citrina* Masahito & Habe, 1976) to very large shells (*Acesta marissinica* Yamashita & Habe, 1969); they are neither translucent nor oblique in shape and have a straight posterior ligament margin, but with a long, straight to concave anterior slope. The subgenus *Callolima*

Bartsch, 1913 is similar to *Acesta* but has a concave byssal sinus and a shorter anterior slope. *Plicacesta* H.E. Vokes, 1963 has a more rounded shell but, again, with a deeply concave anterior margin in addition to a strongly radially ribbed shell. None of the *Acesta* subgenera have a thin, translucent shell but are variously radially ribbed [*A. (P.) diomedea* (Dall, 1908)], radially striate [*A. (A.) excavata* (Fabricius 1799)], or smooth [*A. (C.) rathbuni* (Bartsch, 1913)].

Etymology. *Acestarica* is formed from the combination of *Acesta* and the suffix *-rica* in honour of Rika Goethals. Rika sent me shells to describe but my manuscript was too late and the species was already named *Acesta vitrina* by Poppe et al. (2015). The genus gender is female.

Remarks. The phylogeny of the Limidae remains largely unresolved. Harasewych & Tëmkin (2015) showed that *Mantellina* is a distinct genus, rather basal in the Limidae, but included only 10 species in seven genera in their analysis. Gagnon et al. (2015) investigated North Atlantic species of *Acesta* but did not suggest that there was any evidence to define clades within the genus. Without molecular research, it is not yet possible to place *A. vitrina* within the phylogeny of the Limidae or to assess how *Acestarica* and *Acesta* are related.

The actual depth range at which this genus lives is unknown. The depths of some deep-water *Acesta* species can be as much as 600–1,000 m. The holotype of *M. translucens* was collected at 279 m, which is within the given depth range of *A. vitrina*.

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