

On two fossils bivalve (Mollusca Bivalvia) from Lower Piacenzian of Spain with description of a new species

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ABSTRACT

The study of fossil molluscs from the Lower Piacenzian of Spain has allowed us to discover a new species of bivalve belonging to the family Limidae: *Acesta* (s.l.) *plioiberica* n. sp. which is here illustrated and discussed. Another taxon, found both in the Spanish and Italian Pliocene and previously described as *Saxicava arctica* var. *crassomagna* Sacco, 1901, is here considered as a valid species with the name of *Hiatella crassomagna*.

KEY WORDS

Bivalvia; Limidae; Pliocene; new species.

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INTRODUCTION

During the study of the Pliocene malacofauna of the Mediterranean basin, two interesting bivalves (Mollusca Bivalvia) were found which are studied in the present work.

MATERIAL AND METHODS

The material examined was collected both during surface research and from study of detritus, coming from La Lobilla (Estepona, Spain) deposits of Lower Piacenzian.

For the generic and suprageneric determinations we followed Molluscabase (<https://www.molluscabase.org/>); for chronostratigraphy, the International Stratigraphic Chart (2022) was followed.

ABBREVIATIONS. L = maximum valve width; vl. = valve; MRSN = Museo regionale Scienze Naturali di Torino (Italy); MSN-FI = Museo Paleontologico di Firenze (Italy), MMPE = Museo Municipal Paleontológico de Estepona, Estepona (Malaga, Spain), CMB = Collezione M. Mauro Brunetti collection (Navas del Selpillar, Spain),

CGDB = Giano Della Bella collection (Monterenzio, Italy).

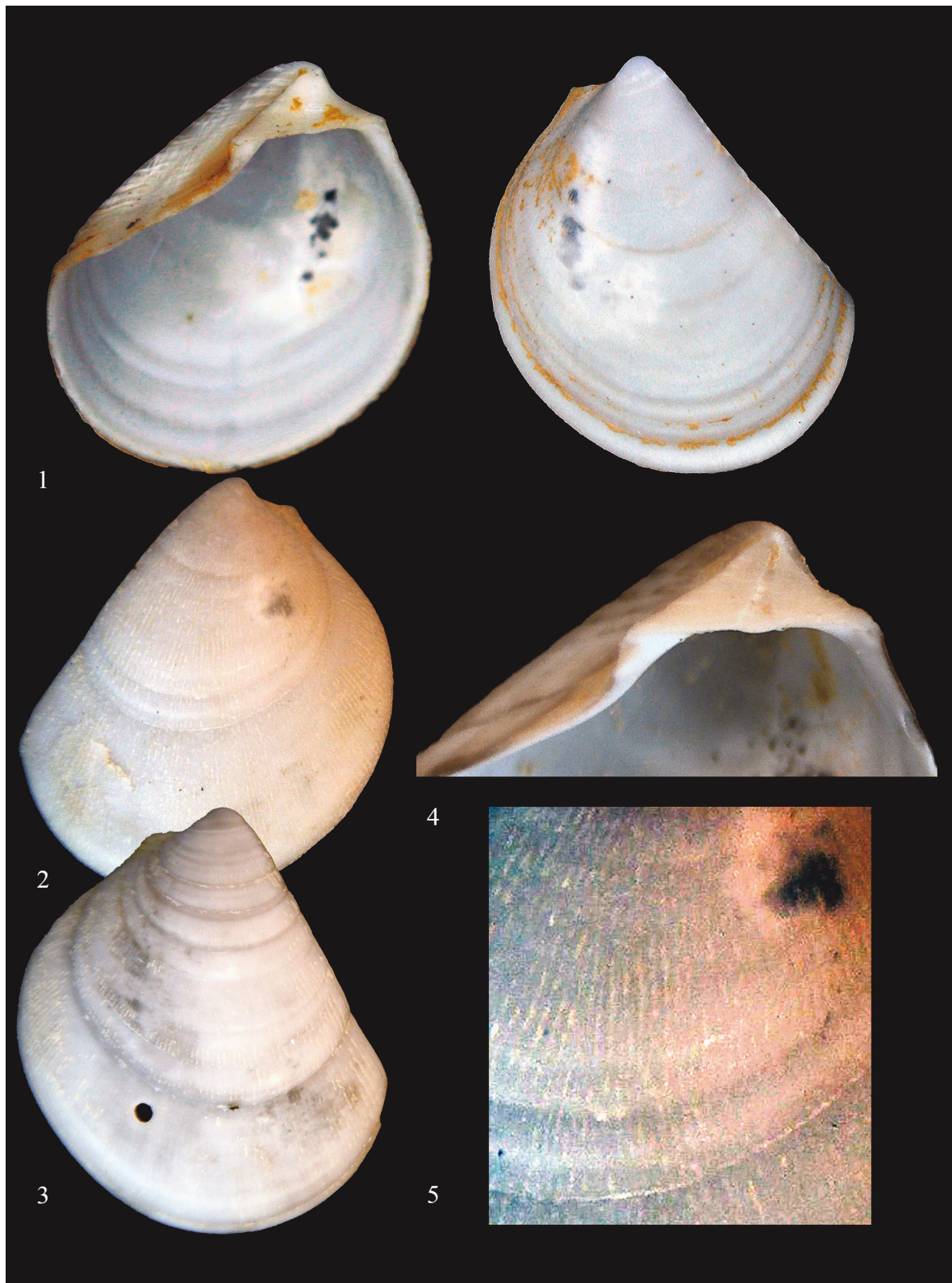
RESULTS

Sistematics

Classis BIVALVIA Linnaeus, 1758
Superfamilia LIMOIDEA Rafinesque, 1815
Familia LIMIDAE Rafinesque, 1815
Genus *Acesta* H. Adams et A. Adams, 1858
Type species. *Ostrea excavata striata* J.C. Fabricius 1779 = *Acesta ecavata* (J.C. Fabricius 1779)

***Acesta* (s.l.) *plioiberica* n. sp.** (Figs. 1–5)
<https://www.zoobank.org/675C286B-D19A-439F-BAAC-09A9CC7EF328>

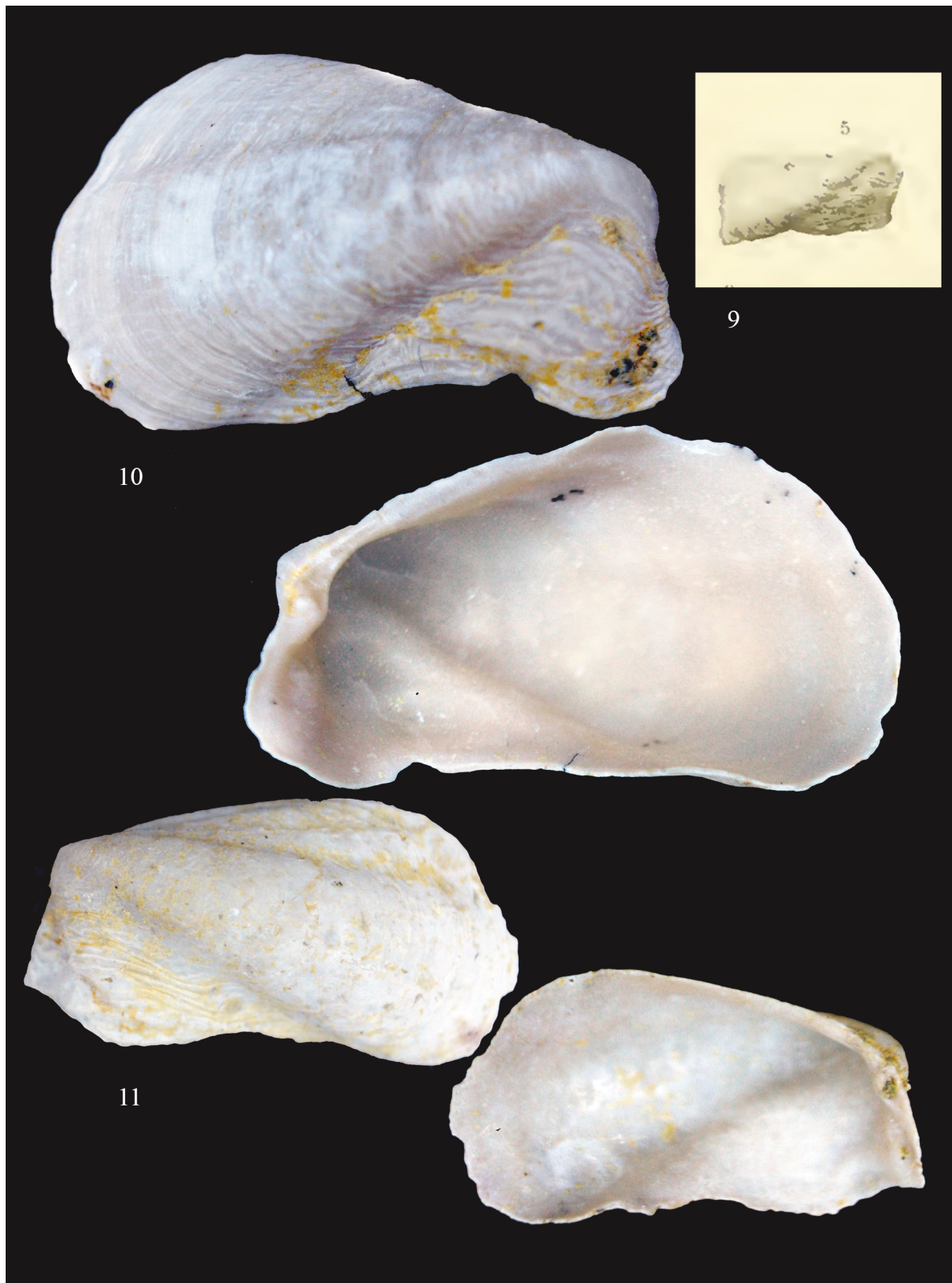
TYPE MATERIAL. Holotype. SPAIN • 1 vl; Estepona, La Lobilla; 36°26'20.2"N 5°08'40.9"W; Pliocene, Lower Piacenzian; L = 8.3 mm; MMPE - 24940. Paratype 1. SPAIN • 1 vl; Estepona, La Lobilla; 36°26'20.2"N 5°08'40.9"W; Pliocene, Lower Piacenzian; L = 6.6 mm; CGDB. Paratype 2. SPAIN



Figures 1–5. *Acesta* (s.l.) *plioiberica* n. sp. from La Lobilla (Estepona, Spain), Lower Piacenzian. Fig. 1: holotype, L = 8.3 mm, MMPE-24940. Fig. 2: paratype 1, L = 6.6 mm, CGDB. Fig. 3: paratype 2, L = 9 mm, MSN-FI IGF 105251. Fig. 4: holotype, detail of the hinge. Fig. 5: holotype, detail of the valve sculpture.



Figure 6. *Acesta* (s.l.) *plioiberica* n. sp. from La Lobilla (Estepona, Spagna), Lower Piacenzian, L = 8.8 mm, CMB. Figure 7. *Hiatella crassomagna* (Sacco, 1901) from Cedda (Siena, Italy), Middle Piacenzian, L = 11.3 mm, CGDB. Figure 8. *Acesta colombiana* Vokes, 1970, holotype, Recent, original draft (from Vokes, 1970, modified).



Figures 9–11. *Hiatella crassomagna* (Sacco, 1901). Fig. 9: Holotype, original draft by Sacco (1901). Fig. 10: a specimen from La Lobilla (Estepona, Spain), Lower Piacenzian, L = 16. Fig. 11: an other specimen from La Lobilla (Estepona, Spain), Lower Piacenzian, L = 13.

• 1 vl; Estepona, La Lobilla; 36°26'20.2"N 5°08'40.9"W; Pliocene, Lower Piacenzian; L = 9 mm; MSN-FI IGF 105251.

OTHER MATERIAL EXAMINED. SPAIN • 14 vl; La Lobilla (Estepona, Spagna); Pliocene, Lower Piacenzian; CMB (Landau et al., 2003).

DESCRIPTION. Thin and small shells, less than 10 mm. Triangular shape, strongly inequilateral, equivalve, moderately inflated. Ventral margin regularly rounded. Posterior margin oblique, slightly curved near the hinge. Umbo small, auricles subequal. Ligament area triangular with a wide, triangular fossa. Hinge edentulous. Sculpture subequal in the two valves, composed of numerous ribs present on the outside of the entire shell, absent on the inside, which is smooth. Some marked growth lines present. Muscle imprints not raised.

DISTRIBUTION. At the moment, the new species is only now from the type locality.

ETYMOLOGY. The name derives from the geological period in which the species lived (Pliocene) and from the place where it was found (Iberian Peninsula).

REMARKS. *Acesta* (s.l.) *plioiberica* n. sp. (Figs. 1–6) has an unmistakable “irregular triangle” shape. The type of hinge, among all the genera of the family Limidae Rafinesque, 1815, is close to that of the genus *Acesta* H. Adams et A. Adams, 1858, compared to which *Acesta* (s.l.) *plioiberica* n. sp. has however clearly smaller dimensions. All the species of the genus *Acesta*, about 50 living mostly in cold seas, normally exceed 100 mm in width. For these reasons the new species is considered as belonging to the genus *Acesta* “sensu lato” pending more in-depth studies that clarify its exact taxonomic position. Among the living species, *Acesta colombiana* Vokes, 1970 (Fig. 8) from the Gulf of Mexico and found at a depth of more than 400 meters, is the one that in our opinion has the shape of the valve most similar to *Acesta* (s.l.) *plioiberica* n. sp. *Acesta colombiana* has significantly larger dimensions (holotype 124 mm,

see Vokes, 1970), the shape of the shell is more regular and the sculpture of the valve has a smaller number of ribs.

In the same sediment as *Acesta* (s.l.) *plioiberica* n. sp. some valves of a species of the genus *Hiatella* Bosc, 1801 were found, attributable to the variety *crassomagna* Sacco, 1901.

This variety has been described as follows (Sacco, 1901): “*S. arctica* var. *crassomagna* Sacc. (Tav. XIII, fig. 5). Testa maior, crassior, saepe gibbosior et contortior. Piacenziano: Zinola, Rio Torsero, Albenga (frequente). Osservazioni. - Varietà evidentemente in rapporto coll’ambiente. (p. 47)”.

This taxon has a particular shell sculpture, is found in both the Lower Piacenzian of Spain (Estepona, Malaga, Spain) and the Middle Piacenzian of Italy (Cedda, Siena; see also Brunetti M. & Della Bella, 2006) and does not show transitional forms with the similar *Hiatella arctica*, of which numerous material has been examined. For these reasons it is proposed to consider *Saxicava arctica* var. *crassomagna* as a distinct species with the name of *Hiatella crassomagna* (Sacco, 1901) (Fig. 7, 9–11).

The holotype is housed in the Bellardi Sacco collection (MRSN - B.S. 148.02.005), figured by Sacco (1901) (fig. 4A) and it comes from the typical Pliocene locality of Rio Torsero (Savona, Italy).

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