Bornia canariensis, a new marine species from the Canary Islands (Bivalvia, Heterodonta, Veneroida, Kelliidae)

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Bornia canariensis spec. nov. is described from the beaches of Gran Canaria, Canary Islands, Spain. The new species resembles (juvenile) *Bornia sebetia* (O.G. Costa, 1829), but shows consistent differences.

Key words: Bivalvia, Heterodonta, Veneroida, Kelliidae, *Bornia*, taxonomy, Canary Islands.

Introduction

Recently the authors isolated shells of a small *Bornia* species from shell grit found at Playa de las Canteras, Las Palmas de Gran Canaria, Canary Islands, Spain. At first sight the specimens resemble juvenile *Bornia sebetia* (O.G. Costa, 1829), but a closer examination shows consistent differences. In the present paper the *Bornia* species from Playa de las Canteras is described as new to science.

Material and methods

Abbreviations: AD, colln J.J. van Aartsen, Dieren, The Netherlands; c, complete specimen(s); DFH, colln D.F. Hoeksema; GFS, colln G.F. Simons; NCB, colln Netherlands Centre for Biodiversity Naturalis, Leiden, The Netherlands; RBINS, colln Royal Belgian Institute for Natural Sciences, Brussels, Belgium; v, valve(s); WS, colln W. Segers, Aartselaar, Belgium.

In addition to the specimens of *B. canariensis* spec. nov. from Gran Canaria, mentioned below, the authors studied two adult valves of *B. sebetia* from Djerba, Tunisia (iii.2010, RBINS, leg. W. Segers) (Figs 10-12) and two large samples of *B. sebetia* from Monte Gordo, Algarve, Portugal (ix.1993, GFS) and Side, Turkey (x.1999, GFS), respectively. The latter two samples contain juvenile as well as adult specimens.

Systematics

Bornia canariensis spec. nov.

Description. — Shell minute, solid appearance but brittle, glassy transparent, trigonal, equivalve, almost equilateral, longer than high (Figs 4, 7).

Valves moderately convex, closed along all sides. Umbones slightly prosogyr; beaks just before the midline; prodissoconch smooth, clearly circumscribed and somewhat

elevated (Figs 4-9). All margins convex and evenly curved, the posterior margin somewhat stronger than the anterior margin. In some specimens antero-dorsal, postero-dorsal and ventral margins nearly straight. Lunule and escutcheon absent.

Hinge strongly developed. One bent cardinal tooth in the right valve (Figs 1, 5, 6) and two diverging straight cardinal teeth in the left valve (Figs 2, 8, 9). Both valves show posteriorly one straight lateral tooth (Figs 6, 9). A triangular resilifer is situated directly in front of the lateral teeth (Figs 6, 9). No nymf discernable.

Surface smooth and glossy, with delicate, irregular, commarginal growth lines and threads (Fig. 3). No other sculpture. Periostracum not seen. Margins smooth. Interior smooth and glossy, pallial line and muscle scars not detectable. Soft parts unknown.

Dimensions maximum ca. H 1.05 mm and L 1.25 mm.

Type locality.— North-east side Playa de las Canteras, Las Palmas de Gran Canaria, Canary Islands, Spain.

Holotype. — A complete specimen, ii.1999, RBINS, IG.31824/MT.2487, leg. W. Segers (Figs 1-2).
Paratypes.— From the type locality: 4 v, ii.1999, RBINS, IG.31824/MT.2488-MT.2491, leg. W. Segers (Figs 3-9); 30 v, iv.1973, AD.4902 [future colln NCB RMNH.AD.4902], leg. W. Overdiep; 32 v, xii.1981, DFH; 4 c, 30 v, ii.1999, WS; 8 v, iv.2005, GFS; 5 c, > 100 v, v.2009, DFH. From Playa de las Maspalomas, Gran Canaria: 1 v, v.2009, DFH.

Etymology.— The name refers to the Canary Islands, where the new species was discovered.

Distribution.— So far the new species has only been found on Gran Canaria, at the type locality and at Playa de Maspalomas in the south.

Discussion

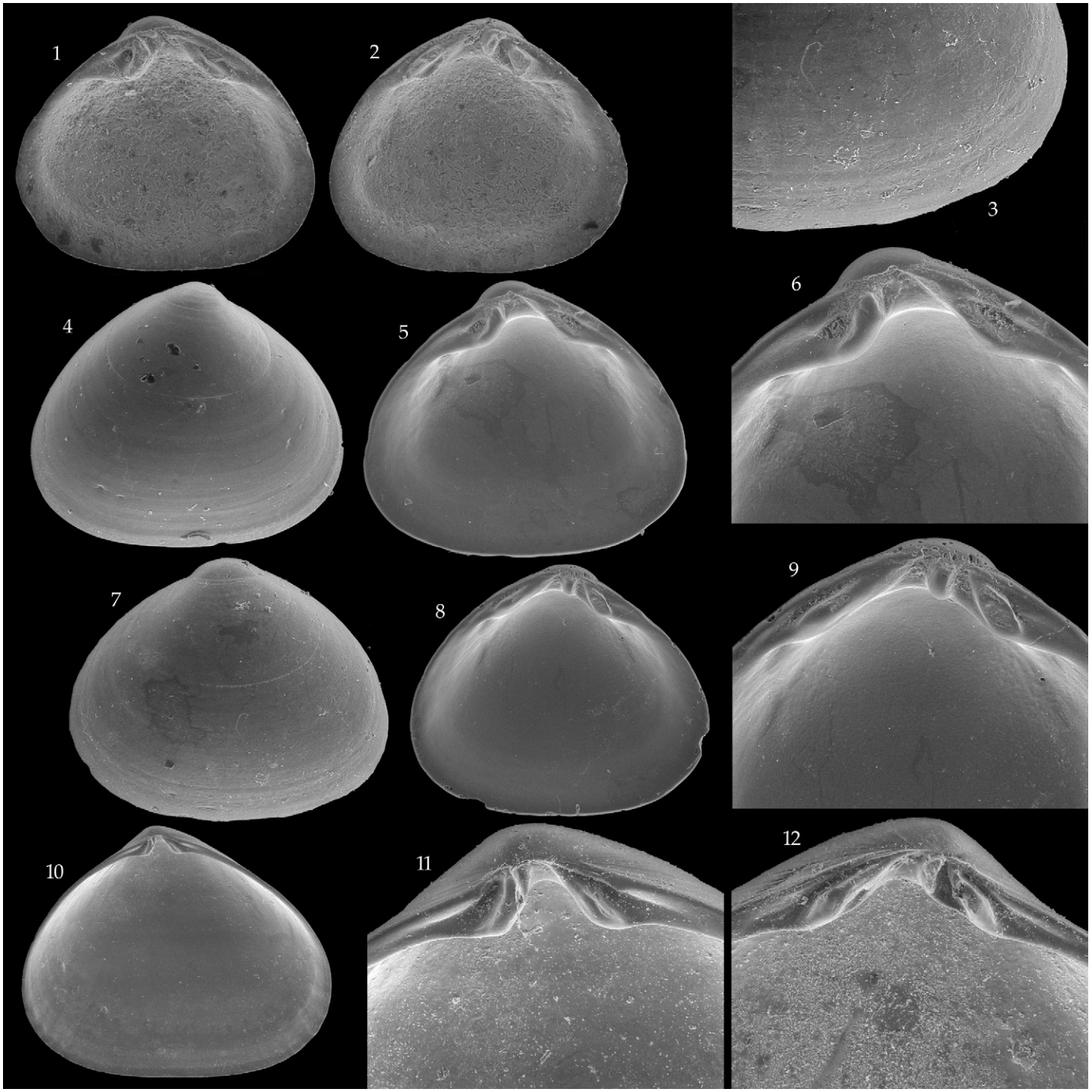
Genus.— The present species fits in *Bornia* Philippi, 1836, redefined by Chavan (1969: N523) as follows: Transversely trigonal to trapezoidal, slightly inequilateral, flattened, shining, smooth or with faint infra-externally placed radials, crenulating inner margin. Hinge with narrow, oblique well-marked cardinal teeth 1, 2a, 2b, and traces of lateral teeth AIII, AII in front of them; short well defined resilifer and moderately strong lateral tooth PI, strong PII, traces of PIII, all closely behind ligament.

Type species *Bornia sebetia* (O.G. Costa, 1829).

Species.— In the literature on the West African malacological province (Ardovini & Cossignani, 2004: 50) two species of *Bornia* are mentioned, viz. *B. balalaika* Von Cosel, 1995, and *B. geoffroyi* (Payraudeau, 1826). Only *B. geoffroyi* has been found on the Canary Islands (Hernández & Hernández, 2003: 102). However, following Chavan's redefinition quoted above these two species do not fit in *Bornia*. '*Bornia' balalaika* was described as showing two cardinal teeth in both valves (Von Cosel, 1995: 23), and '*Bornia' geoffroyi*, with its arched hinge plate, has been placed by Chavan (1969: N527) in *Semeloidea* Bartrum & Powell, 1928, an interpretation followed by Van Aartsen (1997: 43). Consequently *B. canariensis* appears to be the first *Bornia* that is known from the West African fauna.

By its almost equilateral shape, *B. canariensis* clearly differs from the Miocene species *B. hoernesi* Cossmann & Peyrot, 1912 (cf. Cossmann & Peyrot, 1912: pl. 25 figs 54-55). *Bornia canariensis* spec. nov. resembles *B. deltoidea* (Wood, 1851) and *Hemilepton kautskyi* (Glibert, 1945), known from Miocene and Pliocene deposits, but the latter species grow larger and show coarser growth lines. Moreover *B. deltoidea* has a microsculpture of pits on the entire surface (see Marquet, 2005: 13-14, 17, pl. 4 fig. 2, pl. 7 fig. 2, and Moerdijk

Figs **1-9**. *Bornia canariensis* spec. nov. Playa de las Canteras, Las Palmas de Gran Canaria, Spain, ii.1999, RBINS IG.31824, leg. W. Segers. **1-2**, holotype, (RBINS MT.2487), H 0.93 mm, L 1.09 mm. **1,** right valve; **2**, left valve. **3-9**, paratypes. **3,** detail surface left valve of Fig. 7; **4**, right valve, H 0.96 mm, L 1.14 mm (RBINS MT.2488); **5-6**, right valve, H 1.00 mm, L 1.17 mm (RBINS MT.2489); **7**, left valve, H 0.95 mm, L 1.16 mm (RBINS MT.2490); **8-9,** left valve, H 1.02 mm, L 1.21 mm (RBINS MT.2491). Figs. **10-12**. *Bornia sebetia* (O.G. Costa, 1829). Djerba, Tunisia, iii. 2010 RBINS, leg. W. Segers. **10-11**, right valve, H 5.25 mm, L 6.47 mm; **12,** hinge of left valve, valve H 5.77 mm, L 7.03 mm.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et al., 2010: 195-197). A discussion of the correct generic classification of the three fossil species mentioned here is beyond the scope of the present paper.

The present species resembles most closely *B. sebetia.* The outlines (Figs 5, 10) and hinges (Figs 6, 11, 9, 12) are similar. The latter species is well-known and rather common in the Mediterranean and Lusitanian Atlantic (Van Aartsen, 1997: 44). *Bornia canariensis* spec. nov. differs from *B. sebetia* in (1) much smaller dimensions, (2) a more strongly developed hinge (length hinge ≈ 0.6 × length valve, whereas in *B. sebetia* length hinge ≈ 0.3 × length valve; also in juveniles), (3) a somewhat elevated prodissoconch, and (4) the absence of a radial structure in the valves and an accompanying crenulation of the inner margin.

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