

A new species of living glass-scallop, genus *Similipecten*
(Bivalvia, Propeamussiidae), from the Bahama Islands (West Indies)

(Studies on West Indian marine molluscs nr. 35)

Henk H. DIJKSTRA

c/o Zoological Museum, University of Amsterdam, P.O. Box 94766, 1090 GT Amsterdam,
The Netherlands; h.h.dijkstra@wx.nl

Similipecten redferni spec. nov. is described from the Bahama Islands (tropical western Atlantic).

Key words: Bivalvia, Propeamussiidae, *Similipecten*, new species, Bahama Islands, West Indies.

INTRODUCTION

Redfern (2001: 213, pl. 88 fig. 872A-D) described and figured a propeamussiid species (as *Cyclopecten* sp.) from the Bahama Islands, which he compared with *Cyclopecten nanus* Verril & Bush in Verrill, 1897, known from the sub-tropical and tropical western Atlantic. In fact, both species are more morphologically related to *Similipecten* than to *Cyclopecten* (see table 1) and therefore both are here classified with *Similipecten*.

Acronyms for collections: CR, C. Redfern colln, Boca Raton, Florida, USA; HD, H.H. Dijkstra colln, Sneek, The Netherlands; USNM, National Museum of Natural History, Washington DC, USA; ZMA, Zoological Museum, University of Amsterdam, Amsterdam, The Netherlands. Abbreviations for shell characters: H, height (dorsal-ventral); lv, left valve (upper valve); rv, right valve (lower valve); W, width (anterior-posterior).

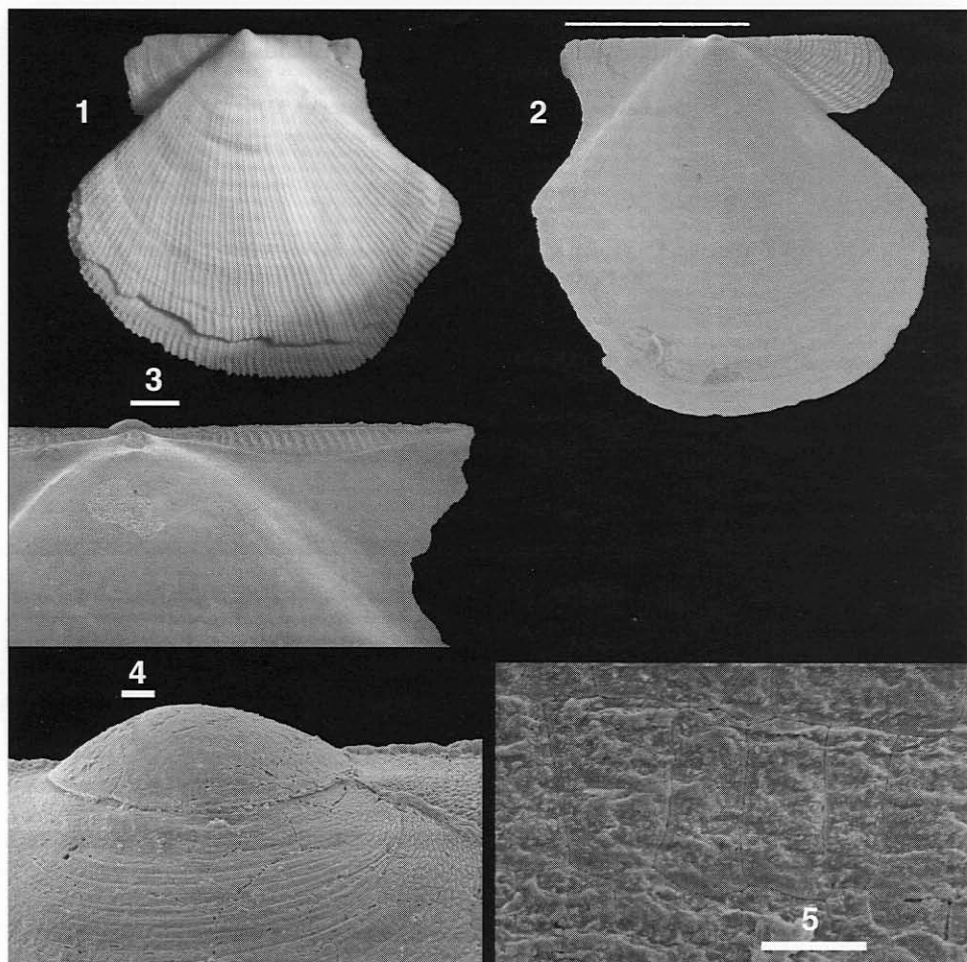
SYSTEMATIC PART

Similipecten Winckworth, 1932

Similipecten Winckworth, 1932: 241, 250 [proposed as a subgenus of *Chlamys*]. Type species (by original designation): *Pecten similis* Laskey, 1811; Recent, East Atlantic.

Arctinula Thiele, 1935: 806 [proposed as a section of *Palliolium*]. Type species (by original designation): *Pecten greenlandicus* G.B. Sowerby 2nd, 1842; Recent, Arctic.

Diagnosis. — A free-living, small to medium sized, propeamussiid; shell semi-orbicular, translucent to vitreous, slightly opaque, laterally compressed, smooth or sculptured with minute commarginal growth-lines or delicate radial striae; anterior and posterior auricles well developed, nearly equal in length; byssal notch moderately slight; no ctenolium; cardinal crura rather broad, usually no internal ribs (rarely rudimentary).



Figs 1-5. *Similipecten redferni* spec. nov. Bahama Islands, Abaco Island, N of northwest-end of Guana Cay, c. 26°44'N 77°09'W, depth 52 m, amongst sediment, C. Redfern leg., 09.ix.1987. 1, holotype, lv, exterior; 2, paratype, lv, exterior; 3, paratype, lv, detail cardinal crura; 4, paratype, rv, detail prodissoconch; 5, paratype, rv, detail microstructure of outer prismatic layer on antero-ventral part of disc.

Distribution. — Eocene to Recent (Hertlein, 1969: N354); Arctic to tropical Atlantic, tropical Indo-Pacific; littoral to bathyal depths.

Remarks. — Hertlein (1969: N354) treated *Similipecten* as a synonym of *Delectopecten* Stewart, 1930, together with *Arctinula* Thiele, 1935, and *Catillopecten* Iredale, 1939, and placed these genera in the *Eburneopecten* group of Pectinidae. Vaught (1989: 119) also synonymized *Similipecten* with *Delectopecten*, but treated *Arctinula* and *Catillopecten* as synonyms of *Cyclopecten*. Now *Similipecten* is classified with Propeamussiidae (Waller,

1984: 213; Dijkstra, 1991: 23; Dijkstra & Goud, 2002: 42), or Propeamussiinae (Schein, 1989: 95).

Morphological characters of *Arctinula* and *Similipecten* are similar. For comparison with *Cyclopecten* see table 1.

Similipecten redferni spec. nov. (figs 1-6)

Cyclopecten sp.; Redfern, 2001: 213, pl. 88 figs 872A (holotype), 872B-D (paratypes).

Material examined (paratypes, unless indicated otherwise). — Bahama Islands, Abaco Island, N of north-west-end of Guana Cay, c. 26°44'N 77°09'W, shells only, at various depths amongst sediment, C. Redfern leg.: 60 m, 06.viii.1982, 1 rv (CR); 53 m, 15.vii.1983, 3 lv + 3 rv (CR); 45 m, 17.viii.1983, 1 rv (CR); 52 m, 09.ix.1987, 1 lv (holotype, ZMA Moll. 4.02.033), 3 lv + 3 rv (ZMA Moll. 4.02.034), 15 lv + 13 rv (CR); 52 m, 15.viii.1989, 3 lv + 1 rv (CR); 35 m, 28.vi.1996, 4 lv + 4 rv (CR).

Description. — Shell up to c. 4.5 mm in height, fragile, moderately thin, semi-transparent or opaque, rather circular in shape, inequivalve, slightly inequilateral, right valve more convex than left valve, auricles inequal in shape and approximately equally sized, mottled with hyaline dots or with withish or brownish dots and patches, internal ribs lacking. Prodissoconch c. 92 μ m.

Left valve rather flattened, somewhat oblique and slightly concave posteriorly with a sinuous ventral margin, weakly sculptured with numerous delicate radial riblets (c. 10 in the central part of the disc), commencing in early growth stage (c. 1 mm below the umbonal top) and increasing and extending to the ventral margin. Fine commarginal threads are produced in preradial stage, forming a somewhat reticulate sculpture in early radial stage. Anterior auricle somewhat curled on the anterior side, with prominent commarginal lamellae, posterior auricle sculptured radially or weakly reticulated.

Right valve rather inflated, nearly smooth with a microsculpture of commarginal lines, with posterior auricle continuous with disc and demarcated slightly curved anterior auricle with delicate radial sculpture or faintly reticulated. Byssal notch and fasciole small and narrow, ctenolium lacking. Resilifer triangular, cardinal crura rather broad with irregular transverse incisions.

Measurements of the holotype: H 4.75 mm, W 5.01 mm.

Distribution. — So far only known from the Bahama Islands, depth range 35-60 m, amongst sediments.

Comparison. — The present species is morphologically close to *Similipecten nanus* (Verrill & Bush, in Verrill, 1897), known from the tropical and sub-tropical western Atlantic, but differs in having a more inflated and inequilateral left valve (posteriorly oblique, *S. nanus* more equilateral and more circular). The radial sculpture of the left valve is more prominent, which is weaker or even lacking in *S. nanus*. Other characters are almost similar.

Etymology. — The present species is named after Mr. Colin Redfern, who collected this new glass-scallop and recently provisionally recorded it in his comprehensive monograph on the Bahamian seashells.

Table 1. Morphological characters of *Similipecten* and *Cyclopecten*.

	<i>Similipecten</i>	<i>Cyclopecten</i>
Dimensions	c. 5-25 mm high	do.
Shape	orbicular to oblique	orbicular
Sculpture lv	Absent or delicate	Usually commarginal
	commarginal and/or	lamellae and/or rows of
	radial striae	radial vesicles
Sculpture rv	usually absent	commarginal lirae
Auricles	anterior raised	anterior flat
Byssal notch	shallow	shallow to moderately deep
Internal ribs	usually lacking	do.
Cardinal crura	broad	small
Microstructure	crossed-lamellar aragonite	crossed-lamellar aragonite
	beyond pallial line	towards pallial line

ACKNOWLEDGEMENTS

I am most grateful to Mr. Colin Redfern (Boca Raton, USA) for making the present material disposal for study and to Dr. Mirosław G. Harasewych (USNM) for a loan of *S. nanus*. Also thanks are due to Mr. Robert G. Moolenbeek (ZMA) for preparing SEM-micrographs.

REFERENCES

- ABBOTT, R.T., 1954 [1st ed.]. American seashells: i-xiv, 1-541. New York.
- ABBOTT, R.T., 1974 [2nd ed.]. American seashells: 1-663. New York.
- DIJKSTRA, H.H., 1991. A contribution to the knowledge of the pectinacean Mollusca (Bivalvia: Propeamussiidae, Entoliidae, Pectinidae) from the Indonesian Archipelago. — Zoologische Verhandelingen 271: 1-57.
- DIJKSTRA, H.H., & J. GOUD, 2002. Pectinoidea (Bivalvia, Propeamussiidae & Pectinidae) collected during the Dutch CANCAP and MAURITANIA expeditions in the south-eastern region of the North Atlantic Ocean. — Basteria 66: 31-82.
- HERTLEIN, L.G., 1969. Family Pectinidae Rafinesque, 1815. In: R.C. MOORE, ed., Treatise on invertebrate paleontology. Part N, Mollusca 6, Bivalvia 1: 348-373. Kansas.
- MERRILL, A.S., 1959. A comparison of *Cyclopecten nanus* Verrill and Bush and *Placopecten magellanicus* (Gmelin). — Occasional Papers on Mollusks 2 (25): 209-228.
- REDFERN, C., 2001. Bahamian seashells. A thousand species from Abaco, Bahamas: 1-280. Boca Raton.
- SCHEIN, E., 1989. Pectinidae (Mollusca, Bivalvia) bathyaux et abyssaux des campagnes BIOGAS (Golfe de Gascogne) systématique et biogéographie. — Annales de l'Institut Océanographique, Nouvelle Série, 65: 59-125.
- THIELE, J., 1935. Handbuch der systematischen Weichtierkunde. Band 2: 779-1154. Jena.
- VAUGHT, K.C., 1989. A classification of the living Mollusca: i-xii, 1-195. Melbourne (USA).
- VERRILL, A.E., 1897. A study of the family Pectinidae, with a revision of the genera and subgenera. — Transactions of the Connecticut Academy of Arts and Science 6: 41-95.
- WALLER, T.R., 1984. The ctenolium of scallop shells: functional morphology and evolution of a key family-level character in the Pectinacea (Mollusca, Bivalvia). — Malacologia 25: 203-219.
- WINCKWORTH, R., 1932. The British marine Mollusca. — Journal of Conchology 19: 211-252.