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Five new species of *Neolepton* Monterosato, 1875 from the northern Atlantic, with some data concerning *N. guanche* Salas & Gofas, 1998 (Bivalvia, Heterodonta, Neoleptonidae)

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Abstract: *Neolepton victor* spec. nov. and *N. arjanbosi* spec. nov. from the Cape Verde Islands, *N. moolenbeeki* spec. nov. from the Canary Islands, *N. faberi* spec. nov. and *N. peetersae* spec. nov. from the Caribbean are described. Some additional data concerning *N. guanche* Salas & Gofas, 1998 are given.

Introduction: Working on the marine Bivalves of Aruba, Bonaire and Curaçao (West Indies, Netherlands Antilles), I came across two *Neolepton*-species unknown to science. Unknown, because it has been proved -in spite of thorough search- that there is no literature at all available about this subject, at any rate not about species from the NW Atlantic. So I compared the specimens with the many samples of **Neoleptonidae** from the East Atlantic in the collection LH and with the *Neolepton*-species described in the elaborate study of Salas & Gofas (1998), the only relevant recent publication. Surprisingly with the result that these investigations once more turned out in three undescribed species: two from the Cape Verde Islands, collected by Mr. A. J. Bos, and one from the Canary Islands. To confirm the results mentioned and to have a more complete survey, I also examined the **Neoleptonidae** of ZMA. In addition to this some dozens of samples from the collection of the Nationaal Natuurhistorisch Museum, Leiden have been investigated. Unfortunately I did not get permission to process the results in this paper, owing to this the scientific results, in particular con-

cerning the distribution of the new East Atlantic species, are considerably reduced. For this reason Mr. A. J. Bos again offered me a large quantity of uninvestigated shell-grit from the beaches of Sal, Cape Verde Islands, so that I could increase the number of specimens, although the number of locations could not be extended. To verify the identity of *N. guanche* Salas & Gofas, 1998 -in connection with the additional data concerning the dredged specimens and regarding the differences with *N. moolenbeeki* spec. nov.- I asked for the holotype in MNHN. Thanks to the helpfulness of both I could start with a rather large quantity of reference material.

A *Neolepton* is very small (3mm at the most) and its details are minute, nevertheless its hinge plate is complicated and its dentition rather difficult to interpret. Therefore I have reproduced figures of the hinge plate for a better understanding of the notation -as indicated by Chavan in Moore (1969)- of the cardinal- and lateral teeth (figs. 1 and 2).

Strangely enough one can see the same combination of two different forms of *Neolepton*-species on three locations (in the Caribbean, the Canary Islands and in the Cape Verde Islands): one with a roundish oval outline and almost equilateral, the second species subquadrate with a produced posterior part, being clearly inequilateral.

Abbreviations: BMNH = The Natural History Museum, London
MNHN = Muséum National d'Histoire Naturelle, Paris
USNM = United States National Museum, Washington, D.C.
ZMA = Zoölogisch Museum Amsterdam
BH = collection A. J. Bos, The Hague
LH = collection J. van der Linden, The Hague

Systematics

Family NEOLEPTONIDAE Thiele, 1934
Genus *Neolepton* Monterosato, 1875

Neolepton victor spec. nov.
(figs. 3-8)

Type material:
Holotype (ZMA, Moll. 4.02.001, paired shell (disarticulated by ultrasonic cleaning), length 2.6 mm, height 2.4 mm.
Paratypes from the type locality: 1 left valve, 2 right valves (ZMA, Moll. 4.02.002); 2 left valves, 2 right valves (LH); 3 left valves, 3 right valves (BH); 1 left valve, 1 right valve (BMNH); 1 left valve, 1 right valve (MNHN).
No other type material available.

Type locality: Cape Verde Islands, Sal, intertidal, beach of Santa Maria (AJB 1997).

Description: The shells are small (length 1.5-2.7 mm, height 1.3-2.4 mm), equivalve, decidedly inequilateral: umbones moved in the direction of the anterior margin. Outline roundish subquadrate; posterior dorsal margin raised and almost on level with the beaks; on the posterior side somewhat truncated, anterior margin sloping down, just below the horizontal midline abruptly rounded into the ventral margin. Umbones narrow, small and rather pointed.

Prodissoconch circular, diameter about 180 µm, surface pitted and demarcated by a distinct rim. Sculpture of the shell with numerous close-set and flat commarginal ribs, equally spaced from the umbo to the ventral margin. On some specimens the commarginals are very faint. On the umbonal and posterior region the commarginal ribs are crossed by delicate radial striae, slightly beading the concentric ribs; on the anterior area the radial striae are reduced to almost microscopical lines, fading before the horizontal midline. Hinge plate on the left valve with two cardinal teeth and one lateral. Cardinal 2b has a rhomboidal shape (in direct view), pointing upwards and slightly inclined in dorsal direction (side view). Cardinal 2a is short, at its dorsal end fused with the centre of 2b; both together forming a figure like a hammer. The single lateral elongated and very narrow, parallel with and close to the posterior dorsal margin. On the right valve three cardinal teeth and two posterior laterals. Cardinals 3a and 3b very thin and hooked like a reversed 7, the 3a almost fused with the dorsal margin; nevertheless visible because it is generally dull and chalky white. Cardinal 1 stout, triangular and pointed vertically. Lateral PI heavy and rather elongated, PIII very narrow and very close to the margin. Ligament mainly internal, attached to a rather deep, triangular resilifer just beneath the beaks (visible in direct view). The two adductor scars subequal; pallial line entire; inner margin smooth.

Colour from semitransparent white to orange-brown, often with rust-coloured blotches on the posterior region.

Discussion: *N. victor* is the largest and most brightly coloured *Neolepton* of the northern Atlantic and belongs to the group of species with a more or less "squarish" outline.

N. guanche Salas & Gofas, 1998 is considerably smaller (length about 1.5 mm), is unicoloured white to dark orange, opaque white with translucent spots on its central region, its cardinals 2a and 2b fused like a 7 and not hammer-shaped, has a different outline, the anterior area more produced and pointed, has a more protruding umbo and its commarginals are narrower and more crowded. The differences with other species are discussed below.

Note: *N. victor* also has, like the other *Neolepton*-species, an external ligament, but it is hardly visible and therefore not mentioned again in the descriptions of the following species.

Distribution: Endemic to the Cape Verde Islands, Sal, probably only intertidal.

Derivatio nominis: victor (Latin), *dictum sapienti sat est*, but for the other ones: because this species eventually still gained the victory.

Neolepton arjanbosi spec. nov.
(figs 9-14)

Type material:
Holotype (ZMA, Moll. 4.02.003), left valve, length 1.0 mm, height 0.85 mm.
Paratypes from the type locality: 3 left valves, 3 right valves (ZMA, Moll. 4.02.004); 3 left valves, 3 right valves (LH); 3 left valves, 3 right valves (BH); 1 left valve, 1 right valve (BMNH); 1 left valve, 1 right valve (MNHN).
No other type material available.

Type locality: Cape Verde Islands, Sal, intertidal, beach of Santa Maria (AJB 1997).

Description: The shells are minute (length 0.8-1.3 mm, height 0.7-1.2 mm), equivalve, subequilateral -the posterior part slightly larger and truncated, on the anterior side a little pointed-, almost circular to somewhat ovate and rather inflated. The posterior and anterior dorsal margin sloping downwards, the posterior one just a little more raised than the other. Umbones nearly central, prosogyrate, roundish and rather protruding.

Prodissoconch very small, circular, diameter about 150 µm, surface granulated, its apical area like a minute crater bordered by a raised edge and surrounded by two or three other raised rings. The numerous close-set commarginal ribs, regularly spaced, narrow and sharp-lined, are crossed by more or less faint radial striae, mainly -but not exclusively- on the posterior region. On the left valve the cardinals are hammer-shaped: 2b, in direct view, broad on the dorsal side and ventrally more pointed, connected with 2a not at the dorsal end, but at mid-length. The lateral PII rather strong and elongate, on its dorsal end fused with the margin. Right valve with the cardinals 3a and 3b connected and hooked, both very thin, 3a almost on the dorsal margin. Cardinal 1 strong, rather short, erected. The lateral PIII thin, low and short, close to the margin; PI heavy and more elongate. Ligament attached to a shallow groove, just partly visible in direct view.

Colour white to yellowish white, some specimens light orange.

Discussion: *N. arjanbosi* is, even within the genus, very small and differs widely from *N. victor* by its shape, dimensions, colour, prodissoconch and sculpture; closely related, on the other hand, to *N. cancellatum* Salas & Gofas, 1998 from the Azores, in size, outline and dentition (both have hammer-shaped cardinals on the left valve), but *N. cancellatum* has more pronounced radial ribs, covering the entire surface and beading the commarginals, the shells are flatter and its colour is always white (or colourless translucent). Moreover, on *N. arjanbosi* the cardinal teeth 1 and 2b are, in side-view, larger and more pointed. The same concerns *N. benguelensis* Salas & Gofas, 1998 from South Angola (not investigated by the author). So it is not inconceivable that *N. arjanbosi* could be the geographical link between *N. cancellatum* in the North and *N. benguelensis* in the South and the three are just local forms of one species.

Distribution: The Cape Verde Islands, Sal, probably only intertidal.

Derivatio nominis: *N. arjanbosi* is named after my friend Mr. Arjan Bos who has twice made a lengthly collecting-trip to the Cape Verde Islands and donated a lot of material to the author.

Neolepton guanche Salas & Gofas, 1998

Type material: Holotype and 30 paratypes (MNHN).

Type locality: Canary Islands, Tenerife, Pal-Mar, 28°02' N, 16°42' W (intertidal rocks with algal mat).

Discussion: Notwithstanding the elaborate description by Salas & Gofas (1998), there are some additional data concerning *N. guanche* due to the dredged samples off Madeira (ZMA), since the investigated material by Salas & Gofas was collected intertidally or on beaches.

The shells are very small (length up to 2.1 mm, height up to 1.7 mm), inequilateral, roundish subquadrate, the posterior dorsal margin rather straight and horizontal, almost on level with the beaks; the anterior dorsal margin sloping down, slightly indented just before the beak. The posterior side produced and broadly rounded, somewhat truncated, on the anterior side more pointed. Sculpture of numerous crowded, narrow and sharp commarginal striae, about as broad as the very narrow interspaces. Radial sculpture insignificant and generally hardly visible even with 50 x magnification.

Colour of the *dredged* specimens mainly white, a minority yellowish white, the central part of the valves opaque with transparent spots as usual for the species.

Other characteristics in accordance with the original description.

Material examined: Holotype and paratypes (MNHN); a large sample from the type locality (LH) and numerous samples collected on beaches or intertidal (ZMA and LH). Madeira, Machico, depth 30 m, 40 m and 50 m, >100 paired shells and valves (ZMA); Madeira, Bay of Funchal, depth 15 m and 40 m (ZMA); SE of Madeira, depth 78 m, Sta. CANCAP 1.025 (ZMA, don. S. van der Spoel); Madeira archipelago, W of Deserta Grande, depth 144 m, Sta. CANCAP 1.020 (ZMA, leg. Van der Spoel); ibidem, depth 228-240 m, Sta. CANCAP 1.021 (ZMA, don. S. van der Spoel).

Distribution: Extended to the North (about 33° N), off Madeira and Morocco and to a depth of 240 m.

Neolepton moolenbeeki spec. nov.
(figs 15-20)

Type material:
Holotype (ZMA, Moll. 4.02.005, left valve, length 1.45 mm, height 1.25 mm.
Paratypes from the type locality: > 50 valves (ZMA, Moll. 4. 02.006); > 25 valves (LH); 3 left valves, 3 right valves (BH); 2 left valves, 2 right valves (BMNH); 2 left valves, 2 right valves (MNHN).

Type locality: Canary Islands, Tenerife, El Socorro, depth 98 m (G. Perez-Dionis, 1989).

Other material examined: Canary Islands, Tenerife, El Socorro, depth 125 m: 10 left valves, 13 right valves, 7 paired shells (ZMA).

Description: The shells are very small (length 0.9-1.8 mm, height 0.8-1.5 mm), equivalve, subequilateral -posterior part somewhat larger- , almost circular to oval and rather inflated. The anterior and posterior dorsal margin sloping down, the posterior one only a little more raised than the other. Both the anterior and posterior margin gently rounded. Umbones before the vertical midline, prosogyrate, rather protruding and pointed.

Prodissoconch minute, diameter about 130 µm, circular, on the apical side concave with irregular creases and bordered by a conspicuous rim. Sculpture consisting of rather broad, flat and close-set commarginal ribs, the interstices considerably smaller than the commarginals. Radial lines clear on the posterior and umbonal area of the valves, running over the commarginal ribs, faintly decussating them. Hinge plate of the left valve with the two cardinal teeth on the anterior side, fused like a 7; 2b very short in direct view and pointed in side view, the lateral PII elongate, close to and parallel with the dorsal margin. On the right valve the cardinals 3a and 3b very thin and feeble, cardinal 1 on the other hand rather stout, on side view triangular and sharply pointed. The lateral teeth posterior to the beak; PI relatively heavy, PIII elongate and narrow. Ligament internal, attached to the resilifer -a shallow groove- below and parallel with the laterals, just partly visible in direct view.

Colour semitransparent white, some specimens yellow-white. The central area opaque white with translucent dots.

Discussion: *N. guanche* has a completely different outline: more "squarish", the anterior side somewhat pointed, while *N. moolenbeeki* has a roundish oval shape. Different is the sculpture on both: on *N. guanche* the commarginal ribs are very narrow, razor-sharp, very crowded, on *N. moolenbeeki* they are larger, more rounded and flatter; radial sculpture is clearly visible on *N. moolenbeeki* and almost obsolete on *N. guanche*. Furthermore, the resilifer on *N. guanche* is more elongated and largely visible in direct view and the apical area on *N. moolenbeeki* is depressed, not on *N. guanche*.

N. moolenbeeki has the same suboval shape as *N. sulcatulum* (Jeffreys, 1859), but the latter is completely (semi)transparent white and the first always has an opaque white central part with translucent spots. The differences of the prodissoconchs are obvious: on *N. guanche* the prodissoconch is rounded, rather flat, large (about 230µm) and has an insignificant bordering rim, on *N. moolenbeeki* it is protruding and pointed, very small (about 130 µm), concave apically and the rim is conspicuous. The latter species has a more prominent radial sculpture too.

N. arjanbosi from the Cape Verde Islands is also similar in shape, but much smaller (up to 1.3 mm versus 1.8 mm), has no opaque, transparent, spotted central area and has a different dentition (hammer-shaped fused cardinals on the left valve). Recently *Neolepton discriminatum* Palazzi & Villari, 2001 has been described as yet only known from submarine caves of Taormina, Sicily. The species is still smaller, up to circa 1 mm, almost perfectly circular (the height a trifle more than the length), without an opaque white central part with transparent spots and it has a much larger prodissoconch.

Distribution: *N. moolenbeeki* is probably not an intertidal species; Canary Islands, dredged off Tenerife at a depth of 98-125 m.

Derivatio nominis: Named after my friend Mr. R. G. Moolenbeek, curator of the department Malacology of ZMA, by way of thanks for his never ceasing willingness to cooperate with me.

Neolepton faberi spec. nov.
(figs 21-26)

Type material:
Holotype (ZMA, Moll. 4.02.007), left valve, length 1.6 mm, height 1.4 mm.
Paratypes from the type locality: 7 left valves, 4 right valves (ZMA, Moll. 4.02.008); 4 left valves, 3 right valves (LH); 1 left valve, 1 right valve (USNM); 1 left valve, 1 right valve (MNHN).

Type locality: West Indies, Jamaica, N coast, Ocho Rios, depth 20 m (Sta.fab97/06; M.J. Faber,1997).

Other material examined: West Indies: Netherlands Antilles, Aruba, Boca Catalina, depth 8 m, 1 left valve (ZMA); Aruba, Mangel Halto, depth 15-25 m, 7 left valves, 4 right valves, 1 paired shell (ZMA); Aruba, 3 left valves, 2 right valves (ZMA); Belize, Carrie Bow Cay, St. Rüt, depth 30 m, 3 left valves, 2 right valves (ZMA); Dominican Republic, J. Dolio, 2 km W of Metro Pier, depth 23 m, 3 left valves, 3 right valves (ZMA), 2 left valves, 1 right valve (LH); Grand Turk, N point, "Cesals" Reef, depth 41 m, 1 left valve, 4 right valves (ZMA); Santa Lucia, Anse Chastanet, depth 20 ft., 1 left valve, 1 right valve (ZMA); Tobago Cays, depth 10 m, 1 left valve, 1 paired shell (ZMA); Puerto Rico, La Parguera, Media Luna, depth 12 m, > 25 valves (ZMA), 6 left valves, 6 right valves (LH); Netherlands Antilles, Saba, Ladder Labyrinth, NW of Fort Bay, depth 10-15 m, 6 left valves, 9 right valves (ZMA). Honduras, Utila (Bay Islands), depth 15 m, 5 left valves, 3 right valves (ZMA); Cuba, Maria La Gorda, 30 m, 2 left valves, 4 right valves (ZMA).

Description: The shells are very small (length 1.2-1.9 mm, height 1.0-1.6 mm), equivalve and clearly inequilateral, posterior part much larger. Outline roundish subquadrate; broadly rounded and somewhat truncated posteriorly, hardly pointed on the anterior side. Posterior dorsal margin on level with the beak or even raised above it, anterior dorsal margin sloping downwards, ventral margin gently rounded. Umbones prosogyrate, narrow, small and not very protruding.

Prodissoconch circular, apically truncated, diameter about 200 µm, nearly smooth and surrounded by a rim. Sculpture on the valves with numerous close-set and very narrow commarginal ribs. Microscopical radial striae, mainly on the posterior region, running over the commarginals and often fading halfway the ventral margin. Hinge plate feeble, on the left valve cardinal 2b short and pointed in vertical direction, in

direct view inclined to the elongate 2a and due to this these fused cardinal teeth look more an apostrophe than the figure 7. The lateral, on the other side of the beak, is very inconspicuous and very close to the dorsal margin. On the right valve the cardinal teeth 3a and 3b very weak and thin, 3a elongate, 3b very short (difficult to detect). Cardinal 1 more distinct, however far from prominent, truncated in vertical direction. The laterals on the opposite edge are both thin and close together, PIII not easy to detect. Resilifer a shallow groove, not visible in direct view.

Colour semitransparent white or yellowish white, a single specimen light pink.

Discussion: Surprisingly the genus *Neolepton* was still unknown in the NW Atlantic. Only *N. profundorum* Allen, 2000 from the Argentine Basin (depth between 1000 m and 2500 m) and *N. cobbi* (Cooper & Preston, 1910) from the Falkland Islands are known from the SW Atlantic. Apart from the disjunct distribution areas, the species are very different from *N. faberi* (and from the following species), the first has an almost obsolete sculpture, the latter has the unique character (within the genus) of the beaks situated posterior to the vertical midline (referring to Salas & Gofas, 1998).

N. faberi and *N. victor* from the Cape Verde Islands are very similar in shape. However, the first species is much smaller (1.9 mm versus 2.7 mm), is not so brightly coloured and never has rust-brown blotches; hinge plate and dentition are obviously weaker and smaller than on *N. victor* and the commarginal ribs are much coarser on the latter.

N. guanche from the Canary Islands is the third species with a more or less subquadrate outline, but it differs from *N. faberi* by its straighter posterior dorsal margin, its more truncated posterior margin and its more pointed anterior margin, moreover the length/height ratio on both is different: on the holotype of *N. guanche* 1.23 on *N. faberi* down to 1.15. *N. guanche* has much finer and more crowded commarginal striae, has a much coarser dentition and above all the opaque white central area with the translucent spots, lacking on *N. faberi*.

Distribution: The Caribbean, as far as known at depths of 8-45 m.

Derivatio nominis: Named after Mr. M. J. Faber, honorary associate of the department of Malacology of the ZMA and specialist on the West Indian gastropods.

Neolepton peetersae spec. nov.
(figs 27-32)

Type material:
Holotype (ZMA, Moll. 4.02.009), left valve, length 1.50 mm, height 1.35 mm.
Paratypes from the type locality: 10 left valves, 4 right valves, 3 paired shells (ZMA, Moll. 4.02.0010); 4 left valves, 4 right valves, 2 paired shells (LH); 1 left valve, 1 right valve (USNM); 1 left valve, 1 right valve (MNHN).

Type locality: West Indies, Netherlands Antilles, Aruba, Mangel Halto, depth 15-25 m (Sta.pee/21; I. Peeters,1992).

Other material examined: West Indies: Netherlands Antilles, Aruba, 4 left valves, 1 right valve, 8 paired shells (ZMA); Jamaica, N coast, Ocho Rios, depth 20 m, 1 left valve, 2 right valves (ZMA); St. Vincent, Buccament Bay, depth 20 m, 3 left valves, 1 right valve (ZMA). Honduras, Utila (Bay Islands), depth 15 m, 3 left valves, 4 right valves (ZMA).

Description: The shells are very small (up to 2.0 x 1.7 mm, but generally much smaller), equivalve, nearly equilateral to slightly inequilateral, not very inflated. Outline subcircular to suboval, the posterior region somewhat produced and truncated, the more so when the size increases. Posterior dorsal margin gradually sloping down, the initial part almost on level with the beak; the anterior dorsal margin clearly sloping downwards. Umbones rounded and rather prominent, prosogyrate or almost orthogyrate.

Prodissoconch circular, diameter about 170 µm, apically flattened or even concave, pitted and bordered by a groove. Sculpture on the valves with numerous dense, very narrow, sharply cut commarginal striae, crossed by microscopical, laterally diverging radial lines, on the central region fading in the direction of the ventral margin. Hinge plate with on the left valve the two for *Neolepton* characteristic cardinal teeth: the anterior one elongate and more or less parallel with the dorsal margin, the other -the short 2b- fused with the former on its posterior side and together forming a somewhat deformed figure 7; on the posterior dorsal margin one narrow lateral. The right valve with three cardinals, two minute teeth fused like a reversed 7, the third -stouter- beneath. Posterior from the beak two laterals, the dorsal one very thin and almost merged with the margin. Resilifer short and shallow.

Colour semitransparent pale yellow, sometimes white; central area opaque, mottled with translucent light brown spots.

Discussion: Undeniable *N. peetersae* is very closely related to *N. moolenbeeki* from the Canary Islands, having about the same dimensions and the same shape. Both have the peculiar opaque central area with translucent dots, but comparing the two species the differences become clear: on *N. peetersae* the posterior dorsal margin is more raised (especially the initial part); the posterior region is broader rounded and somewhat truncated; the beaks are less pointed and less protruding; the prodissoconch is larger (170 μm versus 130 μm) and apically more rounded. *N. peetersae* also has a different sculpture: there are more commarginal striae, more crowded, very narrow and sharp, on *N. moolenbeeki* they are broader and well-rounded. Furthermore, the transparent spots on the opaque region are brown, on *N. moòlenbeeki* of the same colour as the main tint of the shell (white or light yellow). At last the dentition is rather coarser than on the latter.

N. faberi, the other *Neolepton*-species from the Caribbean, has a completely different outline (subquadrate), has no opaque central part and has a very feeble hinge plate with minute teeth.

Distribution: The Caribbean, as far as known at a depth of 15-20 m.

Derivatio nominis: Named after Mrs. I. Peeters, who donated her important shell-collection of the ABC Islands to the ZMA.

Note: Strangely enough I did not find any *Neolepton* in the numerous dredged samples of the CICAR-expeditions (Surinam and French Guiana), collection ZMA.

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Selected references

Allen J. A., 2000. A new deep-sea species of the genus *Neolepton* (Bivalvia; Cyamioidea; Neoleptonidae) from the Argentine Basin. Malacologia 42: 123-129.

Chavan A., 1969. Superfamily Leptonacea: 519-537, in R. C. Moore, ed., Part N (Bivalvia), Mollusca 6, vols. 1 and 2. Treatise on invertebrate paleontology. Lawrence, Kansas (Geol. Soc. Am. & Univ. Kansas).

Jeffreys J. G., 1859. Further gleanings in British conchology. Ann. Mag. Nat. Hist. (3) 3: 30-43.

Palazzi S. & Villari A., 2001. Molluschi e Brachiopodi delle grotte sottomarine del Taorminese. La Conchiglia, 32, suppl. 297: 1-53.

Salas C. & Gofas S., 1998. Description of four new species of *Neolepton* Monterosato, 1875 (Mollusca: Bivalvia: Neoleptonidae), with comments on the genus and on its affinity with Veneracea. Ophelia 48: 35-70.

Summarizing translation into Dutch/ Samenvattende Nederlandse vertaling

In dit artikel worden vijf nieuwe soorten **Neoleptonidae** beschreven: twee van de Kaap Verdische Eilanden, één van de Canarische Eilanden en twee uit het Caribische gebied. Daarnaast wordt aanvullende informatie verstrekt betreffende *Neolepton guanche* Salas & Gofas, 1998, oorspronkelijk beschreven aan de hand van littoraal verzameld materiaal van de Canarische Eilanden. Inmiddels waren echter ook gedregde schelpen van deze soort voor onderzoek ter beschikking gekomen. Het verspreidingsgebied kon worden uitgebreid tot circa 33° Noorderbreedte.

Neolepton victor spec. nov. van de Kaap Verdische Eilanden is met een lengte van 2.7 mm veruit de grootste *Neolepton* uit de Atlantische Oceaan benoorden de evenaar en tevens de kleurrijkste: wit tot oranjebruin, vaak met roestkleurige vlekken op het achterste deel van de schelp. De vorm is min of meer "hoekig" (versus rond-ovaal bij menig andere soort uit het genus) en de cardinale tanden in de linkerklep (zie fig. 1 als voorbeeld), 2a en 2b zijn zodanig met elkaar verbonden dat zij tezamen de vorm van een hamer aannemen.

Neolepton arjanbosi spec. nov. van de Kaap Verdische Eilanden is veel kleiner dan de vorige soort: maximaal 1.3 mm. De vorm is bijna rond tot een weinig ovaal. Kleur meestal wit tot geelwit. De voor het genus zo kenmerkende cardinale tanden in de linkerklep zijn eveneens hamervormig met elkaar verbonden. De soort lijkt veel op *N. cancellatum* Salas & Gofas, 1998 van de Azoren en op *N. benguelensis* Salas & Gofas, 1998 uit Zuid-Angola. De verschillen worden in het bovenstaande uitvoerig belicht.

Neolepton moolenbeeki spec. nov. met een maximale lengte van 1.8 mm is rond tot ovaal. De prodissoconch is extreem klein (diameter 130µm). De cardinalen in de linkerklep zijn met elkaar verbonden in de vorm van het cijfer zeven (7). Kleur semitransparant wit, het centrale deel van de schelp ondoorschijnend wit met transparante kleurloze vlekjes. *N. guanche*, eveneens van de Canarische Eilanden, is meer "hoekig" van vorm, de voorzijde enigszins puntig toelopend. Ook zijn er verschillen in de sculptuur: bij *N. guanche* zijn de commarginale ribben messcherp en staan zeer dicht opeen; de radiale ribben zijn welhaast obsoleet. Bij *N. moolenbeeki* zijn de commarginalen breder, meer afgerond en vlakker en de radiale sculptuur is duidelijk zichtbaar.

Neolepton faberi spec. nov. uit het Caribische gebied heeft een lengte tot 1.9 mm. De achterzijde van de schelp is enigszins afgeknot en veel groter dan de voorzijde, de vorm licht "hoekig". Kleur halftransparant wit, geelwit en een enkele maal licht rose. De tanden in het slot zijn zeer klein; in de linkerklep zijn de cardinalen met elkaar verbonden en vormen samen meer een komma dan een zeven. Deze soort lijkt op *N. victor* wat vorm betreft, maar is veel kleiner, minder kleurrijk en heeft een veel zwakker gebouwd slot.

Neolepton peetersae spec. nov. komt eveneens uit het Caribische gebied en heeft ongeveer dezelfde maximale lengte als *N. faberi*, hoewel veruit de meeste exemplaren veel kleiner zijn. De vorm is rond tot meer ovaal; de kleur half doorschijnend bleekgeel tot wit, het centrale deel is ondoorschijnend met talrijke transparante licht bruine vlekjes. De twee met elkaar verbonden cardinale tanden in de linkerklep vormen samen een min of meer gedeformeerde zeven (7). *N. peetersae* lijkt qua vorm en formaat op *N. moolenbeeki* en beide hebben een opaak middendeel met doorschijnende vlekjes, bij de eerste soort echter bruin en bij de laatste kleurloos. Afgezien van menig ander verschil, is de sculptuur van beide wezenlijk anders: *N. peetersae* heeft zeer dichtopeenstaande, smalle en scherpe commarginale ribben, terwijl die van *N. moolenbeeki* veel breder en meer afgerond zijn.

Figs. 1-2. *Neolepton* spec. Details of the hinge plate.
1. Hinge of left valve; 2a and 2b: cardinal teeth; PII, posterior lateral tooth.
2. Hinge of right valve; 1, 3a, 3b: cardinal teeth; PI and PIII, posterior lateral teeth.

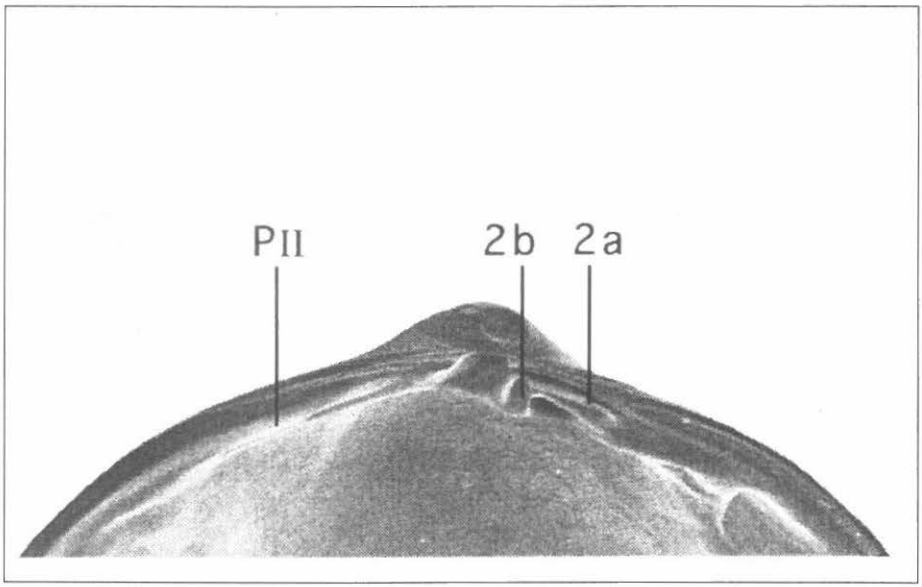


Fig.1

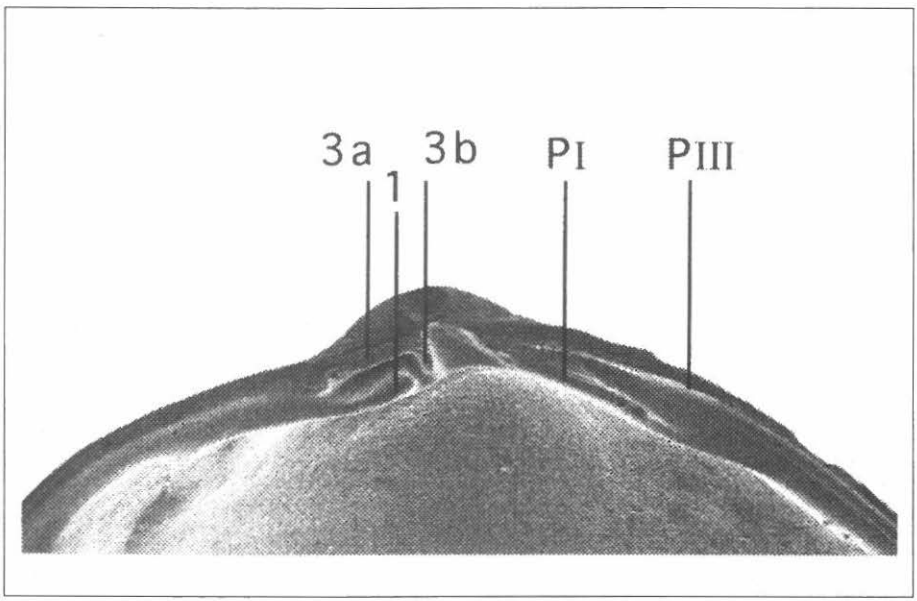
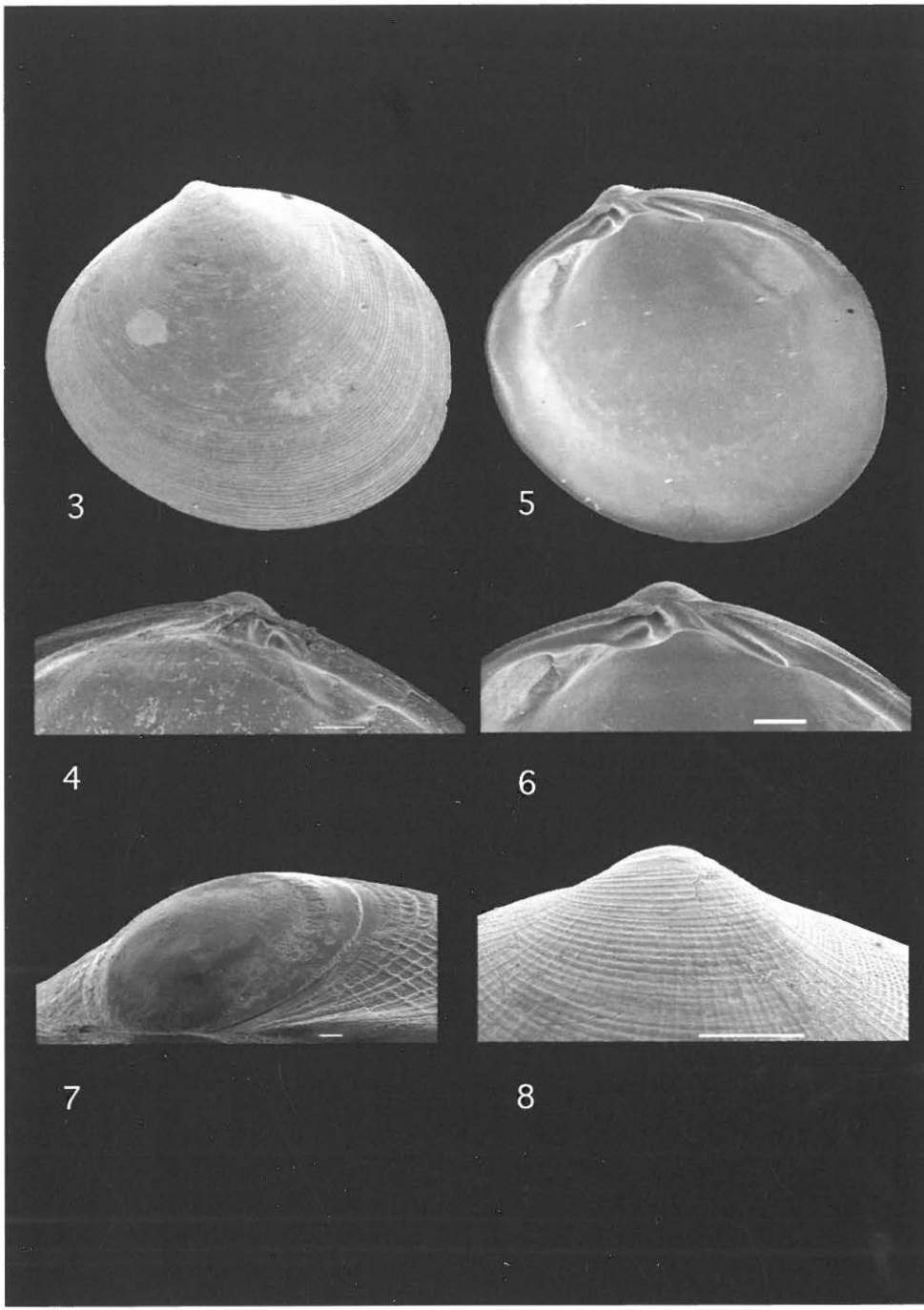


Fig.2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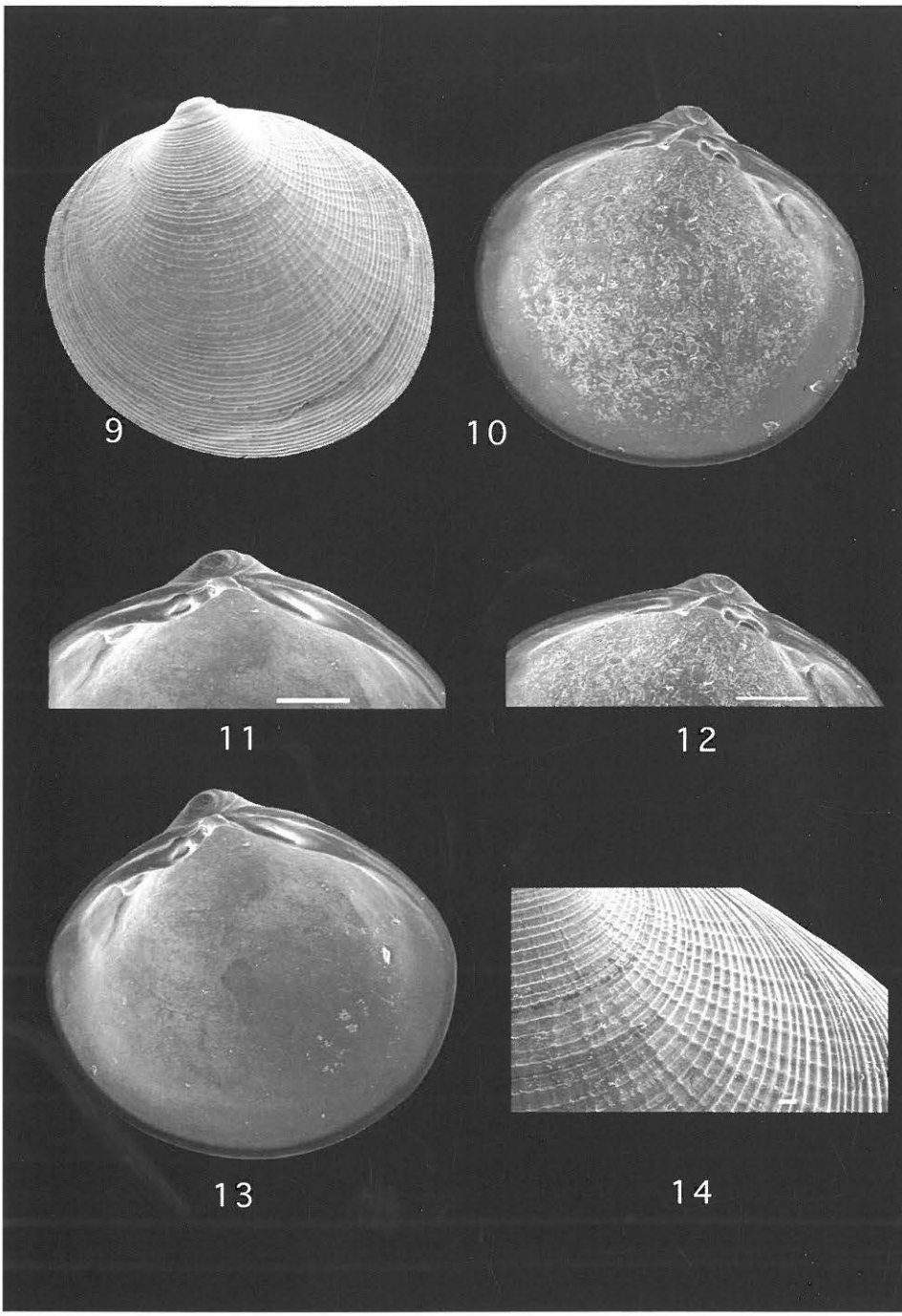
Figs. 3-8. *Neolepton victor* spec. nov., Cape Verde Islands, Sal:
3. holotype left valve outside, length 2.6 mm.
4. hinge of left valve.
5. inside right valve, length 1.8 mm.
6. hinge of right valve.
7. prodissoconch.
8. sculpture outside.

Figs. 9-14. *Neolepton arjanbosi* spec. nov., Cape Verde Islands, Sal:
9. holotype left valve outside, length 1.0 mm.
10. inside left valve, length 1.0 mm.
11. hinge and prodissoconch of right valve.
12. hinge of left valve.
13. inside right valve, length 1.05 mm.
14. detail of sculpture outside holotype.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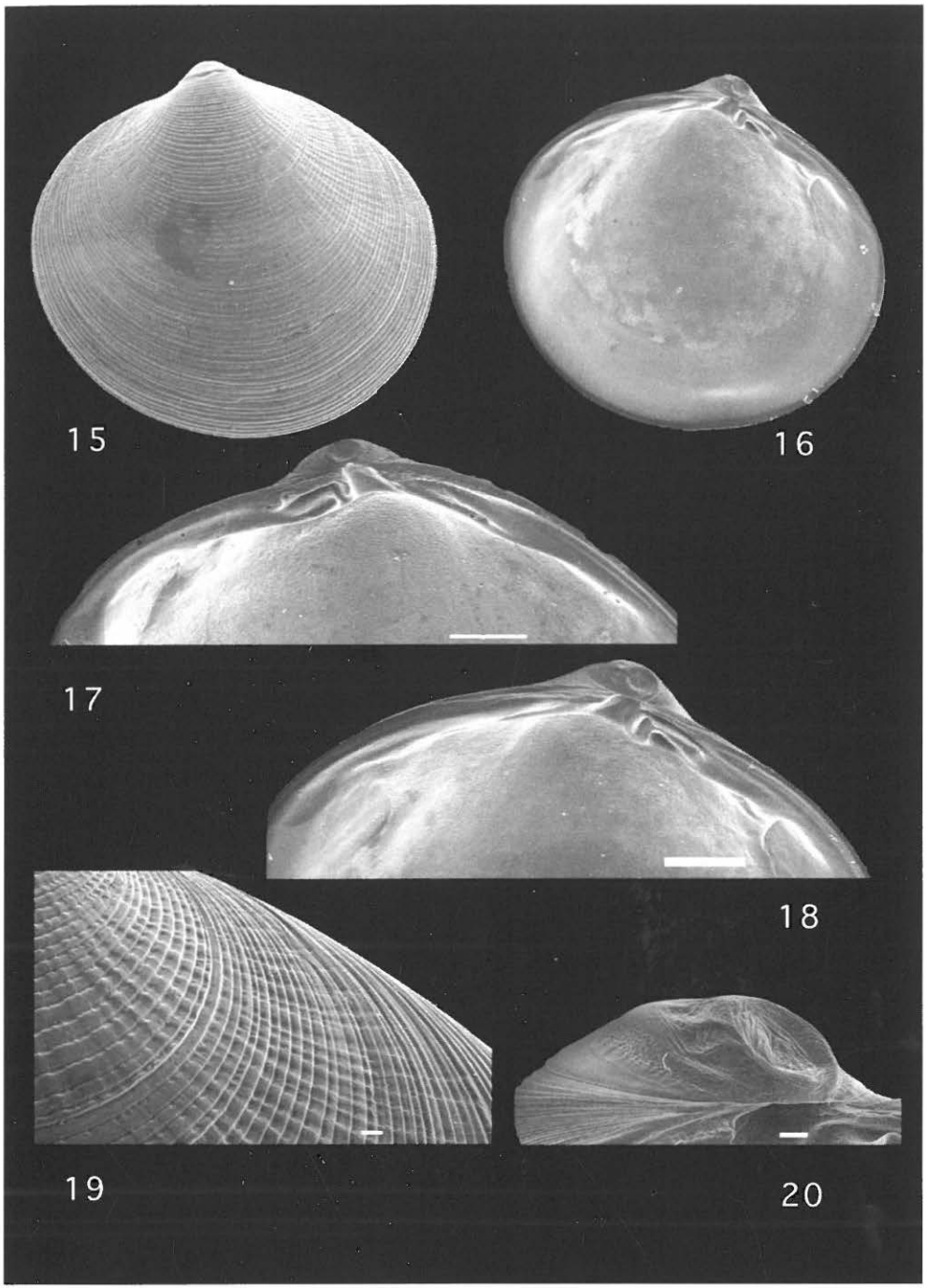
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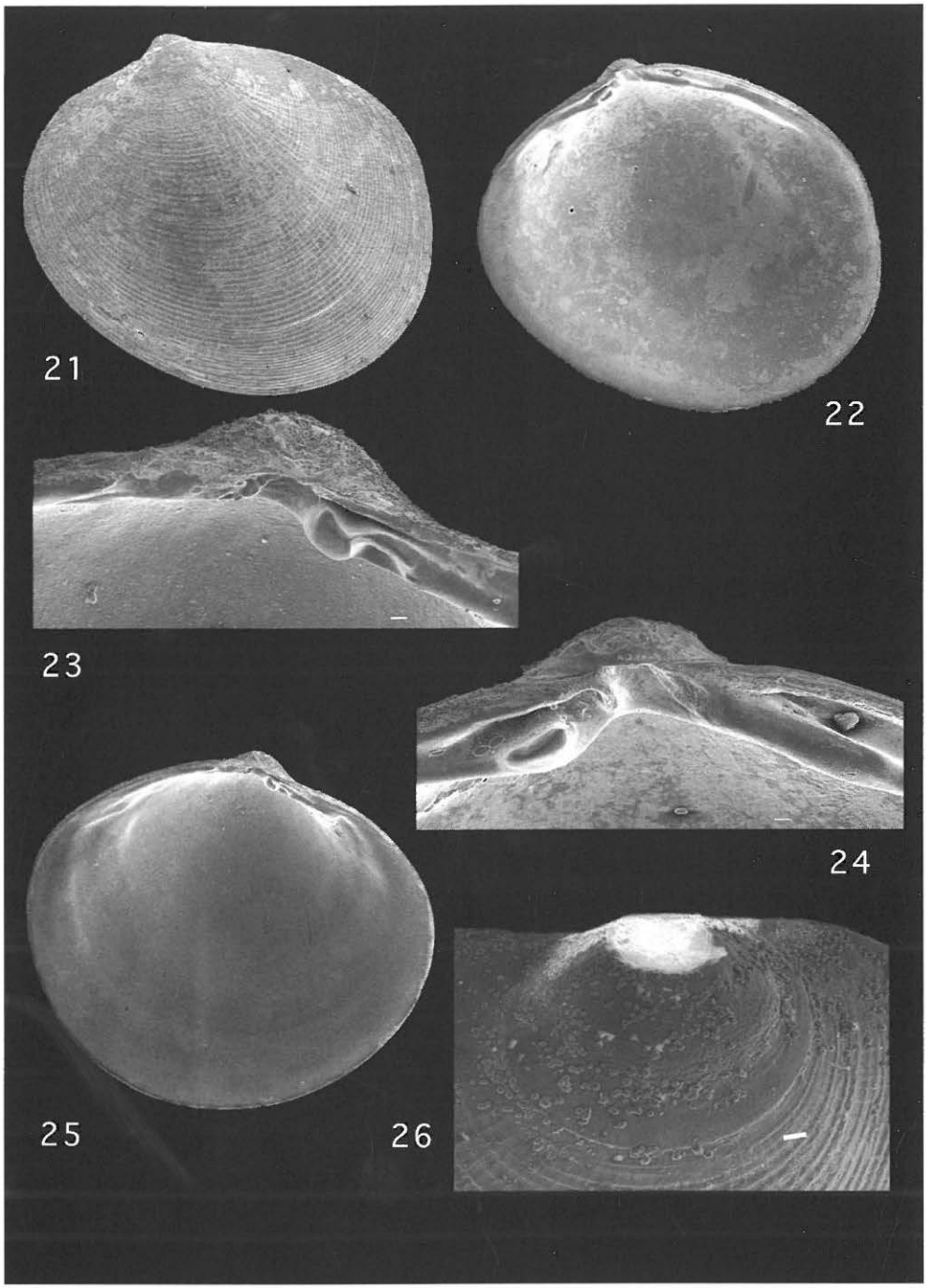
Figs. 15-20. *Neolepton moolenbeeki* spec. nov. Canary Islands, Tenerife:
15. holotype left valve outside, length 1.45 mm.
16. inside left valve length 1.3 mm.
17. hinge of right valve.
18. hinge of left valve.
19. detail of sculpture outside holotype.
20. prodissoconch.

Figs. 21-26. *Neolepton faberi* spec. nov. Jamaica, Ocho Rios:
21. holotype left valve outside, length 1.6 mm.
22. inside of right valve, length 1.7 mm.
23. hinge of left valve.
24. hinge of right valve.
25. inside left valve, length 1.7 mm.
26. detail of sculpture and prodissoconch.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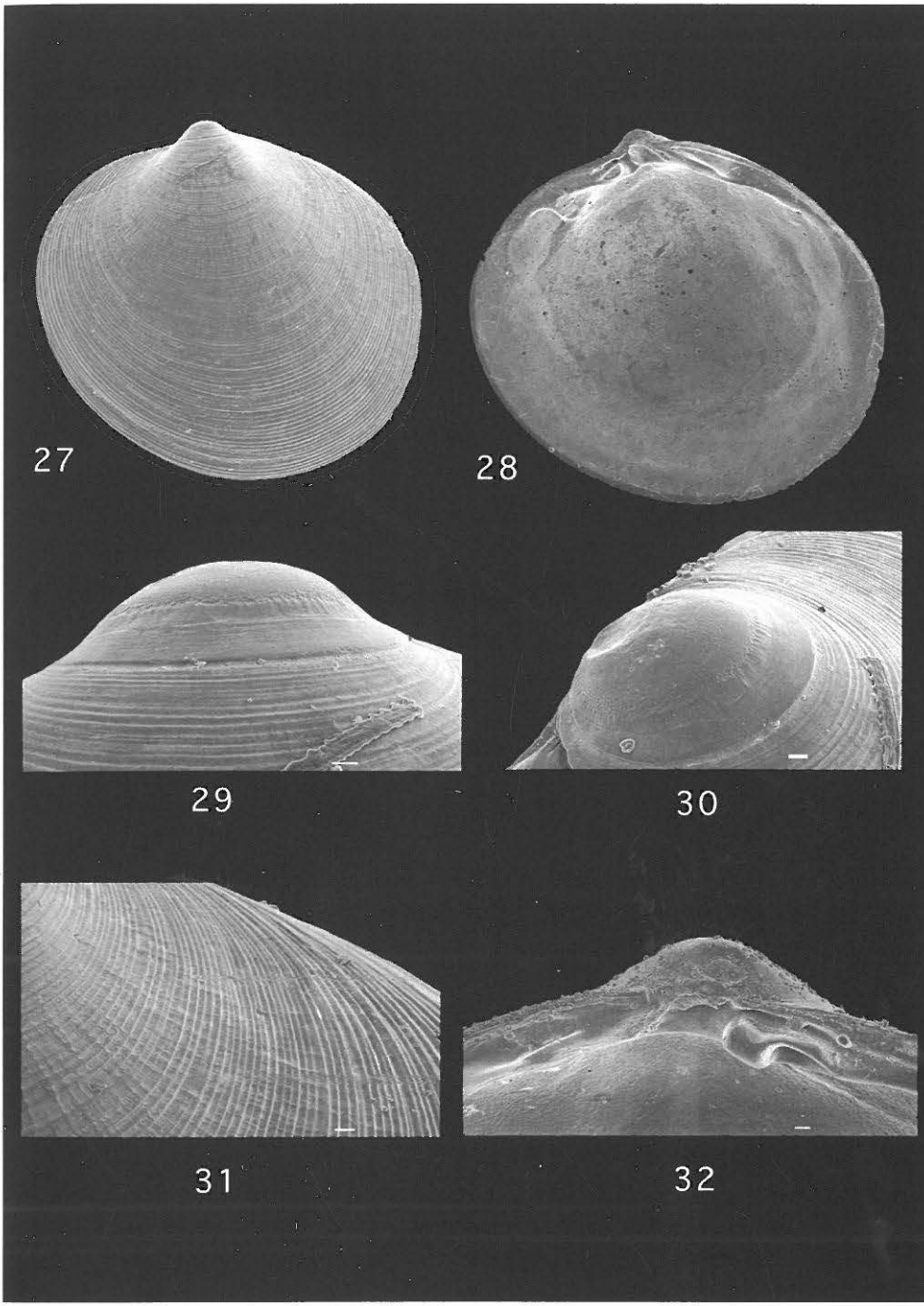
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Figs. 27-32. *Neolepton peetersae* spec. nov. Aruba, Mangel Halto:
27. holotype left valve outside, length 1.5 mm.
28. inside right valve, length 1.6 mm.
29-30. prodissoconch holotype.
31. detail of sculpture outside of holotype.
32. hinge of left valve.