Zeitschrift: Mitteilungen der Naturforschenden Gesellschaft in Bern

Herausgeber: Naturforschende Gesellschaft in Bern

**Band:** 20 (1962)

**Artikel:** Observations on some structural features of the pelecypod shell

Autor: Oberling, J.J.

**Kapitel:** Table of microstructure distribution in some pelecypod families

**DOI:** https://doi.org/10.5169/seals-319512

## Nutzungsbedingungen

Die ETH-Bibliothek ist die Anbieterin der digitalisierten Zeitschriften auf E-Periodica. Sie besitzt keine Urheberrechte an den Zeitschriften und ist nicht verantwortlich für deren Inhalte. Die Rechte liegen in der Regel bei den Herausgebern beziehungsweise den externen Rechteinhabern. Das Veröffentlichen von Bildern in Print- und Online-Publikationen sowie auf Social Media-Kanälen oder Webseiten ist nur mit vorheriger Genehmigung der Rechteinhaber erlaubt. Mehr erfahren

## **Conditions d'utilisation**

L'ETH Library est le fournisseur des revues numérisées. Elle ne détient aucun droit d'auteur sur les revues et n'est pas responsable de leur contenu. En règle générale, les droits sont détenus par les éditeurs ou les détenteurs de droits externes. La reproduction d'images dans des publications imprimées ou en ligne ainsi que sur des canaux de médias sociaux ou des sites web n'est autorisée qu'avec l'accord préalable des détenteurs des droits. En savoir plus

## Terms of use

The ETH Library is the provider of the digitised journals. It does not own any copyrights to the journals and is not responsible for their content. The rights usually lie with the publishers or the external rights holders. Publishing images in print and online publications, as well as on social media channels or websites, is only permitted with the prior consent of the rights holders. Find out more

**Download PDF:** 30.10.2025

ETH-Bibliothek Zürich, E-Periodica, https://www.e-periodica.ch

## Table of microstructure distribution in some pelecypod families

	${f Mesendostr}$	acum Mesecto	Mesectostracum	
	Endostracum	Mesostracum	Ectostracum	
I. Nacro-prisma	atic group			
Nuculidae	Nacreous	Nacreous, with prismatic fast-growt sublayers.	Prismatic h	
Solemyidae	Nacreous	Prismat	ic	
Pteriacea	Nacreous	Apparently partly prismatic, partly nacreous.	Prismatic	
Mytilidae  Mytilus 1  edulis	Nacreous	flabella stages, t	ic, with occasional te structures in early tending to become meous in latest stages.	
Mytilus californianus	Nacreous outer sublayer, flabellate inner sublayer.	(A)	flabellate, tending to homogeneous in late	
Volsella capax	Prismatic	Nacreous	Mostly homogeneous with a few prisms and flabellate structures.	
Septifer bifurcatus	Alternation sublayers of prisms, nacre and occasionally conchiolin.	Prismatic fast-growth sublayer nacreous slow-growt sublayers, distributed as in <i>Acila</i> .		
Lithophaga plumula	Alternation sublayers of prisms, nacre and conchiolin	Nacreous	Granulated	
Unionidae	Nacreous		Prismatic	
Trigoniidae	Nacreous		Prismatic	

 $<sup>^{4}</sup>$  A very thin nacreous sublayer is generally present in the innermost mesectostracum.

	Mesendostracum Mesectostracum		
	Endostracum	Mesostracum	Ectostracum
Periplomatidae	Alternation sublayers of nacre and prisms.	Nacreous	Prismatic
Pandoridae	Nacreous		Prismatic
Lyonsiidae	Nacreous		Grained
II. Foliated gro	oup		
Pectinidae <sup>2</sup>	Foliated, occasionally partly crossed-lamellar.	Foliated, rarely with some crossed-lamellar areas	Foliated
Spondylidae 3	Prismatic crossed-lamellar, or with both structures.	Crossed-lamellar	Foliated
Limidae	Prismatic	Crossed-lamellar	Foliated
Anomiidae Pododesmus macroschismus	Crossed-lamellar	Outer foliated sublayer, inner crossed-lamellar sublayer.	Foliated in left valve, prismatic in right valve.
Anomia peruviana	Crossed-lamellar	Foliated	

- <sup>2</sup> Crossed-lamellae are present in the endostracum and mesostracum of a number of pectinid stocks. In Amussium japonicum the outer half of the endostracum of both valves is crossed-lamellar and Aequipecten circularis shows a thinner crossed-lamellar sublayer. In Euvola zigzag and Pecten vogdesi the outer endostracum is crossed-lamellar only in the right valve, but the major auricular crurae of the left valve may also be crossed-lamellar. In Amussium japonicum the crurae of both valves may be crossed-lamellar. Crossed-lamellae probably also occur in other species, but as they are apt to be very indistinct, the extent of their distribution in some of the pectinids is difficult to ascertain.
- <sup>3</sup> The endostracum of the Spondylidae was observed to be prismatic in Spondylus cf. crassisquama and some individuals of S. sinensis; to include both prismatic and crossed-lamellar sublayers in S. pictorum, S. princeps, S. imperialis, S. ducalis and some individuals of S. sinensis; to be entirely crossed-lamellar in Plicatula gibbosa and Plicatula semicallata.

	Mesendostracum Mes		[esectost	sectostracum	
	Endostracum	Mesostracum		Ectostracum	
Placenta papyracea	Foliated	F	oliated		
Ostreidae	Foliated	Foliated		Foliated in l prismatic in valve.	
III. Complex-la					
Arcidae	Complex	Crossed-lamellar			
Lucinidae	Prismatic, with traces of complex structure.	Crossed-lamel	lar	Prismatic	
Tellinidae	Complex	Crossed-lamel	lar	Prismatic	
Semelidae	Complex	Crossed-lamel	lar	Prismatic	
Donacidae	Complex	Crossed-lamel	lar	Prismatic .	
Sanguinolariidae	Complex	Crossed-lamel	lar	Prismatic	

Crossed-lamellar

Prismatic

Crossed-lamellar, rarely with prismatic fast-growth sublayers.

Crossed-lamellar

Crossed-lamellar

Crossed-lamellar

Mactridae 4

Cardiidae 5

Adacnidae

Tridacnidae

Carditidae

Complex

Complex

Complex

Complex

Complex

<sup>&</sup>lt;sup>4</sup> In the inner portion of the mesostracum of the Mactridae, the first-order lamellae often tend to be inclined, rather than steeply reclined or vertical as in most other pelecypods of the complex-lamellar group. This tendency, while apparent in *Mactra* and Spisula, reaches its maximum in Schizothaerus nuttallii where the lamellae may incline more than  $30^{\circ}$  from the vertical (Pl.V, fig.5). This orientation of the lamellae is correlated with their twisting about in the center of the layer. In some species (e.g.,  $Rangia\ sp.$ ) the lamellae in the inner mesostracum may be very indistinct.

<sup>&</sup>lt;sup>5</sup> All the Cardiidae observed show a crossed-lamellar mesectostracum, except *Clino-cardium* where the mesectostracum includes fibrillar fast-growth sublayers, and crossed-lamellar slow-growth sublayers which overlap in the inner portion of this combined layer to form a crossed-lamellar overlap sublayer (Pl.IV, fig. 9; Pl.VI, fig. 2).

	Mesendostracum Mesectostracum		
	Endostracum	Mesostracum	Ectostracum
Veneridae 6	Complex to homogeneous.	Crossed-lamellar to homogeneous	Prismatic, crossed- lamellar or with both structures.
Petricolidae	Complex	Crossed-lamellar	Prismatic
Astartidae	Vaguely prismatic	Mostly homogeneous	Faintly crossed- lamellar.
Chamidae	Complex	Crossed-lamellar	
Dreissenidae	?	Crossed-lamellar	

6 As Boccild (1930, p. 286—287) has shown, the structure of the Veneridae is highly variable. This variability concerns mostly the ectostracum. This layer is crossed-lamellar in the Circinae, Sunettinae, Pitarinae, Dosiniinae, Gemminae; in the Meretricinae it is crossed-lamellar but in Tivela stultorum the crossed-lamellation is very faint and the layer is almost homogeneous. In the Venerinae, the outer half of the ectostracum is fibrillar, the inner half crossed-lamellar. In the Tapetinae, this layer is fibrillar in all the specimens studied. In the Chioninae the ectostracal structure is highly variable, but this layer always shows some fibrillar structure in its outer portion: in Chione s. s., the ectostracum is not usually clearly separable from the mesostracum; the outermost portion of the ectostracum is fibrillar, the main portion crossed-lamellar; the firstorder lamellae divide inwards about the the mesectostracal boundary into many fine lamellae. In Chione (Gnidiella), Securella, Protothaca grata, Protothaca fluctifraga, Mercenaria campechiensis, Anomalocardia subrugosa, the ectostracum is mostly fibrillar, with a few slow-growth crossed-lamellar wedges; it is distinctly separated from the mesostracum; the outermost mesostracum is distinctly crossed-lamellar. In the main Protothaca group (P. stamminea, P. tenerrima, P. laciniata, P. semidecussata), the ectostracum is entirely fibrillar and is distinctly separated from the mesostracum which tends to be entirely homogeneous; only in P. laciniata could a distinct crossed-lamellar sublayer be observed in the outer mesostracum. The genus Saxidomus, whose subfamiliar status appears doubtful to the author (KEEN, 1951, included it among the Pitarinae) shows the following structure distribution: ectostracum fibrillar, with crossed-lamellar slow-gowth sublayers; mesostracum crossed-lamellar; endostracum complex.