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Table of microstructure distribution in some pelecypod families

	Mesendostracum	Mesectostracum	
	Endostracum	Mesostracum	Ectostracum
I. Nacro-prismatic group			
Nuculidae	Nacreous	Nacreous, with prismatic fast-growth sublayers.	Prismatic
Solemyidae	Nacreous	Prismatic	
Pteriacea	Nacreous	Apparently partly prismatic, partly nacreous.	Prismatic
Mytilidae			
Mytilus[1] *edulis*	Nacreous	Prismatic, with occasional flabellate structures in early stages, tending to become homogeneous in latest stages.	
Mytilus californianus	Nacreous outer sublayer, flabellate inner sublayer.	Mostly flabellate, tending to become homogeneous in late stages.	
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 sublayers, nacreous slow-growth sublayers, distributed as in *Acila*.	Prismatic
Lithophaga plumula	Alternation sublayers of prisms, nacre and conchiolin.	Nacreous	Granulated
Unionidae	Nacreous		Prismatic
Trigoniidae	Nacreous		Prismatic

[1] A very thin nacreous sublayer is generally present in the innermost mesectostracum.

	Endostracum	Mesendostracum Mesostracum	Mesectostracum Ectostracum
Periplomatidae	Alternation sublayers of nacre and prisms.	Nacreous	Prismatic
Pandoridae	Nacreous		Prismatic
Lyonsiidae	Nacreous		Grained
II. Foliated group			
Pectinidae[2]	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	

[2] 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.

[3] 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		Mesectostracum
	Endostracum	Mesostracum	Ectostracum
Placenta papyracea	Foliated	Foliated	
Ostreidae	Foliated	Foliated	Foliated in left valve, prismatic in right valve.

III. Complex-lamellar group

Arcidae	Complex	Crossed-lamellar	
Lucinidae	Prismatic, with traces of complex structure.	Crossed-lamellar	Prismatic
Tellinidae	Complex	Crossed-lamellar	Prismatic
Semelidae	Complex	Crossed-lamellar	Prismatic
Donacidae	Complex	Crossed-lamellar	Prismatic
Sanguinolariidae	Complex	Crossed-lamellar	Prismatic
Mactridae [4]	Complex	Crossed-lamellar	Prismatic
Cardiidae [5]	Complex	Crossed-lamellar, rarely with prismatic fast-growth sublayers.	
Adacnidae	Complex	Crossed-lamellar	
Tridacnidae	Complex	Crossed-lamellar	
Carditidae	Complex	Crossed-lamellar	

[4] 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° 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.

[5] All the Cardiidae observed show a crossed-lamellar mesectostracum, except *Clinocardium* 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 Boggild (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 first-order 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.