

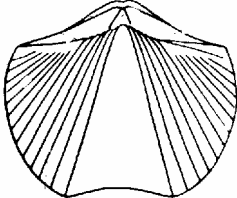
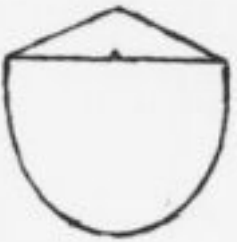
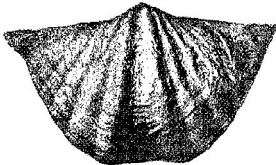
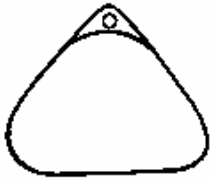
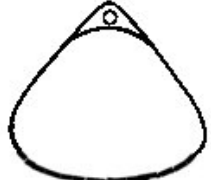
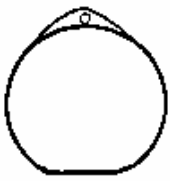

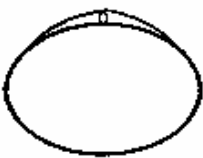


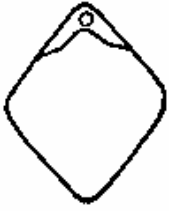


# Determination key brachiopods. Vs 21-01-2007


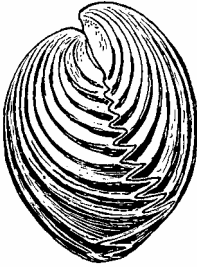

## 1. Shell outline.

	Name	Picture	Description
1.	Round-pentagonal		Outline of five 'straight' stretches, quite equal in length, rounded corners.
2	Square-pentagonal		Outline of five 'straight' stretches, quite equal in length, 'square' corners.
3	Wide-pentagonal		Outline of five stretches, unequal in length, width exceeds length.
4	Drop trigonal		Triangular droplike outline
5	Winged		Outline of five stretches, unequal in length, resulting in pointed 'wings'.

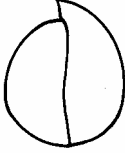



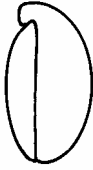

6	Sub trigonal		Outline of three 'straight' stretches, quite equal in length, rounded corners.
7	Round trigonal		Triangular drop-shaped outline.
8	Sub circular		Circular outline, interrupted by a straight front.
9	Sub rectangular		Oval outline, length exceeds width, outline interrupted by a straight front.
10	Oval		Oval outline, width exceeds length.
11	Drop-oval		Drop-like shape, rounded front.

12	Bilobal		Two lobes at the frontal side.
13	Rhomboidal		See figure.


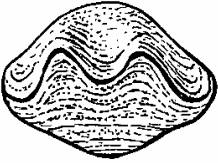
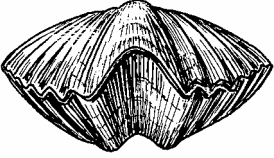
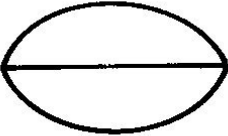
## 2. Side (lateral) profile 1.

	Name	Picture	Description
1	Smooth		Commissure is a smooth continuing line.
2	Teeth		Commissure shows a teeth-like up and down course.
3	Small waves		Commissure shows small waves or rounded teeth.

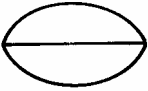










### 3. Side (lateral) profile 2.



	Name	Picture	Description
1	Globos		Pedicle and brachial valve both about (half)spherical.
2	Cynocephal		Pedicle valve rather flat.
3	Plan-convex		Brachial valve rather flat.
4	Biconvex		Both valves bulging outward on both sides, wavelike commissure.
5	Straight-biconvex		Both valves bulging outward on both sides, straight commissure.
6	Concavo-convex		Shells fitting together like a pair of stacked spoons.

#### 4. Anterior (frontal) view 1. (Pedicule valve is on top)

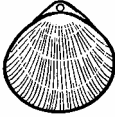
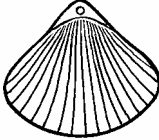
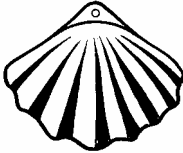

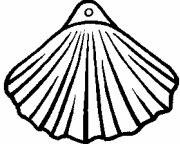


	Name	Picture	Description
1	Pointed		Variable number of teeth-like points.
2	Rounded		Variable number of 'waves'
3	Combined		Combination of a variable number of (often a bit rounded) 'teeth' and 'waves'.
4	Straight		See figure. There are no teeth or waves visible.

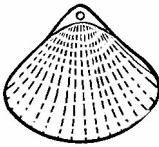
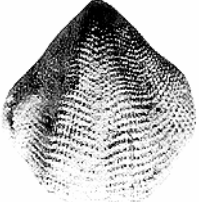
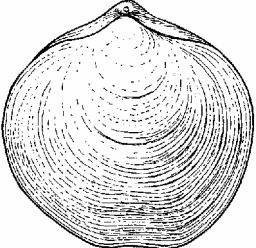
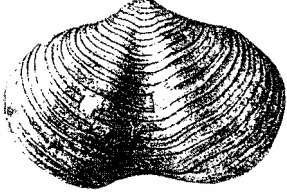
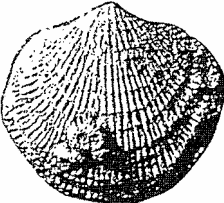
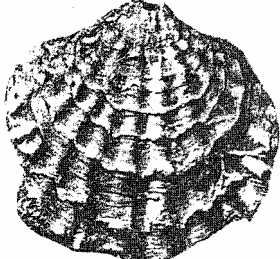
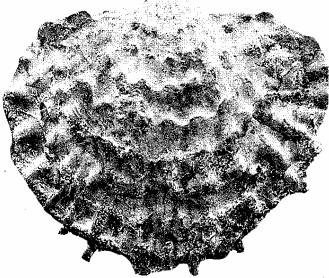
### 5. Anterior (frontal) view 2. (Pedicule valve is on top)

	Name	Picture	Description
1	Rectimarginat		See figure.
2	Ligat		See figure.
3	Round-uniplicat		See figure.
4	Wide-uniplicat		See figure.
5	Pointed-uniplicat		See figure.
6	Weak-biplacat		See figure.
7	Sulciplicat		See figure.
8	Multiplicat		See figure.
9	Episulcat		See figure.
10	Deep-sulcat		See figure.
11	Wide-sulcat		See figure.





12	Antiplicat		See figure.
13	Asymmetric		See figure.

## 6. Decoration.


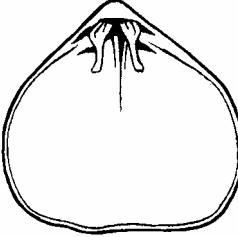
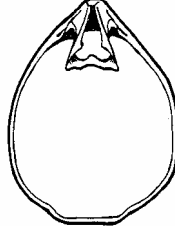
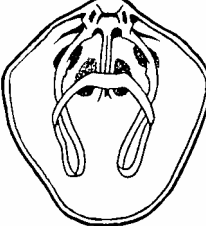
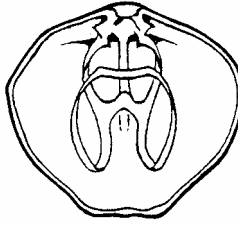
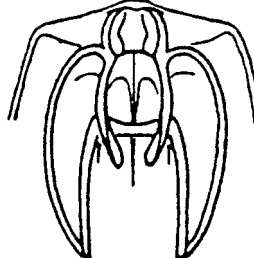
	Name	Picture	Description
1	No decoration	No picture.	No decoration.
2	Finest-ribs		Numerous very faint ribs.
3	Fine-ribs		See figure.
4	Strong-ribs		See figure.
5	Forked-ribs		See figure.
6	Switched-ribs		See figure.
7	Partial-ribs		See figure.
8	Rudimentary-ribs		Ribs of very limited length, starting from the commissure.

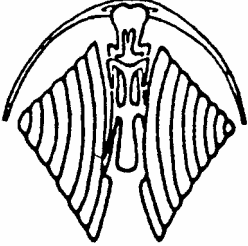
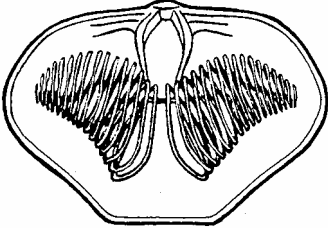
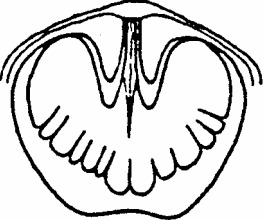
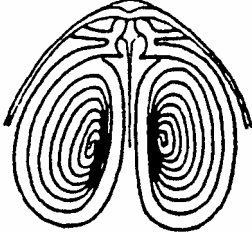
9	Spines		Often partially reduced in length during the fossilization process.
10	Sandpaper		Grain-like structures, often arranged in rows.
11	Faint growthlines		See figure.
12	Strong growthlines		See figure.
13	Faint combined		Ribs and growthlines
14	Strong combined		Ribs and growthlines
15	All combined		Ribs, growthlines and spines

## 7. Position of the Umbo (Apex)

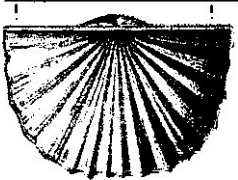
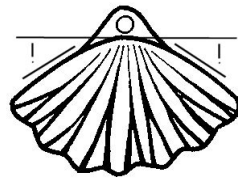
	Name	Picture	Description
1	Straight		See figure.
2	Suberect		See figure.
3	Erect		See figure.
4	Curved		See figure.

## 8. Brachial apparatus.






	Name	Picture	Description
1	Brachiophor		Very short brachial apparatus.
2	Rhynchonellid		Lengthened brachial apparatus, no loop
3	Terebratulid		Small loop
4	Zeillerid		Complex curved
5	Terebratellid		Complex curved, linked with medianseptum.
6	Megantherid		See figure.

7	Athyrid		See figure.
8	Spiriferid		Complex 'spring'-like loops
9	Stringocephalid		See figure.
10	Atrypid		Spiral like loops.

**9. Hinge line.**

	<b>Name</b>	<b>Picture</b>	<b>Description</b>
1	Stropic	 <p>A diagram of a stropic shell. It shows a fan-shaped shell with numerous radial ribs. A horizontal line at the top represents the hinge line, which is straight and parallel to the hinge axis. Two vertical lines extend downwards from the ends of the hinge line to the shell's edge, indicating the hinge axis.</p>	Hinge line straight, parallel to the hinge axis. Often extending over the full width of the shell
2	Astrophic	 <p>A diagram of an astrophic shell. It shows a fan-shaped shell with radial ribs. The hinge line at the top is curved, arching away from the hinge axis. A horizontal line represents the hinge axis, with a small circle at its center. Two vertical lines extend downwards from the ends of the hinge axis to the shell's edge.</p>	Shell edges curved, moving away from the hinge axis.

### 10. Deltidial plates.

	Name	Picture	Description
1	No plates		Free pedicle opening.
2	Xenidium		Total closure by one plate only.
3	Henidium		Multiple plates molten together without a visible seam.
4	Deltidium		Two separated plates (on each side one) of the opening.
5	Syndeltarium		Two plates, grown together.

## Glossary.

	<b>Hinge axis</b>		Imaginary, straight line, running through the hinge which fits the two valves together.
	<b>Umbo</b>		The rear (eldest) part of the valves.
	<b>Brachial valve</b>		Smaller valve, also called dorsal valve.. The 'brachidium' or 'armskeleton' is attached to it.
	<b>Pedicle valve</b>		The larger valve, also called ventral valve, often with the hole of the stem.
	<b>Commissure</b>		Line of junction between the two valves.
	<b>Dorsal valve</b>		See Brachial valve.
	<b>Ventral valve</b>		See Pedicle valve.
	<b>Interarea</b>		Part of the shell growing along the hinge line.
	<b>Hinge line</b>		Outline of the part of the commissure on both sides of the hinge.
	<b>Inarticulata</b>		Brachiopods in which the valves are not hinged by teeth and sockets
	<b>Articulata</b>		Calcareous shelled brachiopods in which the valves are hinged by teeth in one valve and sockets in the other.
	<b>Brachidium</b>		The internal armskeleton to which the lophophore is attached.
	<b>Lophophore</b>		Main food-gathering and respiratory mechanism of a brachiopod.