



Shell Honour



Created by
I & L Weir
Queensland, Australia
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Q1. What is the meaning of **Mollusc**?

- Animal with a soft body usually protected by a shell.
- E.g. Snails, mussels, oysters and cockles.



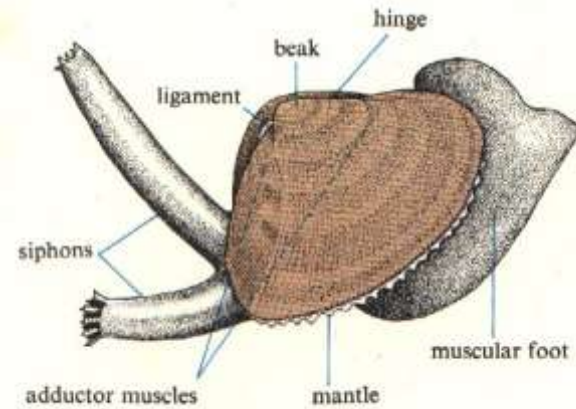


Q2. What are the parts of a mollusc?

A TYPICAL GASTROPOD



A TYPICAL BIVALVE



A GASTROPOD SHELL

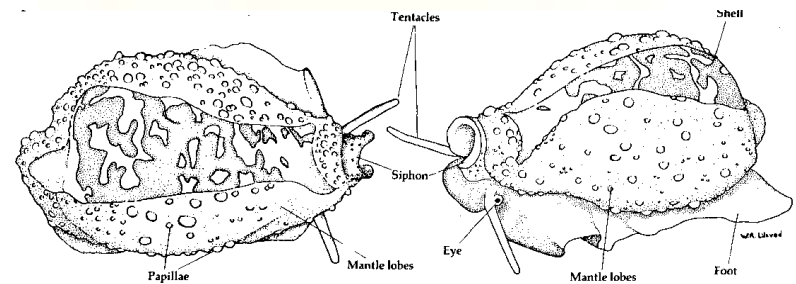
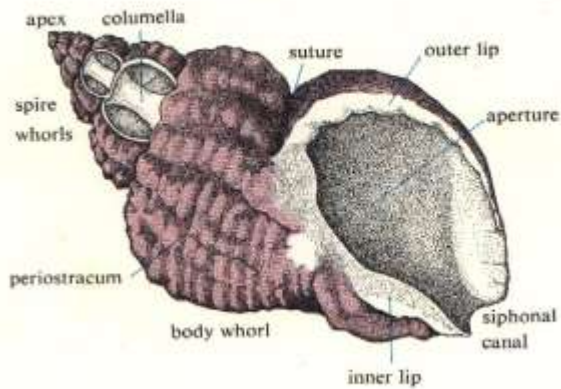


Diagram of the parts of a mollusc.

Q2. What are the **parts** of a mollusc?

- **Mantle**: outside skin which lines and protects the shell.
- **Foot**: broad, flat shape enables the mollusc to travel over rocks, sand and reefs. Attached to inside of shell.
- **Mouth**: All molluscs have a mouth. Univalves have tongue with tongue with large amount of tiny teeth.

Q2. What are the **parts** of a mollusc?

- **Ribs**: On edge of mantle are secretory glands which are different sizes and shapes. Glands make ribs and protuberances giving characteristic shape to shell.
- **Valves**: Only on uni-valves. Valves are joined at base by a hinge.

Q2. What are the **parts** of a mollusc?

- **Dorsal Border**: Back edge of bi-valve shell, near side of univalve farthest from apex.
- **Apex**: Tip, small end.
- **Operculum**: Horny shell trap door which blocks entrance for protection. Joined to foot.
- **Canal**: Groove near opening of spiral shells



Q3(a) Name 5 different **habitats** where molluscs are located.

■ 1. **Land:** Snails



■ 2. **Sand/Rubble:**

Olives, Helmets, Pipis
Sand snails.



■ 3. **Rocks:**

Limpets,
Chitons, Mulberry.



4. **Coral & reefs:**

Cones, Tritons, Cowry
and Clams.



Q3(a) Name 5 different **habitats** where molluscs are located.

- 5. **Mud & Mangroves:**

Bubbles, Ears, Murex, Whelk and Oyster.



- 6. **Continental Shelf:**

Scallops, Cones, Tritons, Tusks, Augers and Volutes.



- 7. **Deep Ocean:**

(very few) Nautilus and Horn shell





Q3b. List **locations** of shells in the world.

- Australia – Great Barrier Reef
- Solomon Islands
- Philippines
- New Caledonia
- U.S.A. – New England & Maine
- New Zealand
- Florida
- Cuba





Q4. Describe the **movement** of shells

- Many molluscs travel in their early stages but then settle and become permanently attached to one place by their foot.
- Some bivalves (scallops), swim by opening and shutting their shells, forcing themselves along slowly by protruding and contracting a long foot.
- Most univalves glide or creep over the floor of the sea by wave-like movements of the foot, which also frequently gives off a slime to lubricate the way.



Q5. How do shell animals **protect** themselves?

- Shell protects the mollusc or animal inside.
- Shell closes quickly when danger approaches
- Some hold tightly to a rock or solid surface.
- Many of them become covered with barnacles or other sea creatures that make them look like their surroundings.
- If a shell becomes damaged the mantle does repair work.
- Many shells, including most oysters, have the power of producing a secretion, which covers up any irritation. This is how pearls are made.



Q6. How are shells made and from what **materials** are they made?

- Numerous secretory glands in the edge of the mantle produce the slimy substance which is laid in layers until the shell is complete.
- These glands along the edge of the mantle are of different sizes and shapes, so that the ribs produced by the glands give each species its special shell.
- Scattered among these glands are others, which secrete pigments, producing the varied designs, and still others which produce horny substances.



Q7. List and explain five uses made of shells by man.

- **For Food:** many of the larger molluscs are cooked in their own shell.
- **For Buttons and Buckles:** usually the pearl or trochus shells are used.
- **For Shell Grit:** ground up shells.
- **For Dye:** this is obtained from certain squids.
- **For Birds:** birds sharpen their beaks on cuttlefish.
- **For Bailing Out:** baler shells used for bailing out canoes.
- **For Decorations:** large shells are carved and made into lamps



Q8. Explain the terms
UNIVALVE and **BIVALVE**



UNIVALVE



BIVALVE

Univalve: One piece shells

Bivalve: Consisting of two separate parts joined by a hinge at one edge.



Q9. Name five different **classes** of shells

- **BIVALVES:** These live in the sea or fresh water but never on land.
- **UNIVALVES:** This is the largest group and may live in the sea, in fresh water, or on land.
- **MULTIVALVES (Many Valves):** These live only in the sea and have a shell jointed in eight places, held together by a surrounding girdle. At low tide these may be found sticking to the rocks, where they will be covered at high tide.





Q9. Name five different **classes** of shells

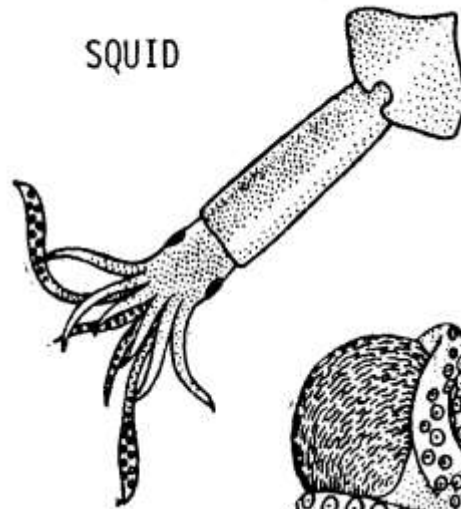
- **TUSK or TOOTH SHELLS:** Live only in the sea. They are in one piece with a tube open at both ends. These lie buried in the mud in deep water, with only their narrow ends protruding and are not very well known.
- **ARMED MOLLUSCS:** These have 8, 9, 10, or more arms. Some have shells externally, internally, or no shell at all. They live only in the sea and many are well known, such as the cuttle fish, squids, sea hare, octopus.



Q9. Name five different **classes** of shells



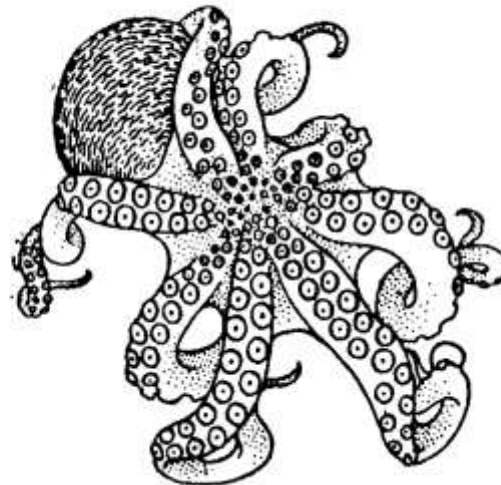
cuttle



SQUID



SEA HARE



OCTOPUS



Q10. Photograph 20 different shells representing a diversity of classes.



Vase Shell- Located amongst mud & rock



Spider Stromb- Located in coral sand & rock



Leopardus Cone Shell –
Located on coral rocks



Textile Cone – Located under rocks in sand

Photographs



Talpa Cowry – Located on sand/rock while diving



Serpents cowry – Located amongst live hard coral



Top shell – Located on coral rock



Lynx cowry – Located on coral rock amongst soft coral

Photographs



Clam shell – Located on the sea floor on coral rock, sand & rubble



Abalone- Located amongst low tidal coral rubble



Eglantina cowry- Located under dead coral slabs



Volute- Located amongst sand & rubble

Photographs



Tiger Cowry- Located amongst hard coral



Money cowry- Located on rocks amongst sea grass



Red Mouth Stromb- Located in coral sand & rock



Ring cowry- Located on rocks amongst sea grass

Photographs



Milk Spotted Cowry- Located under rocks, coral & in caves



Moon shell – Located in sand – follow trails



Scallops – Located in deep water



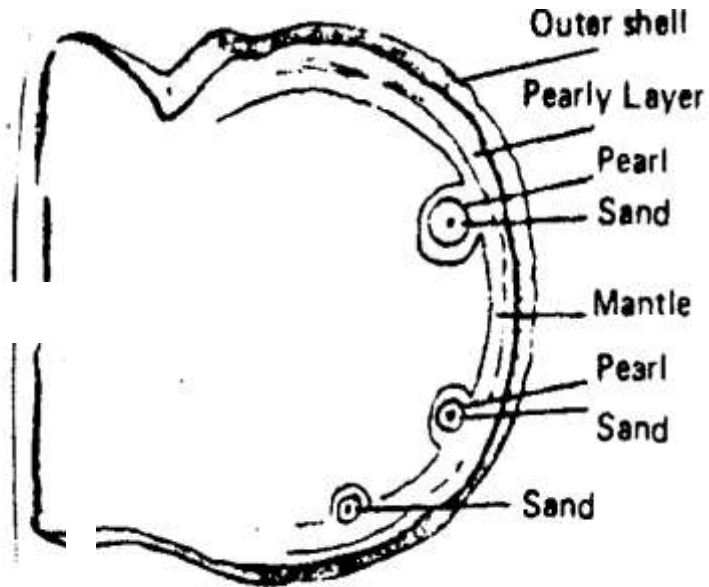
Baler shell – Located buried in sand amongst live coral

Q11a. How are pearls formed?



An oyster pearl is shown in three stages of development in picture below.

Pearls are formed by the oyster's secretion, which surrounds the irritating object, a speck of sand.



11 (b) What striking lesson does the pearl teach us?

- (Read Christ's Object Lessons, pages 115-118).
- "The righteousness of Christ, as a pure, white pearl, has no defect, no stain."
Christ's Object lessons, page 115.
- "Salvation is a free gift, and yet it is to be bought and sold. In the market of which divine mercy has the management the precious pearl is represented, bought without money and without price. In this market all may obtain the goods of heaven."
Christ's Object lessons, page 116.



Q12. Bible Texts about sea creatures and Shells

- Water creatures were created on the 5th day.
Gen. 1:20,21.
- The number of water creatures is innumerable.
Psalms 104:25
- Water creatures perish out of water. - **Isa.50:2**
- Job considered coral of great value. - **Job 28:18**
- Solomon was acquainted with marine life. **1 Kings 4:33**
- Jesus twice used a shell product to teach a spiritual lesson. - **Matthew 7:6; 13:45,46.**

Q12. Bible Texts about sea creatures and Shells

- A business woman was engaged in selling the famous purple dyes secured from the shellfish, Mediterranean murex.- **Acts 16:14**
- The twelve gates of the Holy City are twelve pearls. - **Rev. 21:21**
- Paul does not support the wearing of pearls.
1 Tim. 2:9
- Shell creatures are unfit for food. **Lev. 11:9,10.**