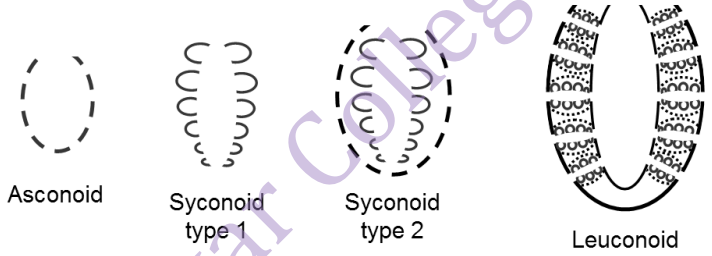
PHYLUM PORIFERA

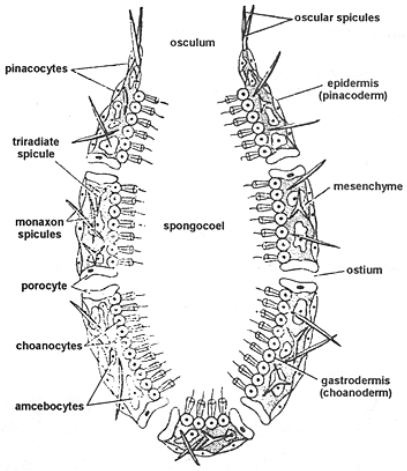
(Pore bearing animals exhibiting multicellular organization)

1. Poriferans are pore bearing, multicellular animals since their body is porous due to presence of **ostia** which are incurrent openings. The ex-current opening is a common, single, large opening situated at the apex called **osculum**.
2. These are made-up of two germ layers an outer **ectoderm** and inner **Endoderm;** hence known as **diploblastic**. There is a layer of matrix between these two cell layers which contains different **amoeboid cells** performing different functions of connective tissue one of those are **archaeocytes**. Archaeocytes play important role in repair and regeneration in sponges.
3. Sponges are **radially symmetrical**.
4. Body Coelom is known as **spongocoel** which is lined internally by collar cells called as **choanocytes**.
5. Sponges have canal systems are of three types namely, **asconoid; syconoid and leuconoid** canal systems.

Types of sponge architecture



6. Sponges contain **endoskeleton** of **spicules** which are made up of either **calcareous** material i.e. calcium carbonate or **siliceous** material i.e. silica.



L.S. of a Sponge

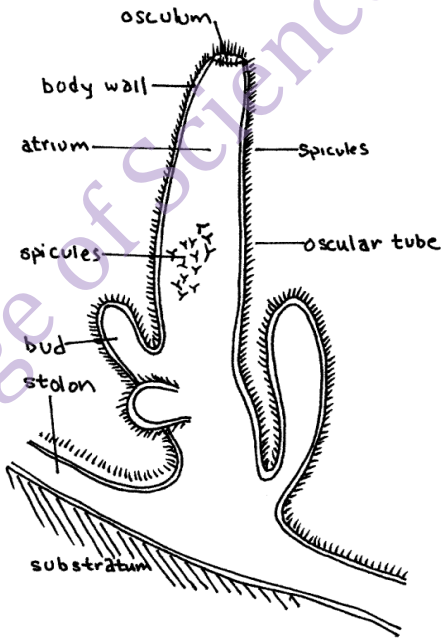
Phylum Porifera is classified into three classes: 1. Calcaria; 2. Hexactinellida and 3. Demospongia.

Class – Calcaria:

1. All sponges belonging to this class are marine, shallow water dwellers.
2. Their endoskeleton is made up of calcareous spicules.
3. They contain mostly asconoid type of canal system.
4. **A typical example is <u>Leucosolenia</u>**

<u>Leucosolenia</u>

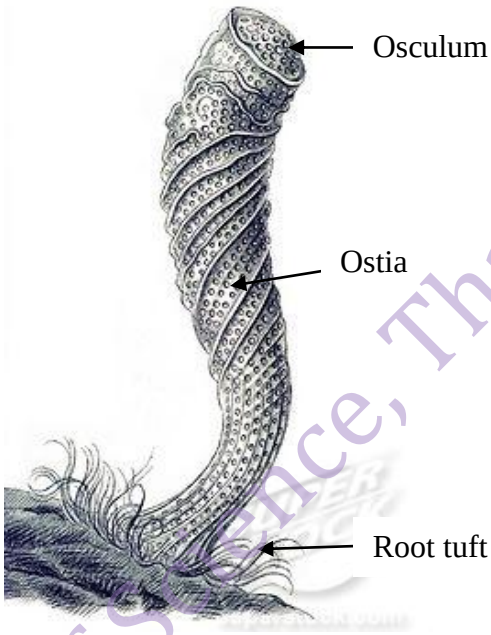
1. This is tiny and colonial sponge found attached to the rocks in the intertidal zone of the marine waters.
2. Each individual is fingerlike, cylindrical or vase shaped covered with numerous ostia.
3. There is a body cavity called spongocoel which opens with a common excurrent opening called osculum which is present at the apex.
4. Canal system is asconoid type.



Class – Hexactinellida:

1. All the sponges belonging to this class are marine, deep sea dwellers and mostly solitary.
2. Their endoskeleton is made up of siliceous spicules.
3. Due to siliceous spicules they are often referred as glass sponges.
4. They contain syconoid and leuconoid canal system.
5. **A typical example is <u>Euplectella</u>**

Euplectella

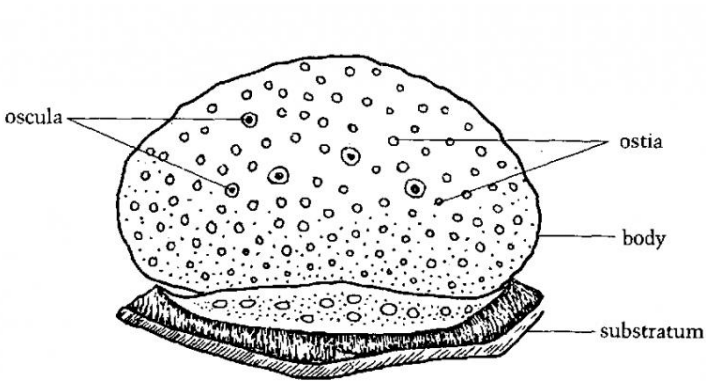


1. It is commonly known as **Venus's flower basket**.
2. This is rare sponge found to a depth of about 1000 m in the deep sea of Philippines and Japan.
3. It is solitary marine glass sponge and grows to about 15-30cm in length.
4. Osculum is closed due to **sieve formation** of fused hexactinate spicules.
5. Entire skeleton is made up of fused hexactinate spicules forming a lattice. It attaches to the substratum with the help of **tuft of root** spicules.

Class – Demospongia:

1. Sponges belonging to this class are either marine or fresh water dwellers.
2. They are mostly shallow water forms and live organized and colonial.
3. Endoskeleton is made up of siliceous or calcareous spongine fibres which give them soft texture.
4. Canal system is leuconoid type.
5. They are brightly colored and large in size.
6. **Typical example is Euspongia (Bath sponge)**

Euspongia (Bath sponge)



1. It occurs in warm waters of Australia, America and Mediterranean Sea; at a depth of 200m.
2. It is colonial and has a globular compact brown colored body made up of many individual.
3. Body covered with numerous ostia and many oscula. Each osculum represents an individual in a colony.
4. It is unisexual usually female. It is called as bath sponge for its soft wooly spongine fibres.