

Scypha (Sycon)

Scypha is commonly known as *urn sponge* because of its shape. It is also known as *crown sponge*, because the fringe of long and straight spicules at the top looks like a little crown.

Systematic Position

Phylum : Porifera

Class : Calcarea

Order : Heterocoela

Family : Sycettidae

Genus : *Scypha* or *Sycon*

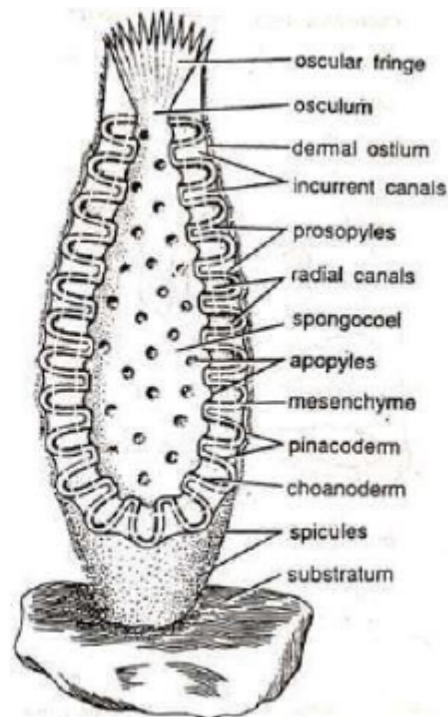
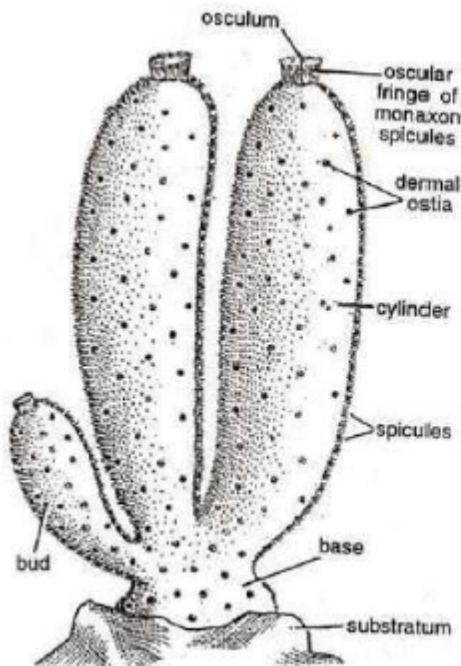
Habit and Habitat :

It is a marine sponge.

It may be solitary or colonial.

Sessile colonies and cylindrical individuals are found permanently attached to submerged rocks or other solid substrata in shallow sea water along the coasts.

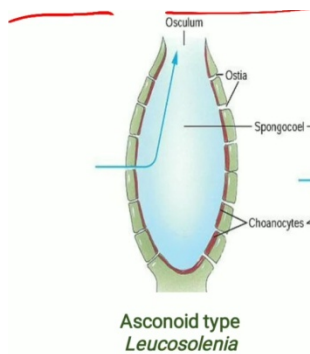
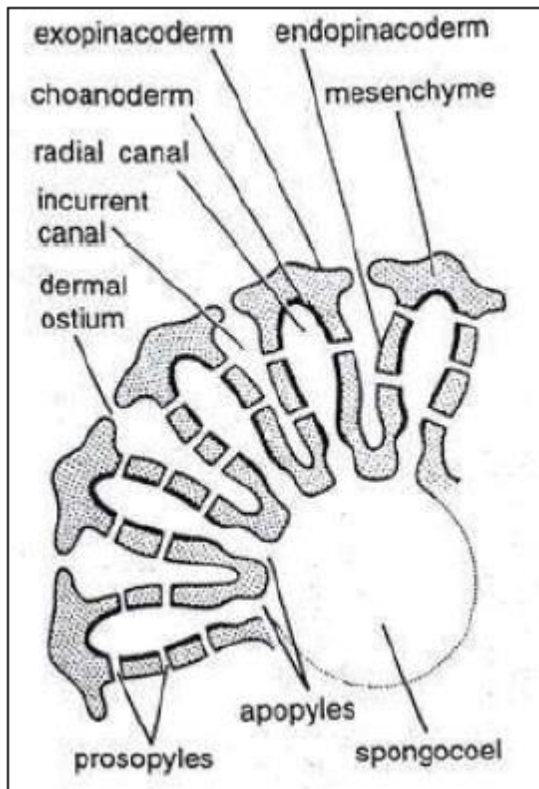
External Morphology



- Body of scypha is vase-shaped and radially symmetrical.
- 1 to 3 cm in height and 5 to 6 mm in diameter.

- The colour is not specific but varies from grey to light **brown**.
- Few tubular projections, or *buds*, found near the attached end
- Free end bears a pore, the *osculum* which is fringed with long, straight, needle-like calcareous monaxon spicules.
- A Narrow *collar region* just below the osculum
- The body surface is thrown into regularly arranged polygonal elevations from which project monaxon spicules, imparting bristly appearance to the body.
- Deep grooves that separates the polygonal elevations bear minute pores, i.e. *ostia* which lead into the central body cavity, the *spongocoel* through a system of canals.

Canal System of Sycon



- Body of *Scypha* is organized to form a complex system of pores and canals referred to as *canal system* or *aquiferous system*.
- The body wall is folded to form regularly arranged alternating invaginations and evaginations, establishing the Sycon type of canal system.

- Theoretically sycon type canal system is derived from ascon type. It is more complex than the ascon type.

- **The various components of canal system are as follows:**

(a) Ostia or dermal pores: Pores present on the body surface that allows ingress of outside water into the body of sponge. *Myocytes* or contractile cells present around them help in regulating the amount of ingressing water.

(b) Incurrent canals: These are invaginated folds of body wall and are also known as *inhalant canals*. These communicate with the outside through ostia but end blindly at their inner ends. Pinacocytes line these canals.

(c) Prosopyles: Incurrent canals communicate with radial canals through intercellular spaces called prosopyles.

d) Radial canals: Evaginations of body wall forms thimble-shaped chambers lined by flagellated chaonocytes. These are

(e) Apopyles: Openings of radial canals into spongocoel are called apopyles or internal ostia. These are also surrounded by myocytes.

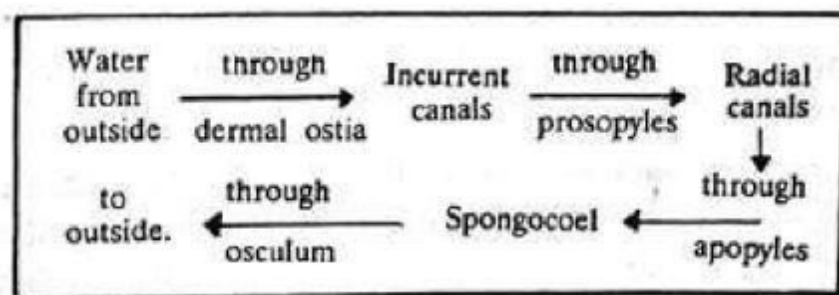
(f) Spongocoel: It is the large central cavity of body. It is lined with the epidermal pinacocytes.

(g) Osculum: Spongocoel leads to outside through a terminal opening, the osculum. Myocytes forms sphincters around osculum. o Continuous beating of flagella of collar cells lining the radial canals maintains the flow of water.

Flow of water current

Continuous beating of flagella of collar cells lining the radial canals maintains the flow of water.

The course taken by water into the canal system is as under:



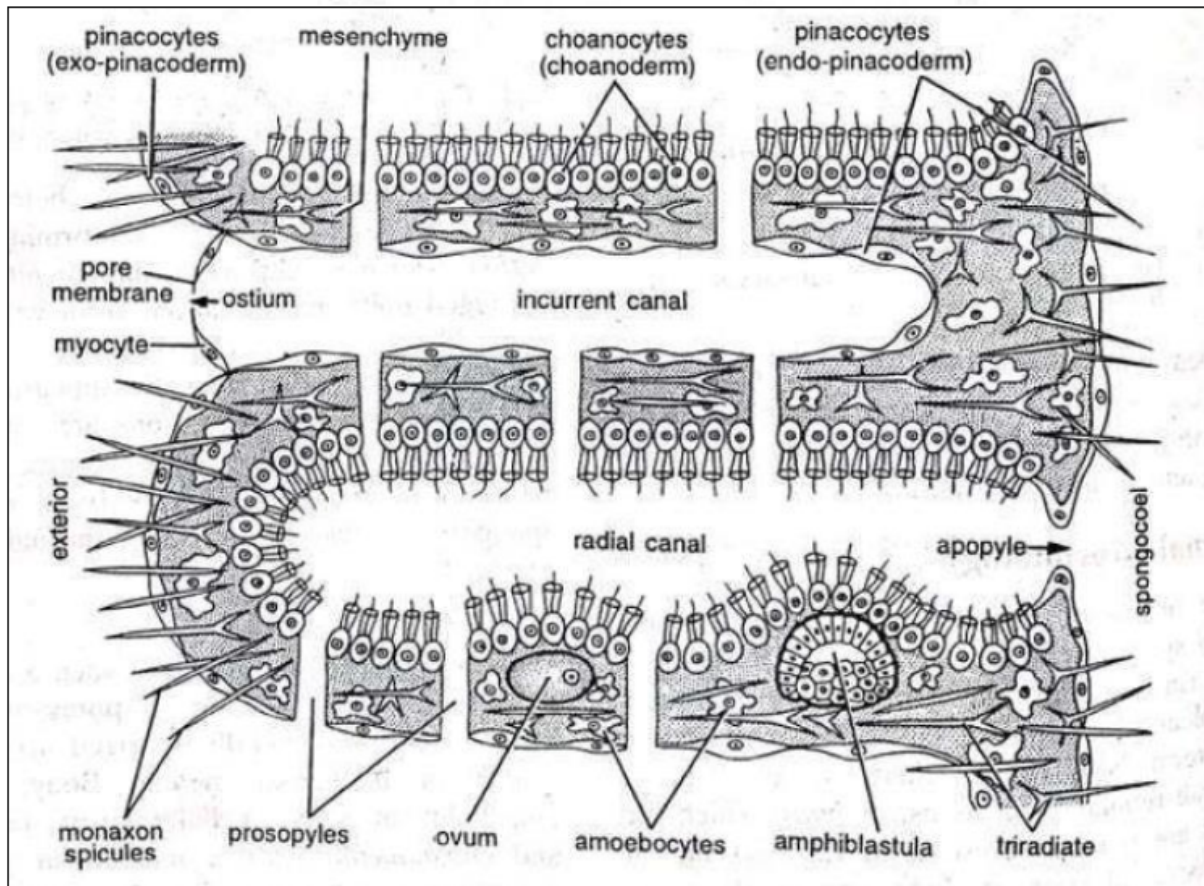


Fig. Scypha. A diagrammatic sectional view of body wall showing one incurrent canal and one radial canal.

Significant of canal System

Canal system play four vital roles in sponge body are –

- **Nutrition:** Food material enter into its body through water current.
- **Respiration:** Water enter into its body carry dissolved oxygen and CO₂ comes out via water current.
- **Excretion:** Sponges excrete NH₃ which dissolved in water and comes out through this current.
- **Reproduction:** Sponges are protogyne results cross fertilization and sperms enter into its body via