By - Dr. Prabhat Ranjan
Dept. of Zoology
Raja Singh College, Siwan.

B.Sc. (Hons)
Zoology
Part - I
Paper - I

Skeleton in sponges.

- According to Haeckel, few sponges inhabitants of deep sea have a pseudoskeleton composed of foreign bodies without any elements secreted by the sponge itself. The vast majority of sponges, however, possess a true skeleton called Autoskeleton, consists of elements secreted by the sponge itself.
- The Autoskeleton in sponges are either spicules or spongin or a combination of both.
- Spicules.
- Its crystalline structure consists of spines or rays that radiate from a point.
- It is secreted by Amoebocytes, called Sclerobl
- Spicules consists of CaCO3 (Calcite) or Colloidal Silica.
- Spicules are of two types:-
(I) Calcareous (II) Siliceous.
- On the basis of size, spicules are two types.
- Larger size - Megascleres.
- Smaller size - Microscleres.
- Further spicules occurs in several forms
- Simple, rod like, or forks, anchors, shovels,
- Stars, plumes etc.
- It can be divided in to the following types.
- 1 Monaxon. - It is rod like / needle like. Monaxon
or may be curved or straight.
- It may be pointed, knobbed or hooked.
- It also two types.
(I) Monactinal (II) Diactinal.
- Monaxon are both calcareous & Siliceous.
2. Triaxon - It is typically four rays each pointing in a different directions.

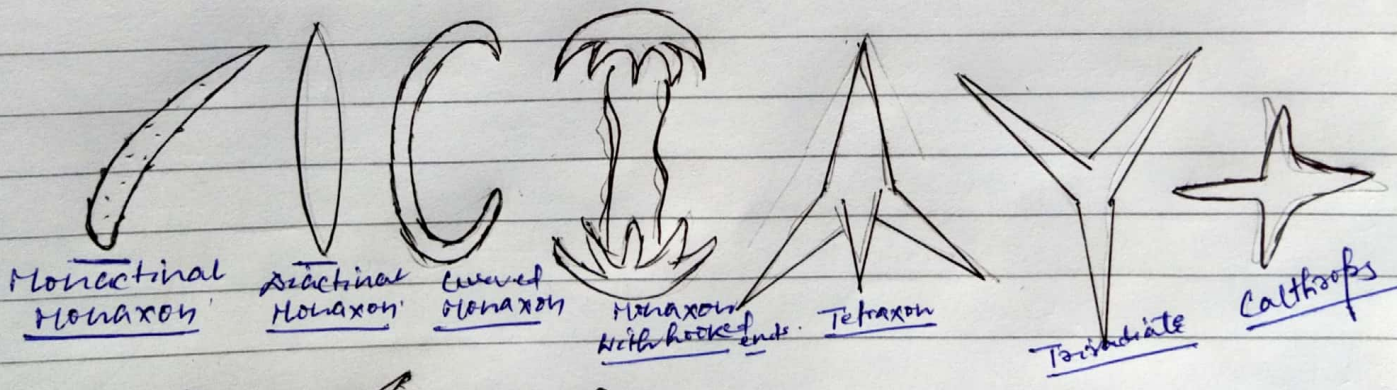
- It's characteristic of calcareous sponges.

3. Triaxon - Triaxon spicules has three axes that cross one another at right angles to produce six rays. (Hexactinal)
- It's the characteristic of Glass-sponges.

4. Polyaxon. - These are spicules with several equal rays, radiating from a central point.
- It appears star like structure -

Spongin.

- Development of spongin is poorly studied & its needs further study.
- Spongin fibres are secreted by Mesenchyme cells, known as Spongioblast.
- These arrange themselves in rows & the spongin rod secreted by each fuses with those of adjacent Spongioblasts to form a long fibre
- These Spongioblasts become vacuolated & degenerate after having secreted a certain amount of spongin.



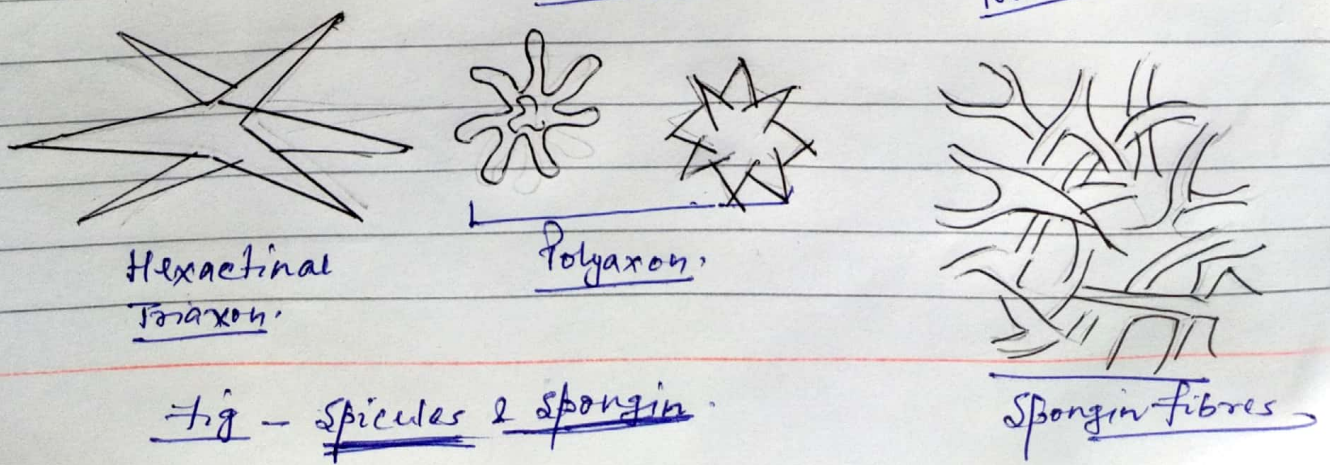


Fig - Spicules & spongin.