TDC I (H)

SKELETON IN SPONGES

Skeleton gives mechanical supports to the body. The skeleton of sponge consists of spicules or spongin fibres or a combination of both. They form the sponge skeleton.

The spicules have an axis of organic materials surrounded by inorganic substance, either $CaCO_3$ or Silica. They can be distinguished as large spicules megascleres or small spicules called microsclere.

1. Megasclera: They are of following types:

A) Monoaxon Spicules: These are formed by growth in one or both direction. A monoaxon or style is typically round at one end and pointed at the other end. It may be —

i) Tylostyle — when the broad end is knobed

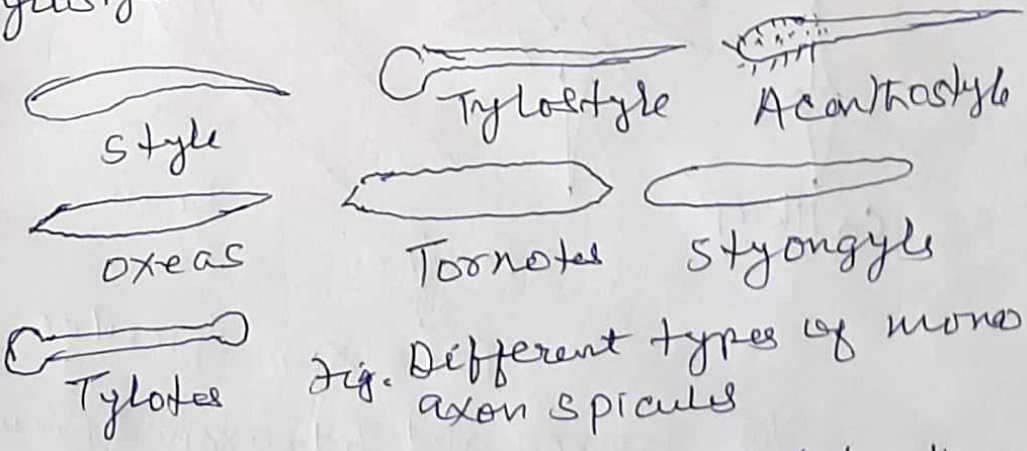


Fig. Different types of monoaxon spicules

(ii) Acanthostyle: When style is covered by thorny processes.

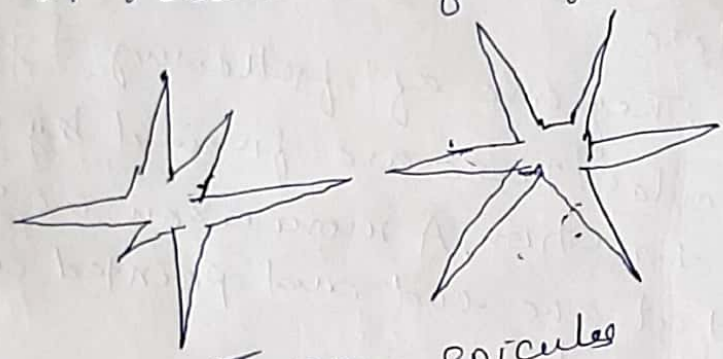
(iii) Oxeas: When pointed at both end.

(iv) Tornotes: When lance-headed at each end.

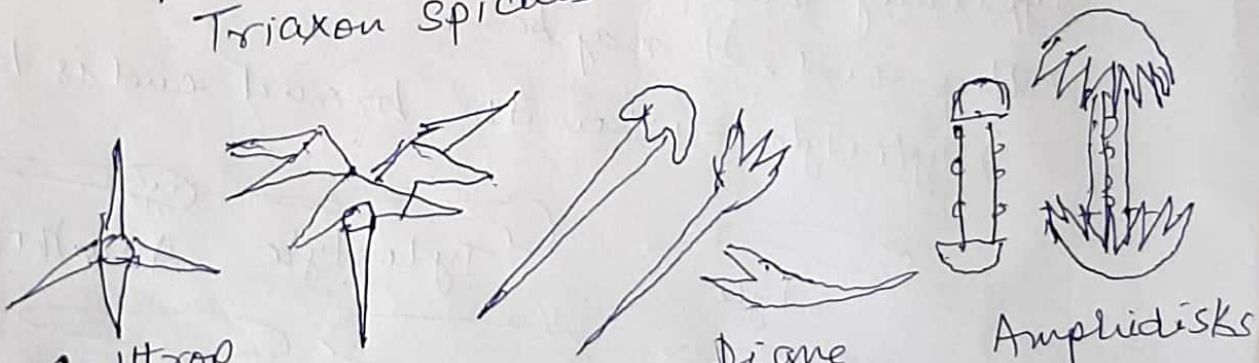
(v) Styongyle: When rounded at each end.

(vi) Tylotes: When like pin

B. Triaxon Spicules: These are also called hexactinal and occur only in the hexactinellida. Each consists of three axes crossing at right angles. Thus six rays appear which extends from a central point at right angle to each other. This can give many variations by loss or reduction of rays



Triaxon spicules



Tetraxon spicules.

Fig - Triaxon and Tetraxon Spicules

C. Tetraxon Spicules: These are also called Tetractines and quadriradiates. Each has typically 4 rays, not in the same plane These may be —

i) Calthrops – When 4 rays are more or less equal.

ii) Triaenes – When 1 ray is elongated, bearing three smaller rays. If one smaller ray is lost, it become diaene.

iii) Amphidisc – When disc occer at both end.

D. Polyaxon spicules: These spicules have several equal rays radiating from a central pierce.

B- Spheres These are almost round spicules in which growth takes place around a centre.

Desma is a kind of megasclere consisting of an ordinary minute monoaxon, triradiate, irregularly deposited.

In the begening Silica follows the crepis but later develops elaborate branches and when they are united into a network then it is called lithistide.

2) Microscleres:

These are minute spicules Scattered in mesenchyma and is called flesh spicules. These may be curved in one plane or spirally twisted.

They may be of following types —

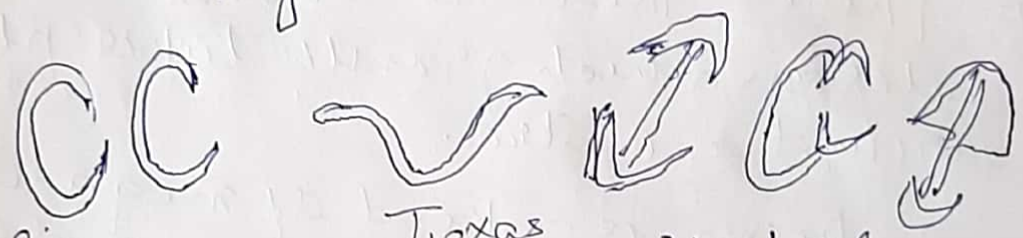
i) Sigmas — C-shaped forms

(ii) Sigmaspire — Spirally twisted Sigma

(iii) Toxas — bow-shaped spicules

(iv) Chelas — With recurved hooks

(v) Asters — These may have small centres and long rays or large centre and small rays.



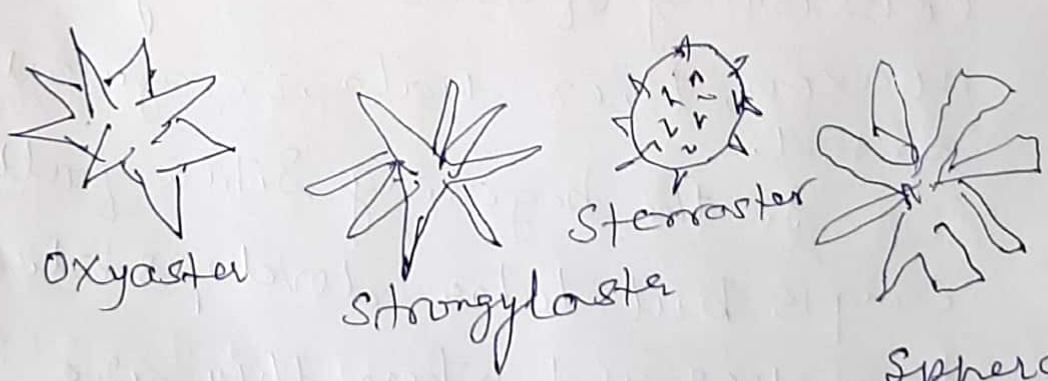


Fig: Different types of microscleres

i) Small centred forms includes oxyaster with pointed