When growth proceeds in both direction the spicules are known as diactinal monaxons or rhabds. Rhabds pointed at both the ends are known as axeas, lance shaped at each ends are termed tornotes, round at the ends are strongyles; and knobed at each end are called stylotes.

Triaxons:

These are characteristics of class Hexactinellida. A triaxon spicule consist of three equal axes intersecting at right angles to produce axis rays. Various modification occur by reduction, loss, branching or curving of rays and by development of spines, knobs etc. upon them.

Tetraxon:

They have four rays radiating in different planes from a common point: when all the four rays are almost equal, the spicule is called cathtrops. When a single ray is elongated, bearing a crown of three smaller rays, it is called triaxes. Loss of one smaller ray result into a diane. If the elongated ray bears

a disc at both ends it is called an amphidisc spicule Loss of the elongated ray result into a triradiate spicula called triod.

Polyxons:

They have several axes proceeding from the centre.

Spines:

These are rounded spicules in which the growth is concentric around a central point.

Desma:

These are modified macroscleres formed by the development and deposition of silica in irregular layers upon an ordinary monaxon triradiate or tetraxon spicules. These are usually united into a network called dictyostid.

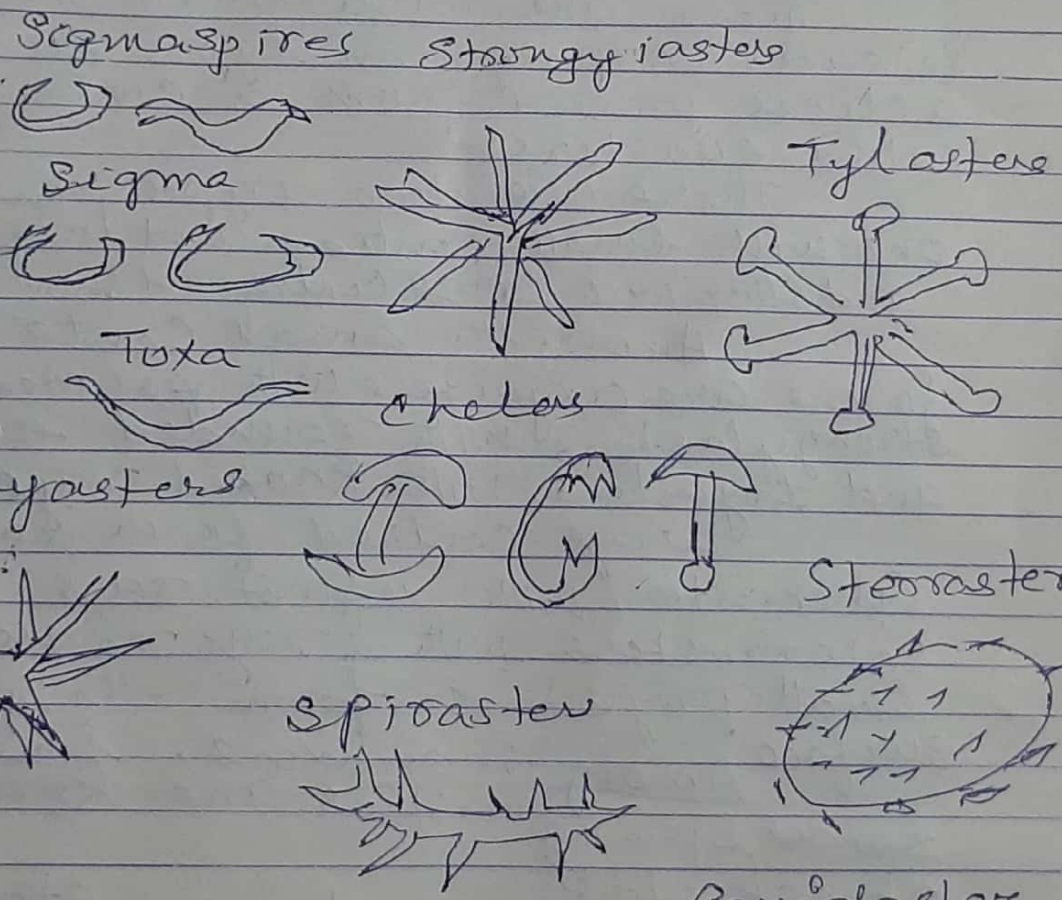
Microscleres:

They occurs in the mesenchyme and sometimes project into the canal. So they are known as auxiliary or flesh spicules. These are mainly of two kinds namely spines and asters.

## Spines:

They are curved in one plane or spirally twisted with many varities. The most common types are:

- the C - shaped forms called Stigmas
- the bow shaped ones Toxas
- With curved hooks, plates or flukes at each end called chelas.




Pg: Microscleres

Skeleton in Sponges/ DT

When two ends are alike the cholas are called isocholas and when unlike anisocholas:

Spirally twisted desmas are termed Desmaspires.

Asters:

These are multiradiate meso-scleres. The polyaxon types in which actines proceed from a centre are called euasters.

There are two types of asters one with small centres and long rays and other with large centre and short rays.

Among the small centered forms are oxyasters with pointed rays strongylasters with rounded end and tylasters, with knobed rays.

Large centred form includes sphaeraster, with definit rays and sclerasters with rays reduced to small projections from the spherical surface. Among monaxons, short spiny asters are known as Strongylasters.

The spirally twisted Strongylasters are called Spirasters.