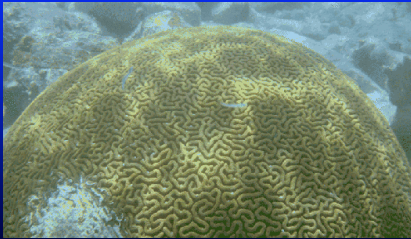
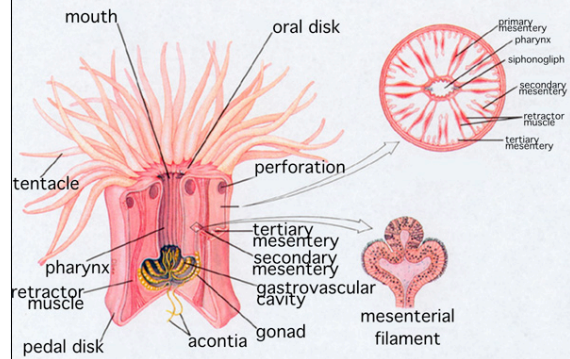


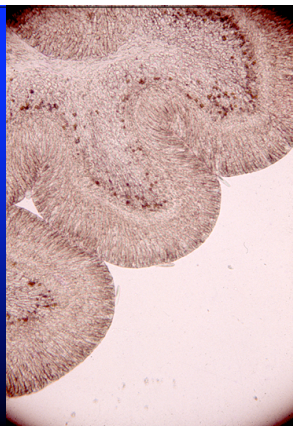
## Coral Anatomy and Morphology



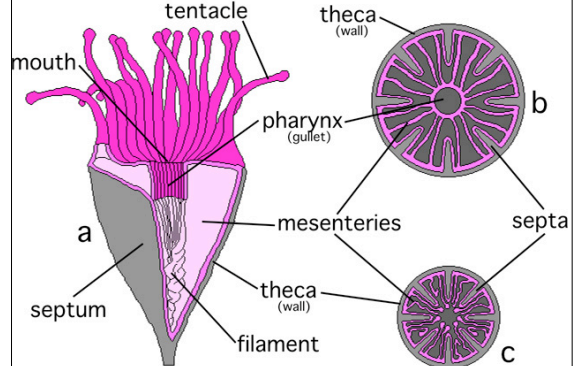
## Sea Anemone Structure



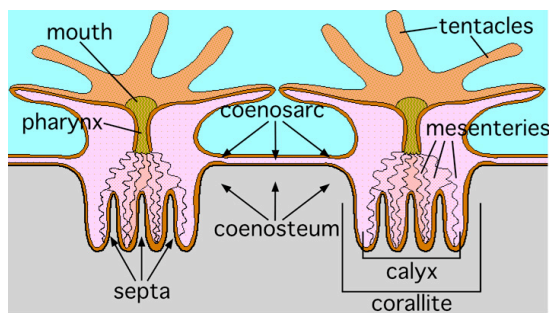
## Mesenteries



## A Solitary Coral Polyp



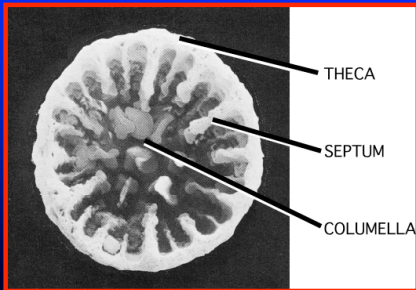
## Colonial Coral Polyps



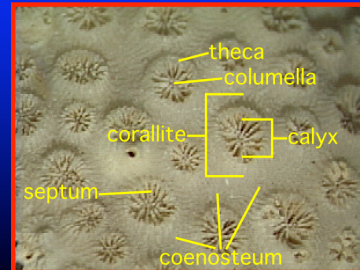
## Skeletal Features of Scleractinian Coral

- corallum (pl. coralla)
  - the entire coral skeleton
- corallite
  - skeleton produced by a single polyp
- calyx (pl. calices)
  - concave depression that houses the polyp
- theca
  - corallite wall
- septum (pl. septa)
  - skeletal plates that radiate into the calyx from the wall (sometimes called scleroseptum)
- coenosteum
  - skeletal material between walls of adjacent corallites

## Skeletal Features of a Solitary Corallite



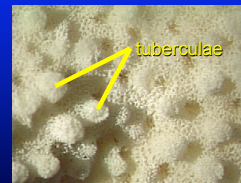
## Skeletal Features of a Coral Colony



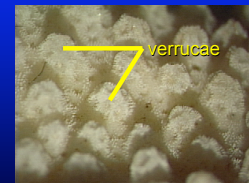
## Skeletal Features of Scleractinian Coral

- costa (pl. costae)
  - extensions of the septa outside the wall of the corallite
- columella
  - central structure of the calyx formed by fusion of the lower elements of the septa
- tuberculae
  - larger-than-polyp bumps occurring in the coenosteum
- verrucae
  - larger-than-polyp bumps composed of several corallites
- papillae
  - smaller-than-polyp, nipple-like bumps on the surface of the skeleton

## Tuberculae and Verrucae



*Montipora capitata*



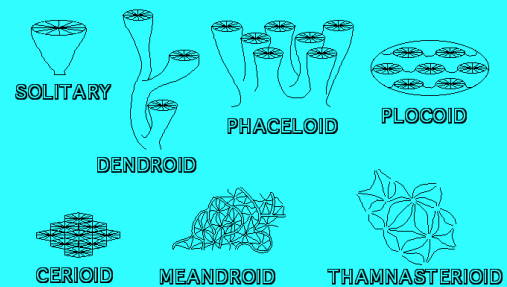
*Pocillopora edouxi*

## Perforate Versus Imperforate



Cross section through a branch of finger coral, *Porites compressa*, illustrating perforate skeleton

## Arrangement of Corallites



Solitary



Phaceloid



Plocoid



Ceriod



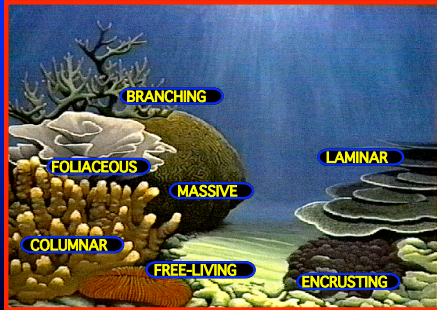
Meandroid



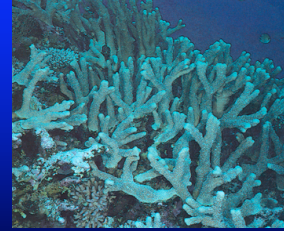
Thamnasteroid



## Colony Growth Forms



## Ramose or Branching



## Columnar



## Massive or Lobate



## Laminar or Plate-like



## Foliaceous



Encrusting



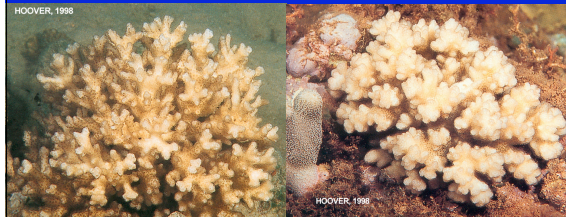
Free-Living and Solitary



### Factors Influencing Coral Colony Morphology

- Water Motion
- Light
- Biological Factors
  - Genetics
  - Coral Symbionts

### Effects of Water Motion on Colony Growth Form

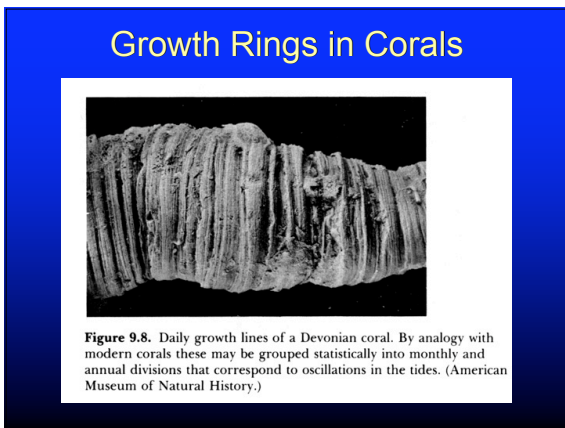


Effects of Light Intensity on Colony Growth Form



### Genetic Differences in Colony Form





- ### Coral Growth Rates
- Depends upon environmental conditions.
  - Massive corals slow growing (0.5-1.0 cm per year).
  - Branching corals may grow more quickly (10-20 cm per year).
  - Distinguish between individual coral colony growth and the growth of the reef as a whole.