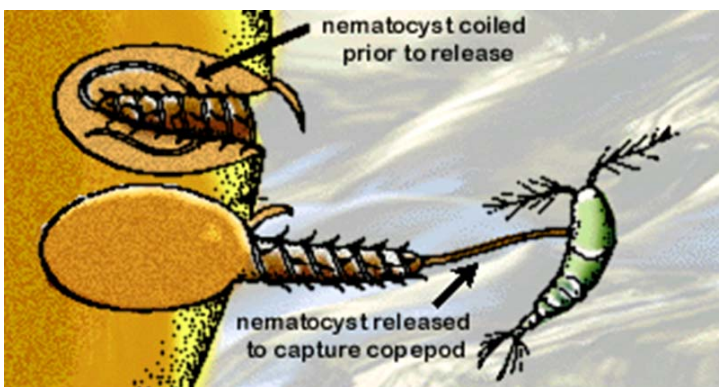


# The Cnidarians

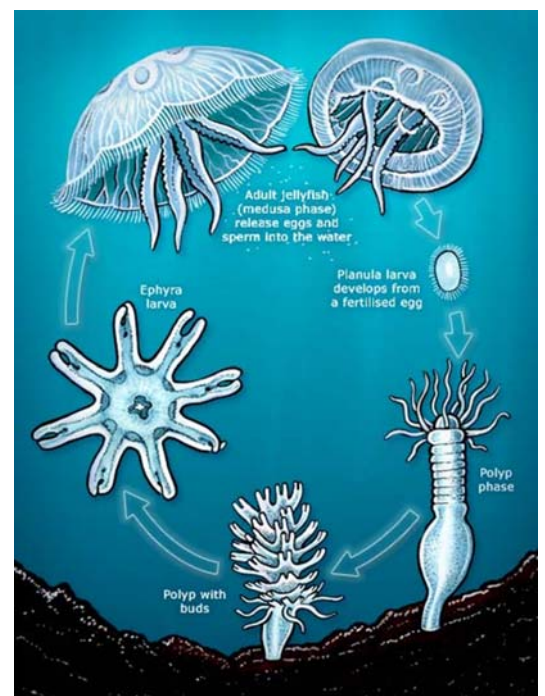
- Characteristics include:
  - \_\_\_\_\_ cell layers
  - A saclike digestive tract
  - Tentacles
  - \_\_\_\_\_ symmetry (appendages arranged in a ring around the mouth)
  - Nerve net – simple nervous system (NO BRAIN!)
  - Invertebrates – no \_\_\_\_\_

## Class Scyphozoa

- AKA – the swimming “jellyfish”
- JELLYFISH ARE NOT FISH!!!
- Most scientists just call them JELLIES.
- All have an \_\_\_\_\_ shaped structure (the medusa) with tentacles hanging down from it
- The medusa is composed of two layers
  - The epidermis
  - The \_\_\_\_\_ dermis
- In between the epidermis and gastrodermis is the MESOGLEA – a jellylike mass – functions kind of like a \_\_\_\_\_ – supports.
- Part of the plankton population
- BUT can contract medusa and pulsate gently through the water
- \_\_\_\_\_ swimmers – they often strand on sandy beaches.
- Do jellies breathe?
  - Respiration occurs through the “skin” by way of \_\_\_\_\_.
  - Oxygen diffuses from water to the cells
  - Carbon dioxide diffuses from the cells to the water
- Feeding
  - Jellies contain stinging cells called \_\_\_\_\_
  - Inside the **cnidoblast** there is a coiled thread with a barb at the end called a **nematocyst**.
  - Nematocysts** are discharged by \_\_\_\_\_ or chemical stimulus
  - When discharged into prey, it paralyzes it
  - Tentacles then bring food toward the mouth
  - Once digested, waste products are expelled back out through the \_\_\_\_\_.

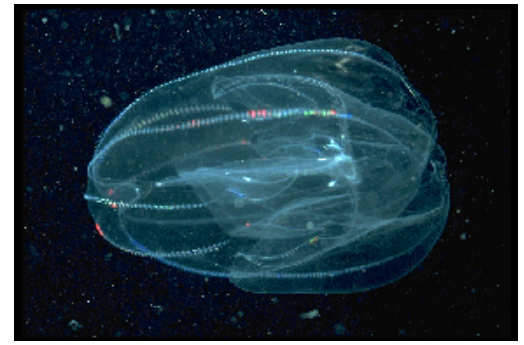


The stinging cells (nematocyst) found in coral tentacles in coiled and released positions.



## Comb Jellies

- Phylum Ctenophora – NOT a cnidarian!
- \_\_\_\_\_ rows of cilia that look like combs
- Cilia beats to move the animal through water
- Bioluminescent



## Class Anthozoa

- Means “Flowering Animal”
- Includes the sea anemones and \_\_\_\_\_

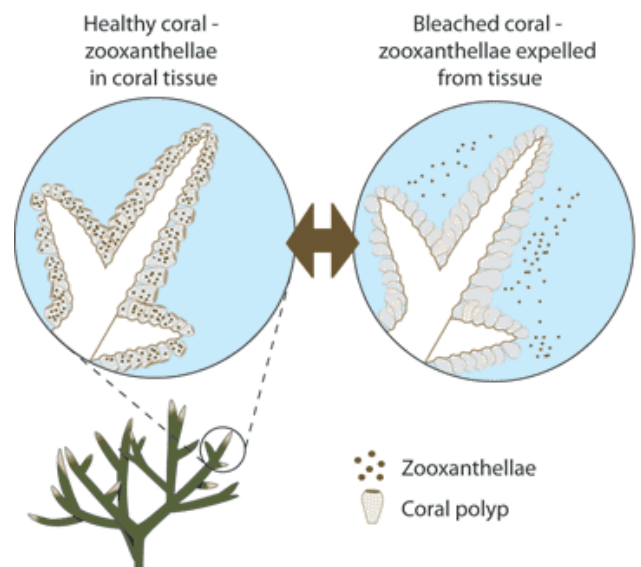
### Sea Anemones

- Stinging tentacles
- Radial symmetry
- Lives only as a \_\_\_\_\_
- Sessile (or stationary)
- Nerve net – simple nervous system
- Sea Anemones Feeding
  - Use tentacles with \_\_\_\_\_ to paralyze prey
  - Some animals can live IN the anemone unharmed
  - The clownfish and some shrimp are SYMBIONTS with anemones
  - These are SYMBIOTIC RELATIONSHIPS
    - Clownfish gains protection from predatory fish while at the same time they protect the anemone’s tentacles from getting bitten off by other fish
    - The shrimp keeps the anemone clean and gains \_\_\_\_\_ from predatory fish



### Corals

- Basic polyp structure
- Sac-like digestive tract
- Mouth surrounded by stinging tentacles
- Colonial animals – connected to each other by \_\_\_\_\_
- Calcium carbonate skeleton
- Hard and soft corals
- Symbiotic relationship with algae called zooxanthellae.
- Zooxanthellae get a home and \_\_\_\_\_ from the coral.
- Coral get O<sub>2</sub> and food (sugar) from the zooxanthellae by way of photosynthesis.
- Coral bleaching – when the algae \_\_\_\_\_ the polyp - and the polyp may die
  - Causes of bleaching include pollutants, severe storms, unusually high or low temps, runoff, and sedimentation.



## Class Hydrozoa

### Hydra (*Obelia*)

- Colonial animals
- \_\_\_\_\_ types of polyps – a feeding polyp and a reproductive polyp
- Hydra life cycle includes a planula, medusa, and polyp stage.
- Dominant stage is the \_\_\_\_\_ stage

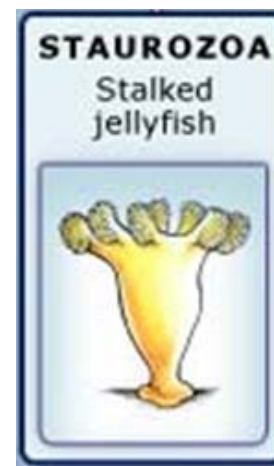
### Siphonophores

- Characterized by having \_\_\_\_\_ polyps – each with a different function
- Portuguese man-of-war (*Physalia*)
- Belongs to Hydrozoa and not Scyphozoa with the swimming jellies because it is a \_\_\_\_\_ of many polyps.
- Each polyp has a \_\_\_\_\_:
  - One kind of polyp makes the gas filled bag
  - One kind of polyp makes the stinging cells
  - Other polyps digest food
  - Other polyps serve in reproduction



## Class Staurozoa

- The \_\_\_\_\_ Jellies
- No medusa stage – like the sea anemone
- Live mostly in cold waters and some near deep sea vents



## Class Cubozoa

- The Box Jellies
  - Differ from true jellies in the following ways:
    - \_\_\_\_\_ shaped.
    - \_\_\_\_\_ evenly spaced tentacles.
    - Well developed EYES.
    - But still – NO BRAIN.
    - Swim faster.
    - VERY POISONOUS – like DEADLY poisonous.
- Two of the most dangerous cubozoans
  - Irukandji in Australia
  - Sea Wasp in Australia

### Irukandji (*Carukia barnesi*)

- Habitat is usually deeper waters of Australia
- Very small
- Stings can be \_\_\_\_\_
- About 5-45 minutes after being stung, the person starts to have a severe backache or headache and shooting pains in their muscles, chest and abdomen. They may also feel nauseous, anxious, restless, and may vomit.

### Sea Wasp (*Chironex fleckeri*)

- In Australia - near shore in calm waters, mouths of rivers, estuaries and creeks following the \_\_\_\_\_
- No chance of surviving the venomous sting, unless treated immediately. The pain is so excruciating and overwhelming that you would most likely go into shock and \_\_\_\_\_ before reaching the shore.

