**BINGHAM UNIVERSITY**

**KARU, NASARAWA STATE**

**FACULTY OF SCIENCE AND TECHNOLOGY**

**DEPARTMENT OF BIOLOGICAL SCIENCES**

**BIO 102: GENERAL BIOLOGY**

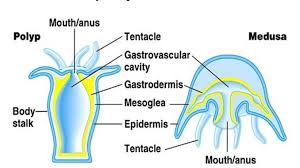
**Phylum Cnidaria (pron.:** [**naɪˈdɛriə**](http://en.wikipedia.org/wiki/Help:IPA_for_English#Key)**) or Coelenterate**

This phylum contains over 10,000 species of animals found exclusively in **aquatic** and mostly marine environments. Their body plan is simple, consisting of two **layers** of cells, an outer **ectoderm,** and an inner **endoderm**. Between the two layers is a non-living jelly-like substance called **mesoglea.** Their distinguishing feature is **cnidocytes**, specialized cells that are mainly used for capturing prey.

Cnidarians are radially symmetrical with their mouths surrounded by tentacles that bear **cnidocytes**. All forms have a single orifice (opening) and body cavity that are used for digestion and respiration. Many cnidarian species produce colonies that are single organisms composed of medusa-like or polyp-like zooids. Cnidarian activities are coordinated by a decentralized nerve net and simple receptors. Not all cnidarians reproduce sexually. Many have complex life cycles with asexual polyp stages and medusa, but some omit either the polyp or the medusa stage.

**BODY FORMS:**

Cnidarians have two basic body forms: **medusa** and **polyp**. The swimming medusa is umbrella like, mouth and tentacles are facing down, while the sessile polyps are cylindrical, with the mouth and tentacles upright. The two types sometimes alternate in life cycle, in which case the medusa can act as a dispersal stage.

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**CLASSIFICATION OF THE PHYLUM CNIDARIA**

There are basically four classes of this Phylum. These are briefly discussed below.

**Class Anthozoa**

These comprise of the **corals** (hard and soft) and the **anemones**. This group has only the polyp forms that produce dispersive planula larvae.   They are marked by having no **medusoid** stage. The polyp is the sexual stage which produces the dispersive [planula](http://comenius.susqu.edu/biol/202/DICTIONARY%20OF%20TERMS/P/planula.htm) larva.  Mature polyps are large with thick, cellular [mesogloea](http://comenius.susqu.edu/biol/202/DICTIONARY%20OF%20TERMS/M/mesoglea.htm). They have one or two ciliated grooves that direct water into the coelenteron. They have both epidermal and gastro-dermal nematocysts, but no operculum. Often, the animals are colonial with ~6,000 extant (still existing) species.

 Coral

**Class Scyphozoa**

[There are about 200 species comprised only of large **jellyfish**](http://comenius.susqu.edu/biol/202/DICTIONARY%20OF%20TERMS/N/nematocyst.htm). The scyphozoans are a group in which the **medusa** is the dominant life stage.  The polyp is either highly reduced, absent, or unknown.  The orientation of the medusa mouth is on the underside rather than mouth up. The contractions of the bell of the medusa provides locomotion.

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Jelly fish

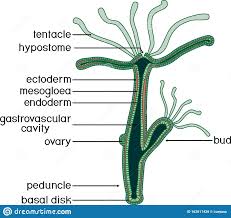
**Class Cubozoa**

These are considered a separate class of **jellyfish**. The medusa is small and delicate. Polyps may be small or absent. They have a bell that has velum (membrane layer) and four flattened sides like a box with tentacles emerging only from each of the four-margined corners of the bell. They have toxic jelly.



**Class** [**Hydrozoan**](http://en.wikipedia.org/wiki/Help:IPA_for_English#Key)

This comprises of about 2700 species of **hydras**, colonial **hydroids**, and fire **corals**. Their life histories typically include both **polyps** and **medusae**, though the polyps tend to dominate.  The polyp of a hydrozoan is very simple in that it has a simple mouth and no internal **septa** (partition).  Many taxa have **colonial** polyps in which individual animals are connected, and often individual polyps have different functions. The hydrozoan medusa is small with a simple mouth and a bell with a velum.



Obelia