**AP Biology: Protists**

*Refer to Ch 28 in Campbell*

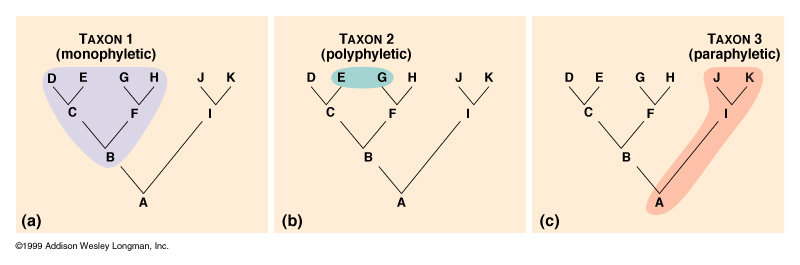
*You must know:*

* An appreciation of the “real kingdoms” of Protista.
* How chloroplasts and mitochondria evolved through endosymbiosis.

**Eukaryotic**

* Not plants
* Not animals
* Not fungi
* Not necessarily \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_(but most are)

“True” sexual reproduction (\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_)



Polyphyletic (or… Paraphyletic?... There is debate!)

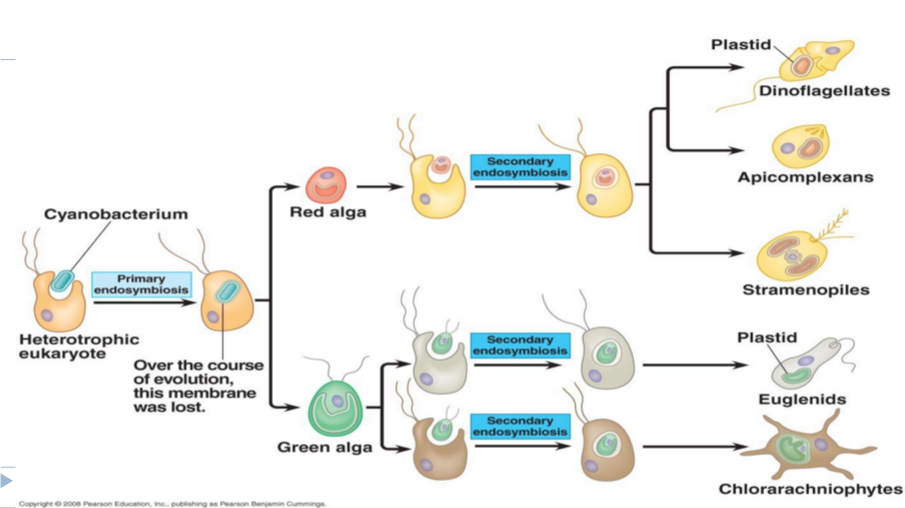
* INCREDIBLY diverse
* Biologist no longer consider Protists a kingdom because it is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_(some protists are more closely related to plants or to fungi or to animals)

**Endosymbiosis**

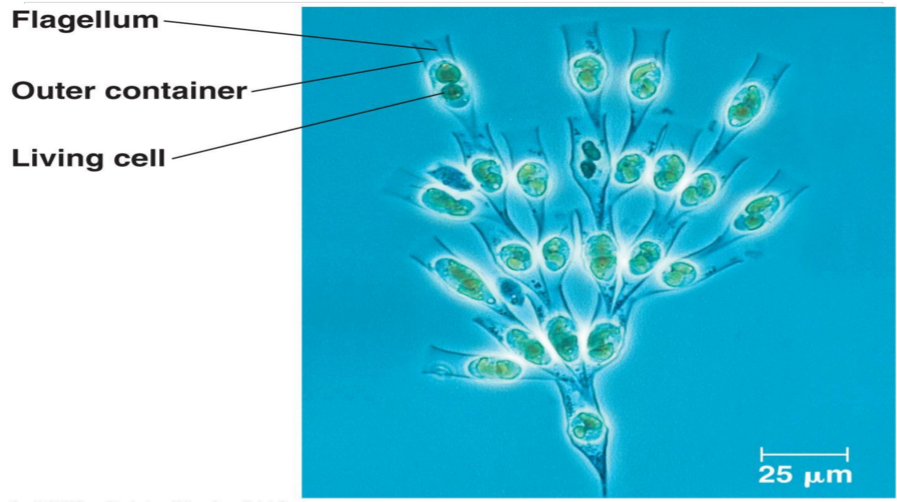
* The birth of the Eukaryote?

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_evolved through endosymbiosis.  They were originally unicellular and engulfed by other cells.

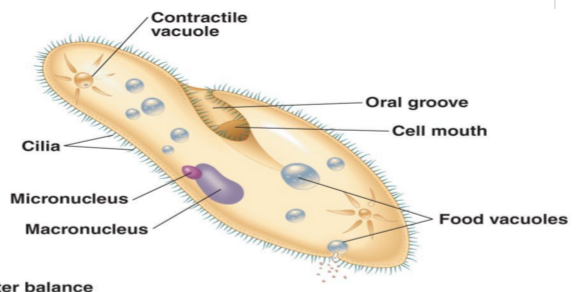
**Secondary endosymbiosis**: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_underwent secondary when they were ingested in the food vacuole of heterotrophic eukaryotes and become endosymbionts themselves.  Evidence for this is three membranes.



**Classification –** *See page E-2 at back of Campbell*



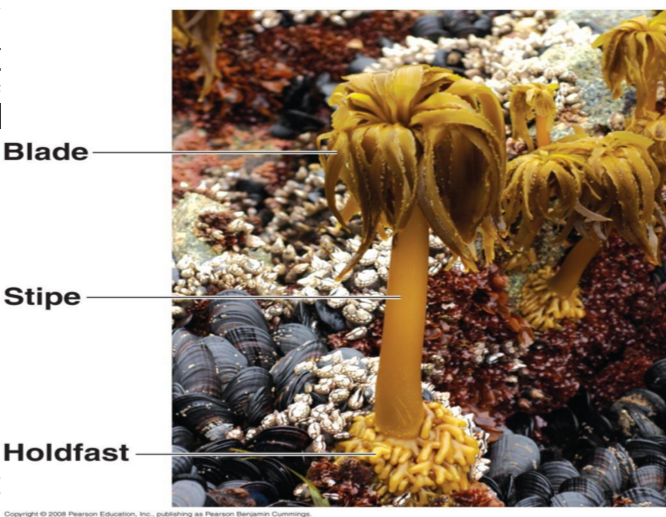
* Three categories?
  + Animal-like
  + Plant-like
  + Fungus-like
  + *\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_-like?*
* Five “\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_” of the Eukaryotic domain?
  + Excavata
  + Chromalveolata
  + Rhizaria



* + Archaeplastida
  + Unikonta

**Ecological Connections**

* Mutualistic Symbiosis
  + \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_dinoflagellates and coral polyps
  + Protists and termites
* Parasitic Symbiosis
  + Malaria-causing protist *Plasodium*
* Photosynthetic Producers
  + ¼ of all the world’s \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_done by diatoms, dinoflagenllates, multicellular algae and other protists!



* + Foundation of many food webs

Lab Activity…I’d like to introduce you to:

*Paramecium aurelia*

*Didinium*

*Amoeba proteus*