

LIFE SCIENCES 11

ANIMAL-LIKE PROTISTS

General Characteristics

- eukaryotic organisms
- may occur as single cells, can live in associations called colonies, or form a long thread-like association called filaments
- are considered unicellular because the cells are:
 - a. undifferentiated (they all look the same)
 - b. unspecialized (they all perform the same functions)
 - c. are capable of living on their own

Origin

- believed that a large prokaryotic cell engulfed a smaller prokaryotic cell and the two lived in a symbiotic relationship
- eventually evolved into one organism
- called the Theory of Endosymbiosis
- supported by the double membrane nature of mitochondria and chloroplasts

Protists are an extremely diverse Kingdom. They have a very wide variety of nutrition, habitat, form and function.

Classification of Protists

- classified as animal, plant, or fungus-like (mode of nutrition)

1. Animal-Like Protists

- heterotrophic – ingest their food
- are generally named due to their type of locomotion

a. Ciliophora (ciliates)

- locomotion – hundreds of beating hair-like structures called cilia
- nutrition – free-living heterotrophs
- reproduction – binary fission and conjugation
- example – *Paramecium*

b. Zoomastigina (zooflagellates)

- locomotion – long, whip-like structure called a flagellum
- nutrition – free-living heterotrophs and parasites (absorption through the cell membrane)
- reproduction – asexually (binary fission) and sexually (production of gametes)
- example – *Giardia* and *Trichomonas*
- ecological significance

- exist as symbionts in the gut of termites
- decomposers
- can cause diseases such as Beaver Fever (*Giardia*) and African Sleeping sickness,

c. Sporozoa (Apicomplexa)

- locomotion – lacking
- nutrition – parasites with complex life cycles often involving more than one host (see fig 18-10)
- reproduction – by spores
- example – *Plasmodium* (causes malaria)
- ecological significance – disease causing agents carried in vectors such as the *Anopheles* mosquito

d. Sarcodina – (amoeboids)

- locomotion – by temporary projections of cytoplasm called pseudopods (false feet)
- nutrition – heterotrophic
- reproduction – binary fission
- example – amoeba and forams
- ecological significance – important decomposers, forams are responsible for major chalk deposits (the White Cliffs of Dover), determining the age of rock, and predicting where oil can be found