

Community - individuals of different species interacting in a common location.

Guided Reading: Chapter 53

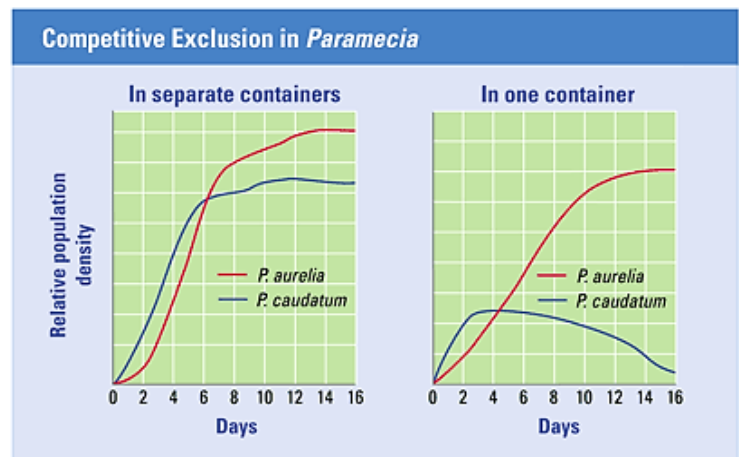
(p.1174)39. What is the **competitive exclusion principle**?

The competitive exclusion principle states that two species with identical niches cannot coexist indefinitely.

40. Use the graph to the right to help you describe Gause's experiment with *Paramecia*.

Gause studied the effect of interspecific competition between two species of *Paramecium* in which he cultured (grew) under stable conditions with a constant amount of food added every day in separate and in combined habitats.

CONCLUSION: Two species with the same ecological niche cannot coexist.



(p.1179)41. Describe several defense mechanisms to predation in plants. (**What Plants Talk About: Answer Key**).
(Refer to your "What Plants Talk About" video sheet.)

(p.1179) 42. Define and give an example of the following animal defenses: (Bozeman - Warning Colorations)

- a) (camouflage)
Cryptic coloration - (video)

Adaptive coloration is a passive defense that makes the potential prey difficult to spot against its native background.

EXAMPLE: Peppered Moths and Tree Frogs

- b) (“copycat” adaptation)
Batesian mimicry - (video)

When one species copies or “mimics” the appearance of another.

EXAMPLE: Hawk Moth

- c) Mullerian mimicry -

When a harmless species has evolved to imitate the warning signals of a harmful species.

EXAMPLE: Coral Snake and the King Snake

(Red touches Yellow...Kill a Fellow)

How to Tell the Difference Between a Non-venomous Snake and a Coral Snake in North America



Remember these rhymes to tell the difference between the two snakes:
•Red touches yellow, kills a fellow. Red touches black, friend of Jack.
•Red touches yellow, kills a fellow. Red touches black, venom lack.

(p.1180) 43. Define and give 2 examples of **mutualism**.

Mutualism is an interspecific interaction that benefits both species.

EXAMPLES:

- (1) Acacia Trees and Ants
- (2) E.coli bacteria and Humans

44. Define and give 2 examples of **commensalism**.

Commensalism is an interspecific interaction that benefits only one species.

EXAMPLES:

- (1) Tree Frog using a plant for protection.
- (2) Certain birds eat the insects off of grazing mammals.

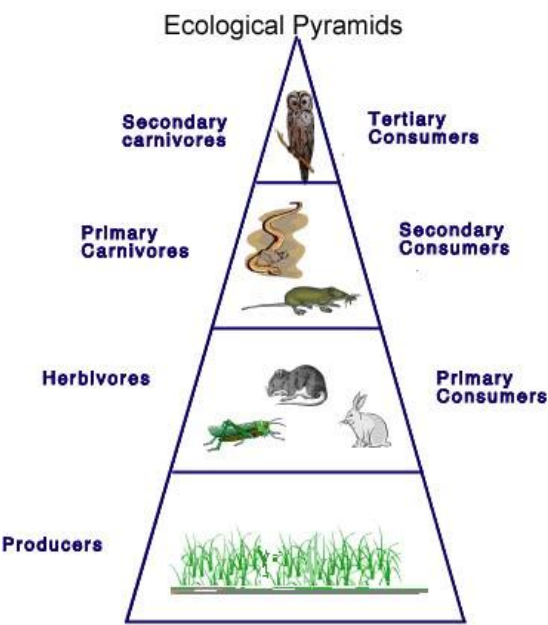
45. What is meant by the “**trophic structure**” of a community?

The “**trophic structure**” of a community is the transfer of food energy from its source in plants and other photosynthetic organisms (*producers*) to carnivores (*secondary consumers*) and eventually decomposing returning important nutrients to the soil for plants to use.

(p.1183) 46. Explain why is the Ecological Pyramid located to the right is shaped like a pyramid.

The Ecological Pyramid located to the right is shaped like a pyramid due to the inefficiency of energy transfer up the food chain making less energy available for the next trophic level.

Less Energy = Less Organisms



47. What does a **food web** show that isn't indicated by a **food chain**? (pp.1180-1181)
A food web consists of many food chains and shows the feeding interactions between more members of the community.

(p.1183) 48. What limits the length of any food chain?

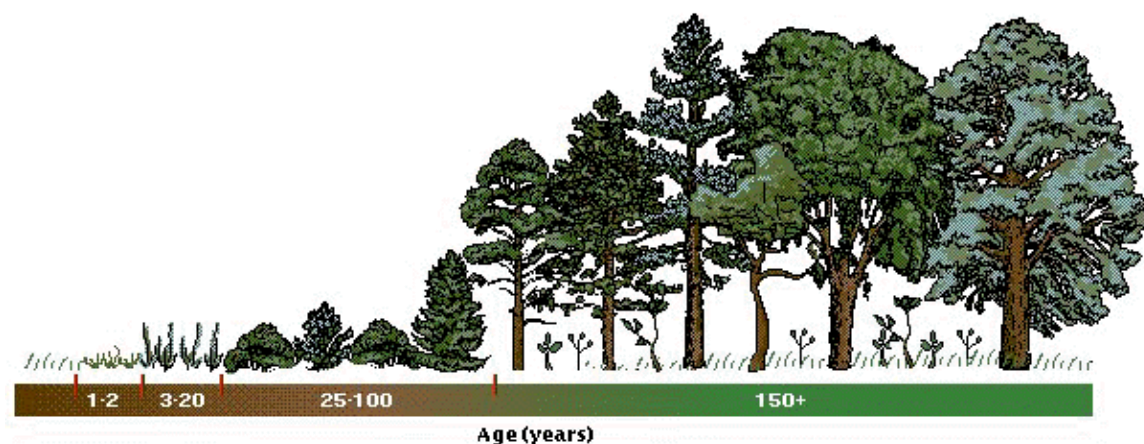
The length of any food chain is limited due to the inefficiency of energy transfer along the chain.

(p.1184) 49. Define a **keystone species** and why are they so important to a community?

A keystone species is a species on which other species in an ecosystem largely depend, such that if it were removed the ecosystem would change drastically as proven by removal experiments.

Marine: Phytoplankton

(p.1189)50. Use the diagram below to help you define **ecological succession**.



Ecological succession is the transition in species composition over ecological time.

(p.1189)51. What is the difference between **primary** and **secondary succession**?

Primary succession begins in a virtually lifeless area where soil has not yet formed, such as on a new volcanic island or on rubble left behind by a retreating glacier. Secondary succession occurs when an existing community has been cleared by some disturbance that leaves the soil intact, such as after a major forest fire.