

CHAPTER 16; Plants and Fungi

(sorry folks, this is a long one)

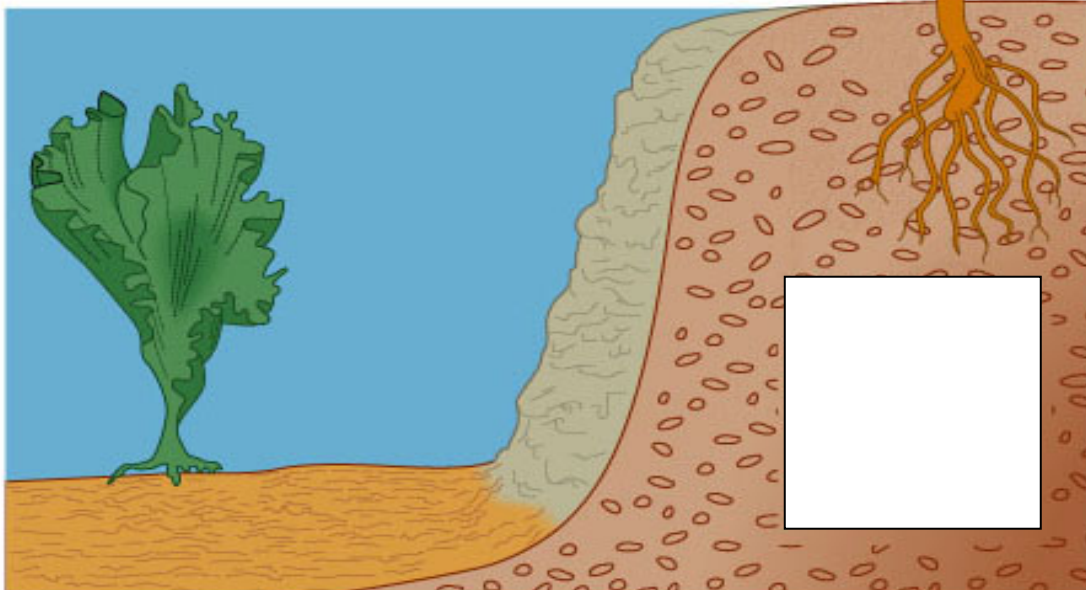
- Plants
 - Are _____ organisms
 - Are _____ eukaryotes that make organic molecules by _____

Terrestrial _____ of Plants

Structural Adaptations

- Living on _____ poses different problems from living in _____
 - Plants require structural _____
 - _____ for absorbing water and _____
 - _____ for rising above the _____
 - _____ (usually) for absorbing light
 - _____ (usually) for reproduction

The differences between land plants and algae;

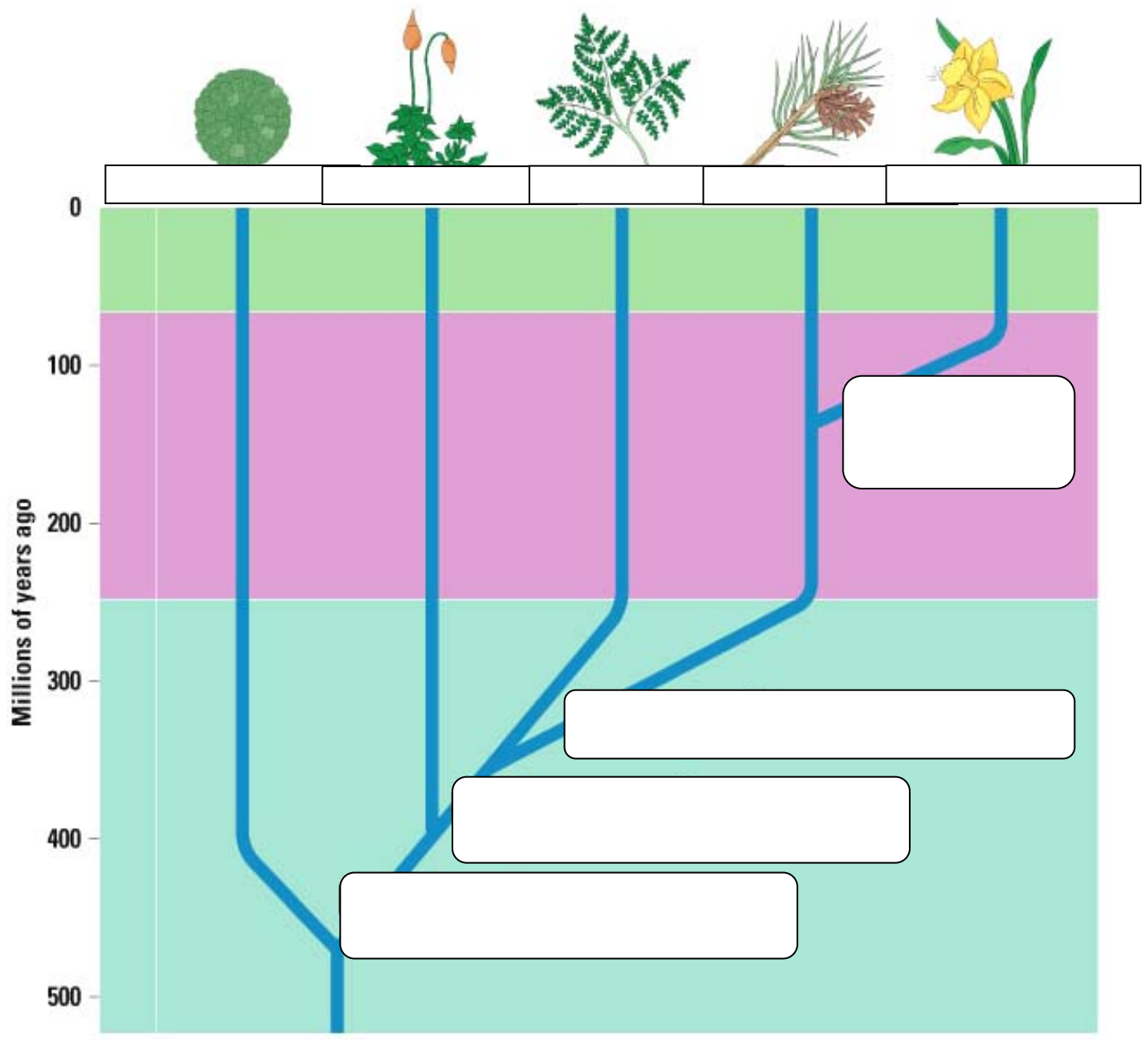


- Most plants have _____, symbiotic _____ associated with their _____
- These _____ help the plant absorb _____ and nutrients, the plants provide the fungus with _____
- Leaves
 - Are the main _____ organs of most _____
 - Have _____ (openings) for _____ exchange
 - Contain _____ tissue for transporting vital _____

Vascular tissues

- Other types of vascular tissue are found in the _____ and _____ of plants
- _____; the tubular cells that move _____ and nutrients from the roots up into the leaves
- _____; living cells that transport _____ from the leaves to the roots and _____

The plant family “tree” See page 324 of book



Bryophytes

Mosses

- Are the most familiar _____

Bryophytes have no _____

Terrestrial Adaptations of Mosses

- Mosses display two key _____ adaptations
 - A waxy _____ (covering to their leaves) that helps prevent _____
 - The retention of developing _____ within the mother's _____
- Mosses have two distinct _____ of the plant
 - The gametophyte, which produces _____
 - The _____, which produces spores
- The life cycle of a moss exhibits an _____

Ferns

- Are seedless _____ plants
- They produce _____ instead of seeds
- During the _____ period, about 290–360 million years ago, ferns formed swampy _____ that covered much of what is now Eurasia and North _____
 - These forests formed what would become _____ fuels

Gymnosperms

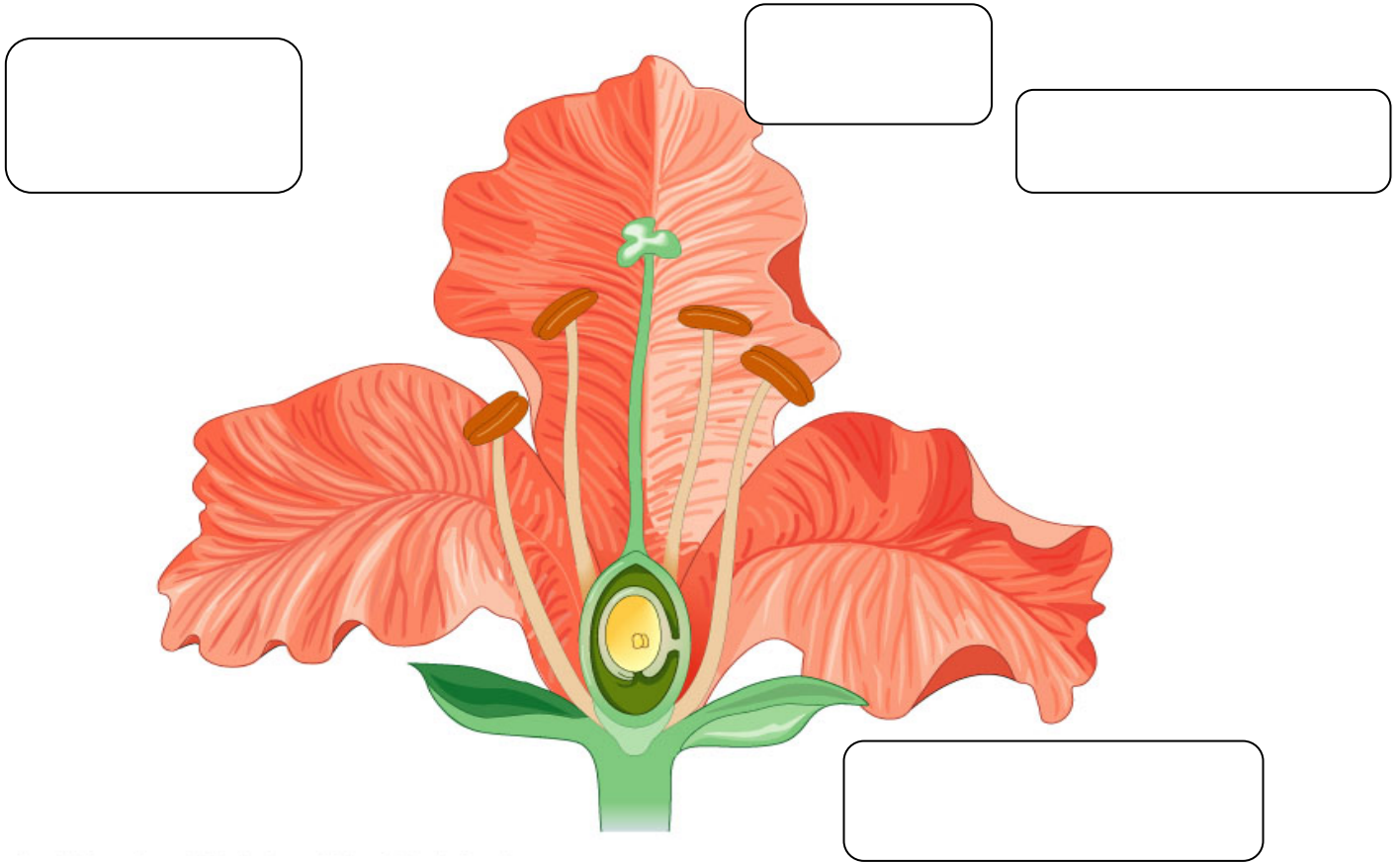
- A drier, _____ climate at the end of the Carboniferous period favored the evolution of _____, the first _____ plants
- _____
 - Cover much of northern Eurasia and _____ America
 - Are usually _____, which retain their leaves throughout the _____

Terrestrial Adaptations of Seed Plants

- Conifers and most other _____ have three terrestrial _____
 - Reduction of the _____ generation
 - The evolution of _____ (that can be spread by the _____)
 - The first non-_____ covered seeds (“gymno-” means _____, and “-sperm” means _____)
- A _____ tree of a conifer is actually a _____ with tiny gametophytes living in _____
- A second _____ of seed plants to dry land was the evolution of _____
- A _____ grain
 - Is actually the much-reduced male (n) _____
 - Fertilizes the _____ (n) gametophyte
 - Results in a (2n) _____
- The third terrestrial _____ was the development of the _____
- A _____ consists of a plant _____ packaged along with a _____ supply within a protective _____

Angiosperms

- Supply nearly all our _____ and much of our fiber for _____
- More efficient _____ transport and the evolution of the _____ help account for the success of the _____



- A fruit
 - Is a ripened _____ containing _____
 - Helps protect the _____ and increase seed _____
 - Is a major _____ source for _____

The differences between fruits and vegetables

- Fruits;
 - Are nutritious coverings (enlarged _____) for seeds
 - Although you might not call **all** these _____, they are.
- Vegetables;
 - Any part of the _____ that is not associated directly with _____

Fungi

- Fungi are extremely _____ to ecosystems because they decompose and _____ organic materials
- Are _____, and most are _____
- Produce _____ that digest their surroundings

Fungal Nutrition

- Fungi are _____
 - They digest their food _____ and acquire the nutrients by _____

The structure of fungi

- The bodies of most _____ are constructed of structures called _____
- The hyphae
 - Form an interwoven _____ called a _____
 - Are separated into _____ by cross-walls made mainly of _____

Fungal Reproduction

- Fungi reproduce by releasing _____ that are produced either sexually or _____

Fungi as Decomposers

- Fungi and _____
 - Are the principal _____ of ecosystems
 - Help ecosystems _____ nutrients necessary for _____ growth

Commercial Uses of Fungi

- Fungi are commercially _____
 - As food and in _____
 - In beer and _____ production
- Some fungi produce _____

MUTUAL SYMBIOSIS

- _____ between species, or symbiosis, is an _____ product
 - Mutualism is symbiosis that _____ both species

Lichens

- Are _____ associations between fungi and _____
- The _____ provides a place to live, water and some _____ nutrients
- The algae provides _____ from _____

Spanish Moss is a _____, not a true _____

Review Questions:

1. Be able to fill in and describe all figures in the notes
2. How do all plants produce food?
3. Are there any plants that are unicellular? Prokaryotic?
4. Plants are different from algae mostly because they live on land, while algae do not T/F
5. What structures in plants gather light (usually)?
6. What structures in plants help them raise up above the soil?
7. What structures in plants anchor them to the ground and absorb water and nutrients?
8. What fungal associations do most plant roots have with fungi?
9. What do the fungi do for the plant?
10. What does the plant do for the fungi?
11. What are the small holes on the underside of leaves called?
12. What are the small holes on the underside of leaves **used for**?
13. What is the vascular tissue in plants that moves water up from the soil?

14. What is the vascular tissue in plants that moves the products of photosynthesis down from the leaves?
15. Special note; I would particularly study the Plant Family "Tree" for the test. ***Hint hint.***
16. What plants are the most familiar bryophytes?
17. Bryophytes are the most primitive plants that live on land T/F
18. What are the two key terrestrial adaptations that mosses show?
19. What is the waxy covering that all land plants have on their leaves?
20. What is the function of the waxy covering on the leaves of land plants?
21. What are the two main stages in the life cycle of mosses?
22. What does the gametophyte generation produce?
23. What term means that there are two distinct generations in plants that are different in their n number?
24. What does the sporophyte generation of mosses produce?
25. Ferns are seedless vascular plants T/F
26. During what period did fern dominate the landscape?
27. The remains of the old fern swamps are now used as;
28. What term means "naked seed"?
29. What two things are gymnosperms missing that angiosperms possess?
30. Gymnosperms are better adapted for dry climates because they do not need ____ for reproduction
31. What term means that a plant keeps its leaves all year?
32. What are the three major adaptations of seed plants? (how are they different from mosses and ferns)
33. A pollen grain is actually a very small sporophyte generation of the pine tree T/F
34. In plants, what is a small packet of food with an embryo inside?
35. How are we dependant on angiosperms?
36. A ripened ovary containing seeds is a;
37. How do fruits help plants and animals?
38. What is the main difference between fruits and vegetables?
39. What do fungi do that is so important to our ecosystem?
40. Are there any photosynthetic fungi?
41. How do fungi acquire food?
42. The bodies of most fungi are constructed of structures called;
43. An interwoven mat of hyphae is called a;
44. What are the cell walls of fungi composed of?
45. How do fungi reproduce?
46. Fungi are important in our production of food T/F
47. What two terms mean that two different species live together, and they both benefit?
48. What are mutualistic associations between fungi and algae that grow on rocks?
49. What do the fungi provide to the association?
50. What do the algae provide to the association?
51. Spanish moss is a;