

CHAPTER 14

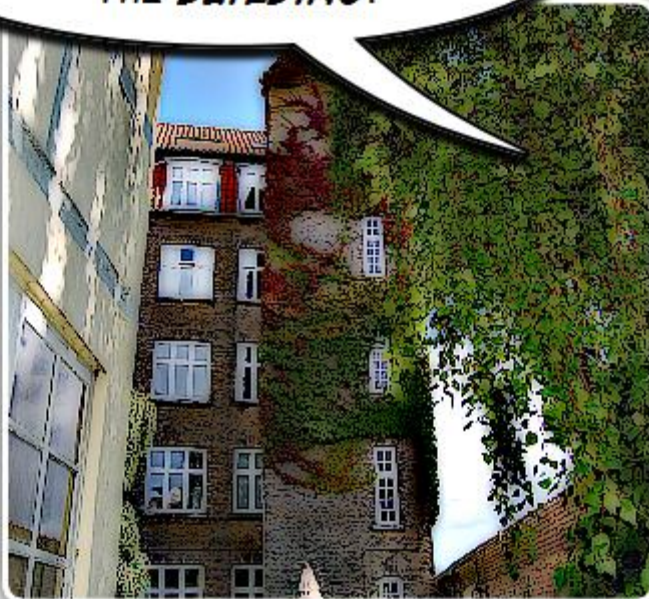
In the last chapter, you learned how scientists classify organisms in a process called taxonomy. All living organisms have been classified into six different kingdoms. The first kingdom you explored was the animal kingdom. In this chapter, you will study the plant kingdom.

As you learned from the last chapter, taxonomy has been used for a long time. The Greek thinker Aristotle classified organisms in two groups - animals and plants...

...over 2,000 years ago!

As scientists found new organisms, they made new groups to classify these new organisms. These new groups became the six kingdoms we use today to classify living organisms.

JUST A FEW MORE DAYS
EVERYONE AND WE'LL TAKE OVER
THE *BUILDING!*



Now you are going to look at the second kingdom of life...

The Plant Kingdom

Can you think of a place you have ever visited that did not have any plants at all? I doubt many of you can do this! Plants are everywhere!

Our lives depend on plants! They are used for food and shelter. They also give us most of the air we need to breathe!

Because there are so many kinds of plants, the biodiversity of plants is huge! Each biome, you have learned about, has different kinds of grasses, trees and shrubs!



The most important trait for all plants is that they are **autotrophic** ("ah-tow-tro-fick"). This means that they make their own food. Remember... It is the leaves of a plant that make its food in a process called photosynthesis. This makes plants different from animals, as you know that animals cannot make their own food. They are heterotrophic.

Plants can be sorted into two different groups:

Nonvascular plants ("non-vas-q-ler")

and

Vascular plants ("vas-q-ler")

Nonvascular plants do not have body parts to move water from their roots to the stem and to the leaves. In order to get the water they need to survive, they have to absorb (soak up) water through their body (just like a sponge!)

There are many different kinds of nonvascular plants. One kind of nonvascular plant that you can easily see is a **moss**. Mosses cannot move water from their roots to their stems and leaves. They absorb water, like a sponge, through their roots, stems and leaves! Most of the time, you will find mosses growing in damp places. Since water cannot be moved from the roots to the stems or the leaves, the roots of a moss never get very big. This is different from the roots of a tree, which can get very large!



Remember...

The roots of a moss cannot move water to the rest of the plant! Their main job is to attach the moss to soil, rocks or other plants!

Now on to a much larger group of plants...

The Vascular Plants!

Vascular plants can move water from their roots to the stem and to the leaves. Most of the plants you have seen in your life are vascular plants and they can be sorted into two different groups:

Non-Flowering plants and Flowering plants

Let's take a look at the non-flowering vascular plants first...

Ferns are a kind of **non-flowering vascular plant**. Ferns never produce flowers but they do have a stem. The stem moves water from its roots to the rest of the plant.

But if ferns have no flowers, how do they grow any seeds?

Because ferns, like many other plants, are different. They do not need to grow seeds to reproduce! They can drop their leaves onto the ground and grow a new plant! Not all non-flowering vascular plants are very small. Some of them can be very large, like a tree...

Conifer trees are another kind of Nonflowering vascular plant. The conifer is like the fern because it does not produce flowers!

However, conifers do produce seeds!

You learned in chapter six that conifers make pinecones. Pinecones are the seeds that are produced by conifers! Most of the coniferous forest biome contains plants that are conifers!





Now, let's explore some flowering vascular plants!

Most of the plants that you are used to seeing are **flowering vascular plants!** Flowers are very important to these plants because this is where the fruits and seeds are grown. Without the flowers, they could not produce the fruits or seeds. This would be a big problem for their life cycle. Without fruits and seeds, they could not produce new plants!

Most of our fruits, vegetables, trees, grasses and shrubs all come from flowering vascular plants!

Some vascular plants, like mint and poison ivy, can grow a new plant from their roots. The areas of the roots where these new plants begin to grow are called **rhizomes** ("ri-zomes").

Circle the hidden words from below:

F K M P K N B T L C M C G D X
 L L S O Y H c E O C I K C I C
 M Z O B S A D N K H C U W F W
 G O G W L S I C P F E R N S V
 N S D P E F X O X I X X L D A
 I L S G E R R B G D R H Q H S
 R T T R N T I M F S S P T E C
 E V S V O I T N G J T A B Z U
 W U I T N O K A G Q N X C X L
 O Y U G H Y I Z Z K A N Y S A
 L A N O N V A S C U L A R N R
 F K V O Z L T B V E P G T G J
 N S E M O Z I H R J R D D Y C
 O H M N T M W Y B E G R S B G
 N B P J Q E T T A L U I U B J

AUTOTROPHIC
FLOWERING
NON-FLOWERING
PLANTS

CONIFERS
KINGDOM
NONVASCULAR
RHIZOMES

FERNS
MOSS

Match the words in the first column to the best available answer in the second column.

- | | |
|----------------------------|--|
| _____ Plant kingdom | 1) plants without body parts to move water from their roots to the stem and to the leaves |
| _____ Autotrophic | 2) special areas on a plant's root that can grow a new plant |
| _____ Nonvascular plants | 3) nonflowering vascular plants which never produce flowers |
| _____ Moss | 4) plants with special body parts that move water from their roots to the stem and to the leaves |
| _____ Vascular plants | 5) vascular plants that make flowers |
| _____ Non-Flowering plants | 6) one kind of nonvascular plant that can absorb water with its entire body |

- _____ Flowering plants 7) non-flowering vascular plants
which never produce flowers but
do produce seeds
- _____ Ferns 8) vascular plants that do not make
flowers
- _____ Conifers 9) being able to make your own food
- _____ Rhizomes 10) a group of organisms that are
autotrophic and have some form of
leaf and stem and root

