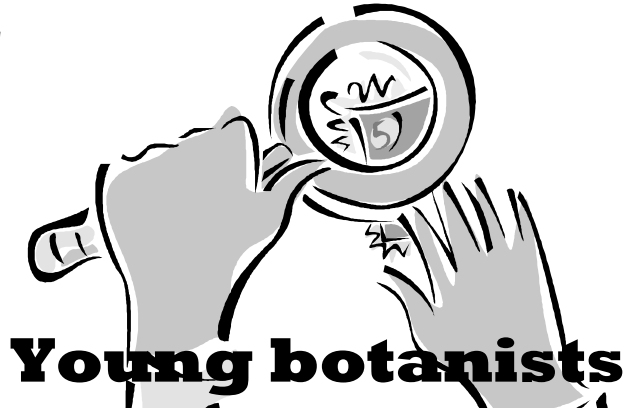




*August 1881*

THE BOTANIC GARDEN OF  
SMITH COLLEGE

*Plant Adaptation Up Close:  
A Biological and Artistic Interpretation*



**Young botanists**

**welcome to**

**the Lyman Plant House**

**and our exhibit**

***Plant Adaptation Up Close***

**How  
What  
Why  
Where  
Guide**

***All you need to use  
this little guide is a  
pencil, your eyes,  
and the energy to  
explore.***



**Have Fun!**




# What is plant adaptation

Plants live in different environments all over the world, and have to adapt to their circumstances *just as people do*.


In **Seattle** it rains a lot of the time. What items do you think Seattle people need?

Can you draw them?



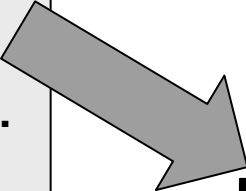
In **Massachusetts** winters are very cold and snowy. What do most New Englanders need?

Can you draw one?



*The weather in **Florida** is different. They have hurricanes. How do people keep their houses safe?*

**Plants have different needs too, depending on where they live. Some live in deserts, where water is scarce and heat is intense. Others live in warm, wet, rainforests. Still others actually grow in water or on rocks. Sometimes the soil lacks certain things plants need.**



**They must ALL adapt to their circumstances. That's what this exhibit is all about.**

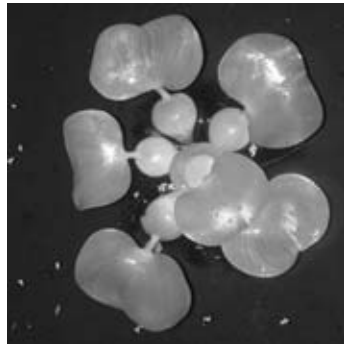


**Can you find me**

After you've read about some of these amazing plants, and seen their pictures, try to find them in the greenhouses! We'll tell you what rooms they're in. As you find each of these, check them off.



\_\_\_ **Elephant's Foot**



\_\_\_ **Water Hyacinth**



\_\_\_ **Staghorn Fern**



\_\_\_ **Peruvian Old Man Cactus**



\_\_\_ **Pitcher Plant**

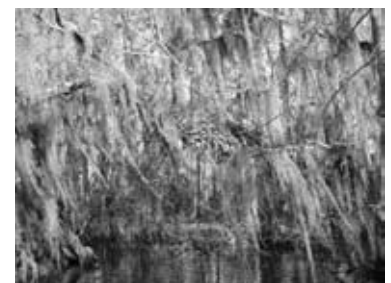


\_\_\_ **Epiphytic Orchid**



\_\_\_ **Victoria Water Lily**

**If you find them all, you can call yourself an *Honorary Botanist!***



\_\_\_ **Spanish Moss**



**What's my name**

This exhibit shows you several groups of plants that adapt in similar ways to their special circumstances, and we've given each group nicknames.

**Meat Eaters** \_\_\_\_\_

**Guzzlers** \_\_\_\_\_

**Drifters** \_\_\_\_\_

**Sunbathers** \_\_\_\_\_

**Squatters** \_\_\_\_\_

**Social Climbers** \_\_\_\_\_

**Vegetarians** \_\_\_\_\_



As you go through the exhibit, see if you can think of better nicknames for some of these plant groups, and write them in above.

Let's start our journey with the



### **Meat Eaters**

Plants need protein, just as people do, but the soil some plants live in doesn't give them what they need to make protein. So they get their protein by trapping insects.

Both the *Venus Flytrap* and the *Pitcher Plant* lure insects in, but they have different ways of holding onto their prey so it can't escape.

What does the *Venus Flytrap* use?

\_\_\_\_\_

What does the *Pitcher Plant* use?

\_\_\_\_\_

**Can you find us**



You can see these plants in the Warm Temperate House and the Stove House.

**AND**

*Use the 3-D glasses to look at the up-close pictures of the pitcher plant and another meat eater, the Bladderwort.*

Can you imagine a scary movie in which a giant **Venus Flytrap** eats people and whole cities?



Can you draw a scene from the movie?

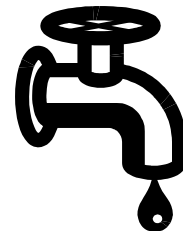
Can you find us



You can find all these plants in the Succulent House. The *Elephant's Foot* is especially easy to spot!

Let's move on to the

## Guzzlers



They live in dry environments, and need to find ways to provide a water supply for themselves.

The *Elephant's Foot* is like a big storage tank.

The *Barrel Cactus* stores its water too, and can expand like an accordion when more water is available.

But the *Resurrection Plant* has a different strategy.

What does it do? \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Find **Drifters** in the Warm Temperate House and Stove House

Can you find us

Now for something completely different, let's look at the



## Drifters

These plants don't need to worry about their water supply; they actually live in water.

But that creates problems too. They need to keep from sinking so they can have access to light and air.

The *Water Hyacinth* floats because its leaves are filled with air. Maybe this makes you think of the bubble some small children wear in swimming pools?

Don't you think the *Victoria Water Lilies* look like large trays? Their rims keep the surface water from sloshing in, and they have notches to drain off excess rainwater.

Want to draw a frog on a lily pad?



## Sunbathers

This group lives in intense heat and sun but needs to keep the sun from actually damaging them, just as many of us like to work and play in the summer sun but use sunscreen to protect against too much of it.

The *Mexican Plush Plant* covers itself with millions of tiny surface hairs to block out light.

The *Peruvian Old Man Cactus* grows what looks like a head of white hair to keep sun off his bald head.

Their strategies are similar but the *Vertical Leaf Senecio* has a different plan. How does it keep from getting too much sun?

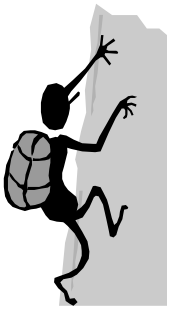
Can you find us

The *Old Man Cactus* is in the Succulent House.



The two groups of plants that we've nicknamed **Social Climbers** and **Squatters** don't sound like they'd be very good neighbors in the human world. But like all the other plants in this exhibit, they've simply adapted to their surroundings and live harmoniously in nature.

## Social Climbers



are vines that get sun by climbing on or over other plants and even objects.

How does the *Boston Ivy* attach itself to a vertical surface, such as a brick building?

And of course we all know about the dreaded *Poison Ivy*.

How does it attach itself to tree bark?

What happens if you touch *Poison Ivy*?

Can you draw a picture of an ivy-covered building you know?

## Squatters

grow upon or attach themselves to other plants without having roots in the soil. In trees or on cliffs, they can escape animals and get more light than plants on the forest floor.



Our three **Squatter** examples don't look much like one another.

In the Stove House find the amazing *Spanish Moss*, which has no roots and gets its water directly from the air.

While you're there, look at the *Epiphytic Orchids*, which cling to the bark of trees

The *Staghorn Fern* works its way into fine cracks and crevices and can be found in the Fern House.

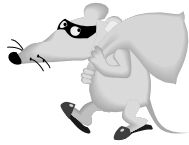
Why do you suppose it's called a Staghorn fern?

Did you see the Spanish Moss in the Exhibition





Why do you think you might not find any of these at our greenhouse?



## Now we come to the **Vegetarians**

They seem to live off the hard work of other plants. You might call them thieves, since they invade other plants to take what they need.

How do the *Dodder* and the *Mistletoe* attach themselves to other plants?

*Dodder* \_\_\_\_\_

*Mistletoe* \_\_\_\_\_

Almost finished.  
Draw a picture of your visit to the Greenhouse.



What is your favorite thing in the Greenhouse ?



*Did you enjoy yourself?*

*Did you learn something?*

*Did you meet some new plants?*

**Thanks for coming.**  
***Please come again!***