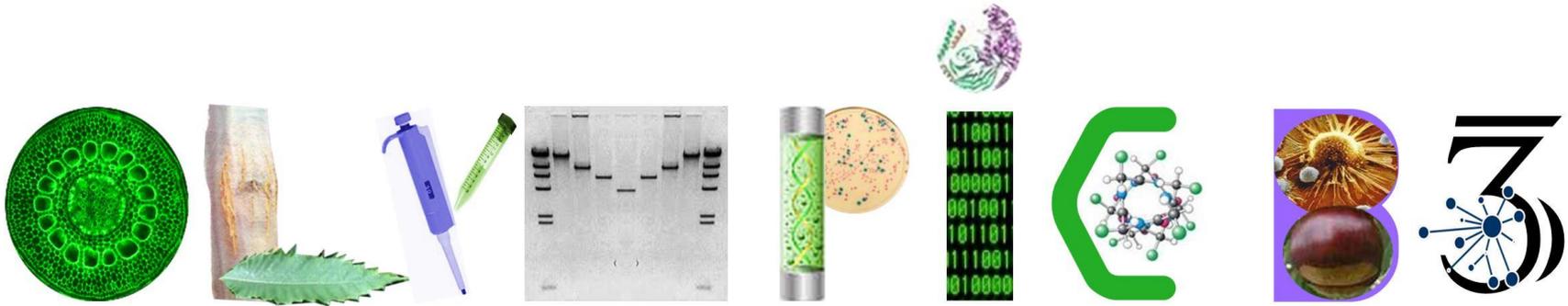


B-3 Summer Program – 1st Day

- **Overview**
- **Introductions (Getting to Know You Activity)**
- **Pre-assessment**
- **Speakers**
 - Ms. Lisa Thomson – President TACF
 - Mr. Steve Barilovits – Treasurer
 - Ranger Kelly Cooke – Crowders Mountain
- **Sample collection and phenotype**
- **Thursday and Friday's Field Trips**



OLYMPIC B3: Biotechnology, Biodiversity and Bioinformatics

http://webpages.uncc.edu/~jeweller2/pages/SummerCamp2016/SummerCamp2016_Schedule.html

Chestnut Family

(*Castanea species*)

	Chinkapin	Japanese	Chinese	European	American
Blight resistance	slight	moderate	high	slight	none

DNA Barcoding:

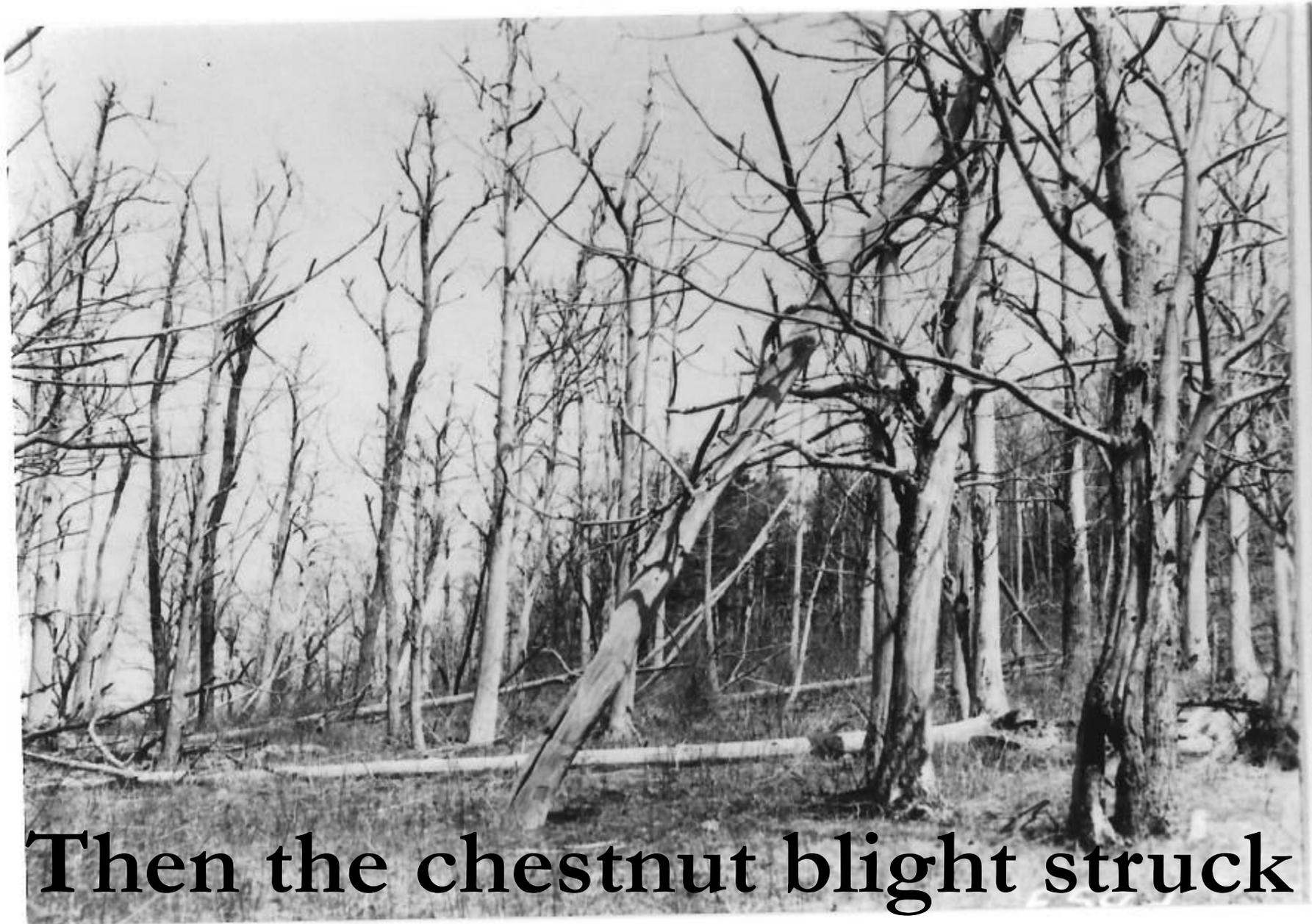
Using the DNA from the chloroplast,
Distinguish the American Chestnut
(no resistance to the fungal blight)
from the Chinese Chestnut (high
blight resistance).



The blight is caused by a fungus, ***Cryphonectria parasitica***, introduced from Asia.

Blight enters the tree through the cracks typical of chestnut bark and through wounds. It forms a canker and quickly girdles the tree.





Then the chestnut blight struck

Introductions

- Staff
- Getting to Know You Activity

Pre-Assessment

Daily Schedule

- **June 15th - 30th**
- **Labs: Monday – Thursday**
 - 9 am – 2 pm**
- **9:00 – 10:00 am**
 - Job of the day information**
 - Snack**
- **10:00 – 11:30 am**
 - Lab**
- **11:30 – 12:00 pm**
 - Lunch**
- **12:00 – 2:00 pm**
 - Lab**
 - Speakers**

Field Trip – Research Orchard 6/16

Purpose: Understanding Tree Research Sample collection for laboratory work

- **Thursday, 6/12**
- **Leave at 7:45 am**
- **Schedule**
 - **Orientation: 10:30**
 - **Field work - 1 ½ hours**
 - **Lunch**
 - **Learning about the orchard**
- **Permission slip**
- **Dress:**
 - **Long slacks**
 - **Closed toe shoes**
 - **Crew length socks**
- **Water bottle (refill)**
- **Medication, if needed**
 - **Wasp/bee stings**
 - **Asthma**

Research orchard



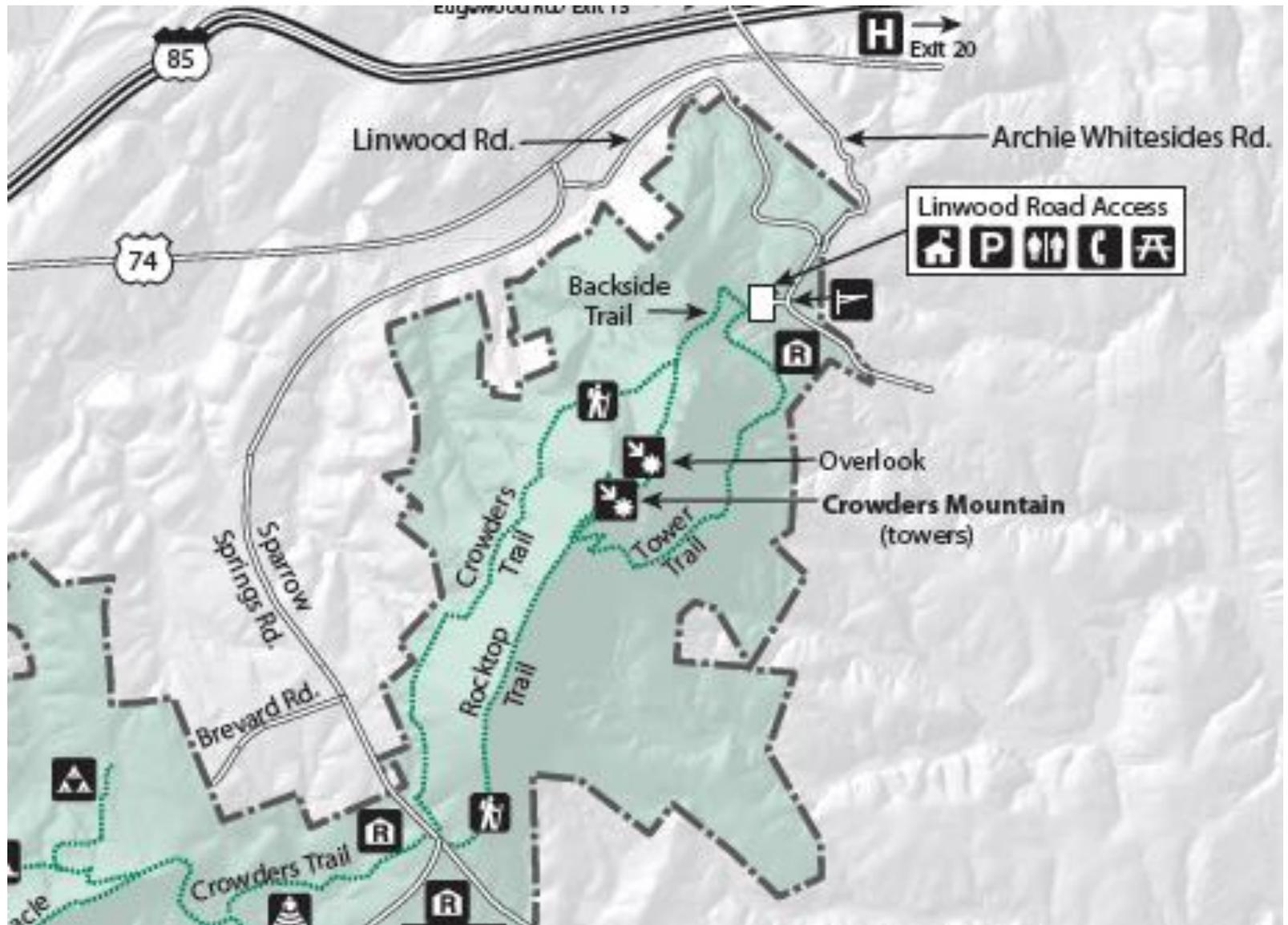


Field Trip – Crowders Mountain State Park

Purpose: Sample collection for laboratory work Understanding forest environment

- **Friday, 6/17**
- **8:00 am**
- **Schedule**
 - Orientation
 - Field work - 2 ½ hours
 - Lunch
- **Permission slip**
- **Dress:**
 - Long slacks
 - Closed toe shoes
 - Crew length socks
- **Water bottle (refill)**
- **Medication, if needed**
 - Wasp/bee stings
 - Asthma

Crowders Mountain State Park



Chestnut Sprout Crowders Mt. Fall 2007



- American Chestnut Restoration Project - USDA Forest Service - Southern Region

Education Box

Leaves:

[Top View](#) | [Bottom View](#)



Buds and Stems:

[American](#) | [Chinese](#)



Stipules:

[American](#) | [Chinese](#)



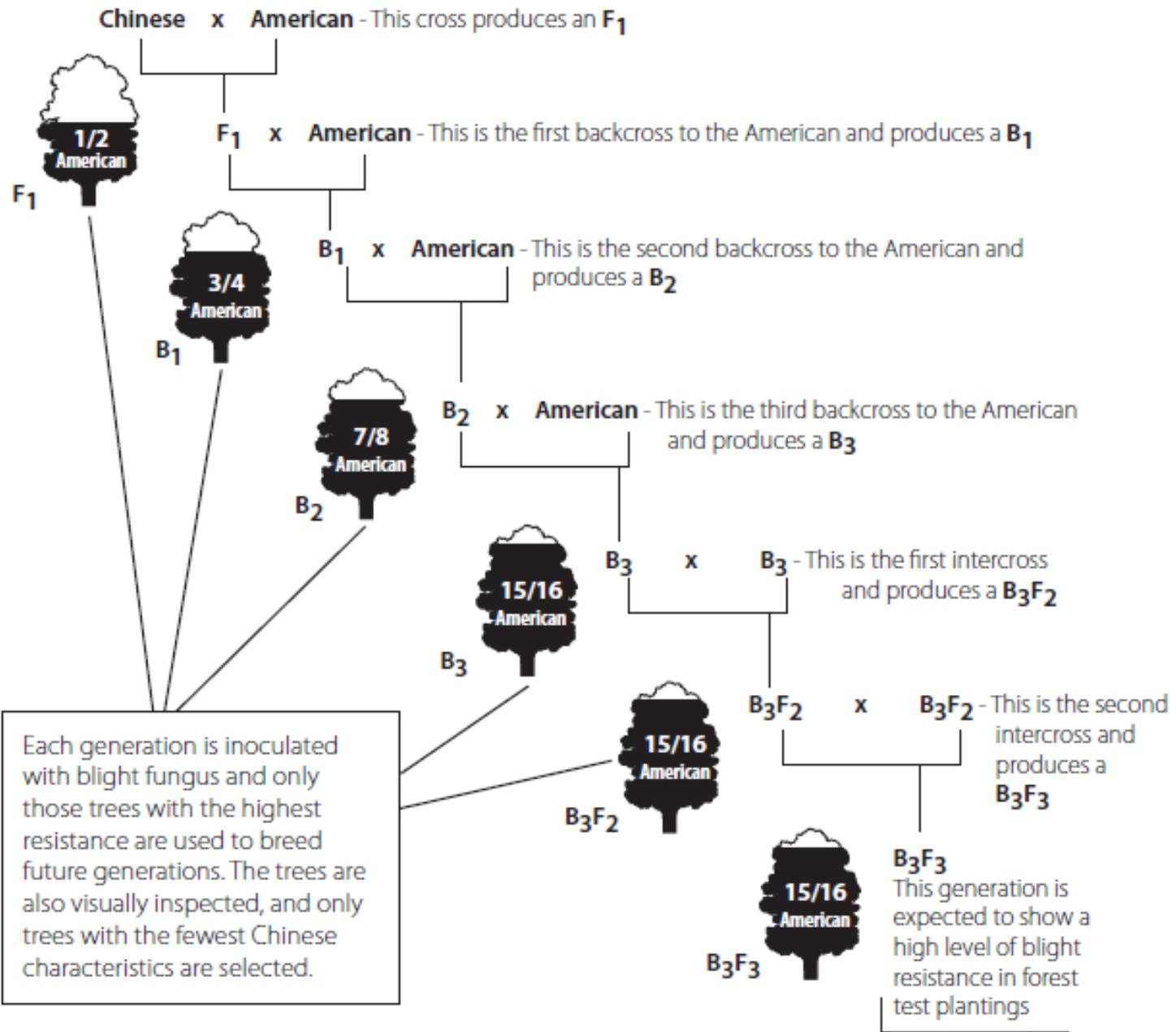
Burs and Nuts:

[Burs](#) | [Nuts](#)



THE AMERICAN CHESTNUT FOUNDATION'S BACKCROSS BREEDING PROGRAM

TACF's backcross breeding program begins by crossing an American chestnut and a Chinese chestnut. This is followed by three successive generations of crossing back to American chestnut trees to restore American characteristics. In between each breeding step, the trees are inoculated with blight fungus (*Cryphonectria parasitica*) and only those trees showing strong blight resistance and American characteristics are chosen to breed additional generations. For the final two generations, trees with proven blight resistance are intercrossed with each other to eliminate genes for susceptibility to blight introduced from the American parents.



Background - Hybrids

- [The American Chestnut Foundation](#)
- Videos
 - Arbor Day 2014
 - Ohio - 4 of 8 minutes (history)

Background - Hybrids

- [The American Chestnut Foundation](#)
- Videos
 - Arbor Day 2014
 - Ohio - 4 of 8 minutes (history)