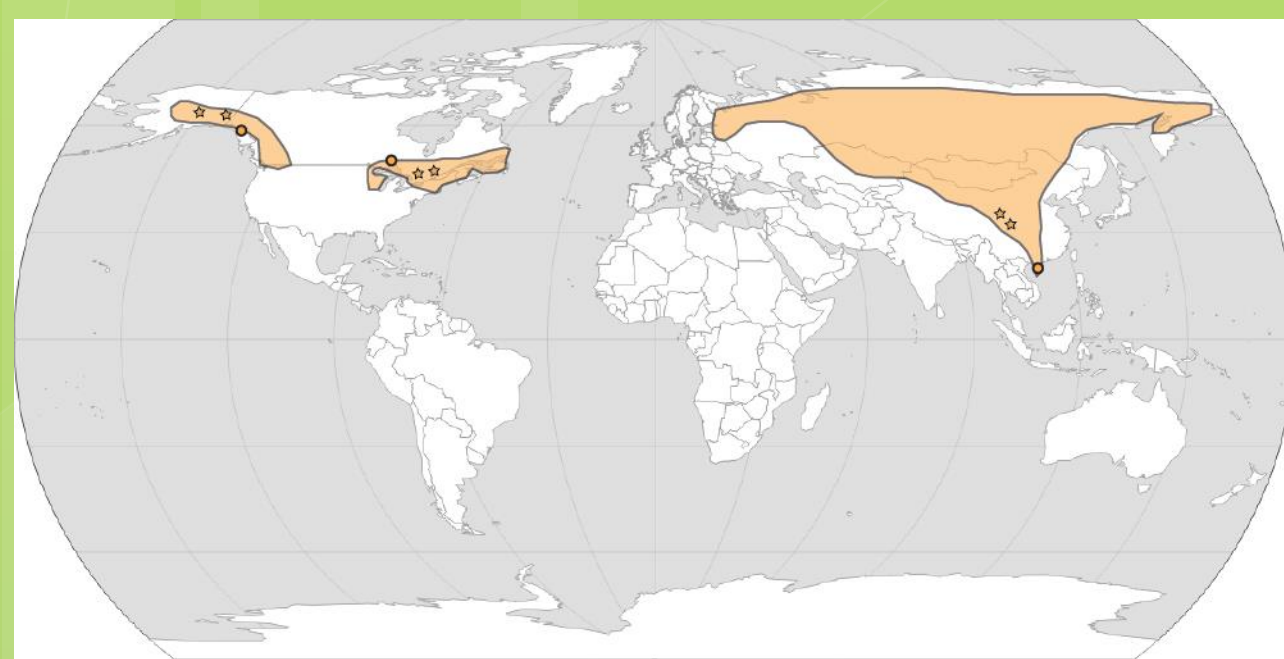


Roberta G. Walker

Introduction

- ***Cryptogramma***
 - 2-4 leaves all together in one group
 - Short leaf segments about 4 mm wide
 - Sporangium contains 64 spores
- **Steller's Parsley Fern**
 - Leaf diameter is from 1-1.5 mm and 3-15 cm wide
 - Come from eastern and western North America and northern Asia
 - Have a vascular system, megaphylls (leaf with multiple veins) and the fern reproduces spores by themselves
- **Question**
 - Which population is more closely related to each other?



Results

- Found out that Asia and western North America are related
- The photo below, it shows the size of each line, and as you can tell, mine is small, it means it isn't really supported
- There might be divergence, but it hasn't gone far
- We corrected the chromatograms and combined the two sequencing to reach each PCR together and looked over them to see if anything was correct.

Hypothesis

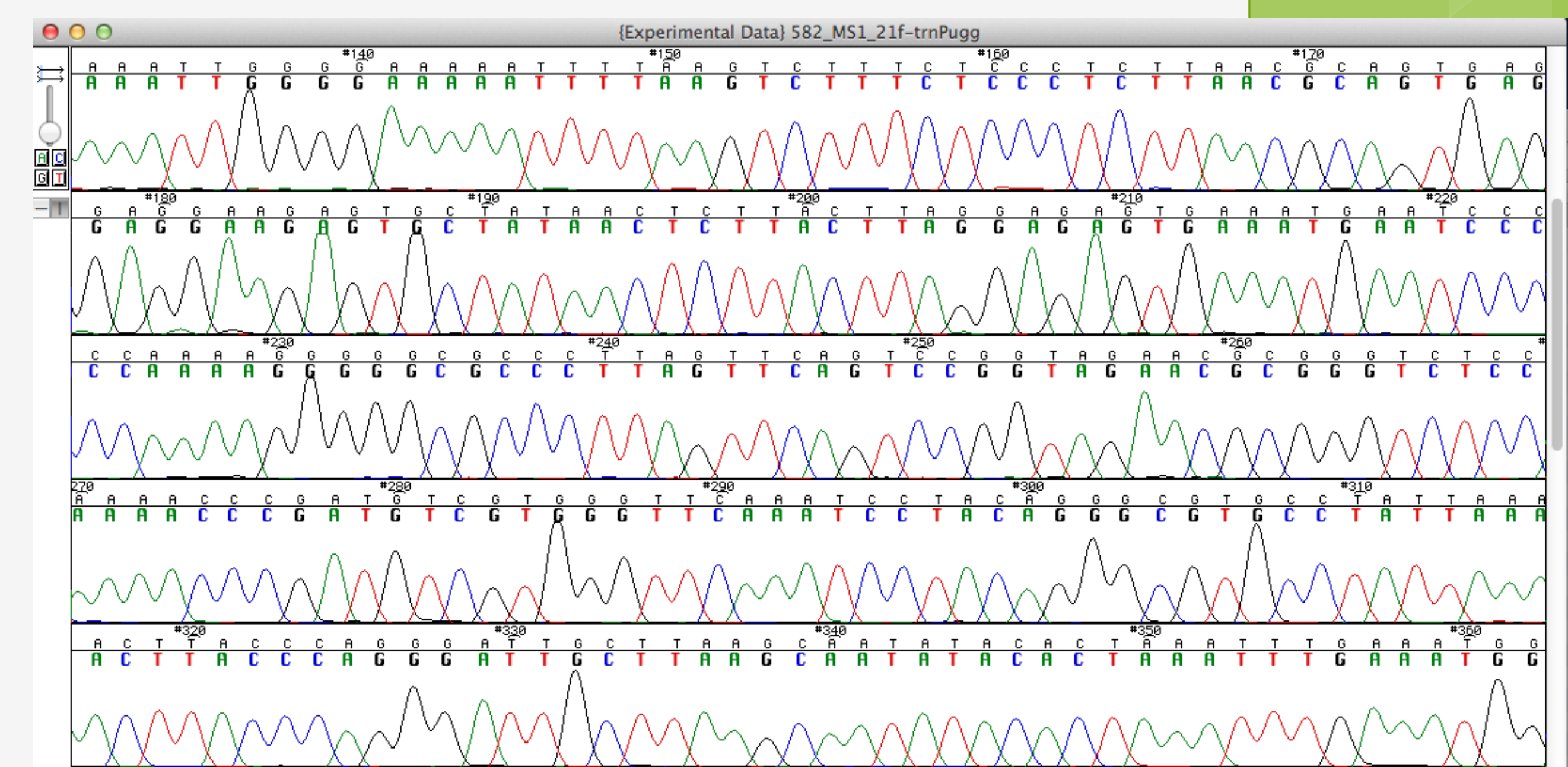
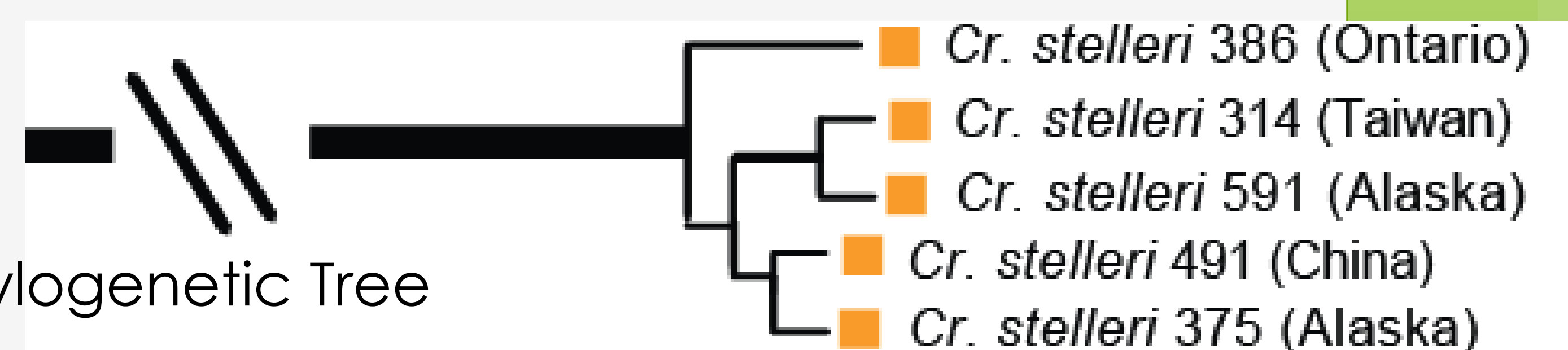
- Northern Asia and western North America *C. stelleri*'s population are more closely related out of all the populations combined



Methods

- Extract anywhere from 10 to 20 milligrams of DNA from leaf tissue
- Go through the Polymerase Chain Reaction (PCR) that involves making a mix of primer, TAQ, water, and DNA plant tissue
 - Genes: trnP-petG, atpB-rbcL, and rps4
- Visualize the PCR product on a 1% Agarose gel
- Sequence the PCR result

Phylogenetic Tree



Discussion

- In the end we found out that my hypothesis was correct, but the branches are thin, which means it isn't strongly support. We know that Alaska and China's population is closely related, Alaska and Taiwan are related, and Ontario is un-rooted.

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