

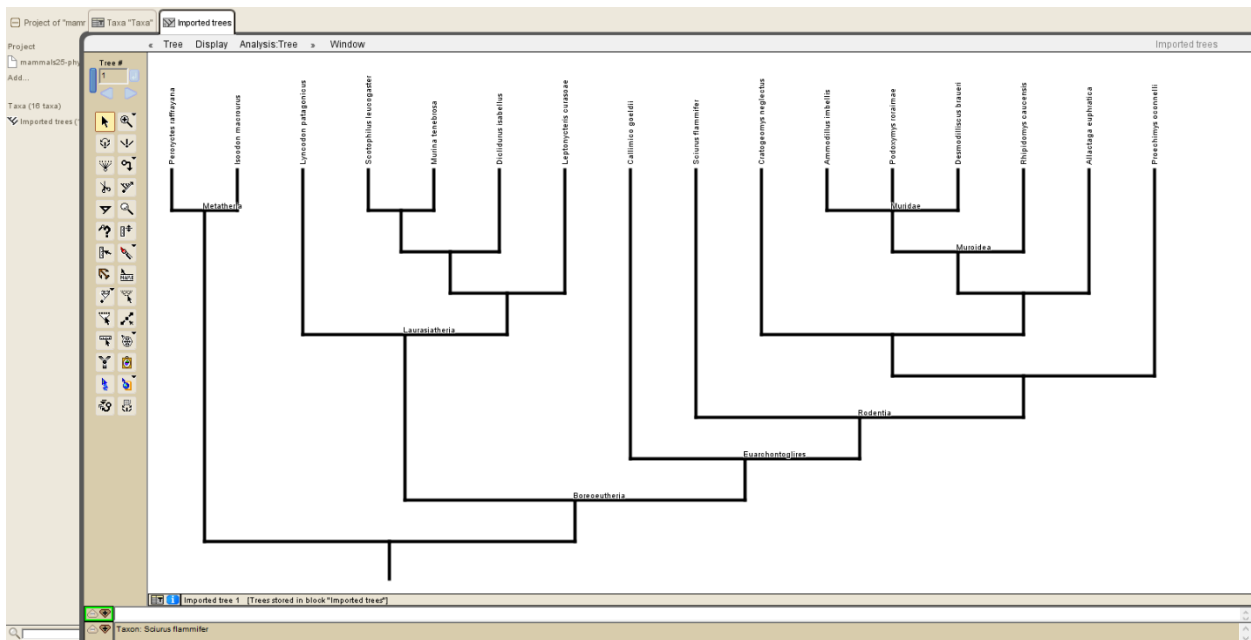
Exercise for Evaluating Mesquite September 2018

Please try the following exercise to evaluate the current version of Mesquite, a modular, extendible software for evolutionary biology, designed to help biologists organize and analyze comparative data about organisms. In this exercise, we will focus on specific tree sensemaking features.

If you have any difficulties during the exercises, please feel free to ask for assistance.

Exercise:

- Please open the file 'mammals25-phyloopen-v10.phy. Interpret as "simple Newick/Phylip treefile."
- Right-click "imported trees" on the side and click view trees
- You should now see a mammal phylogenetic tree displayed in Mesquite that looks similar to the figure immediately below.



- Your task in this exercise is to annotate this tree as if you were preparing it for a publication or for teaching others. Add colors, highlight and annotate major clades with casual names.
- The tree can be annotated as three, multi-tip clades and two single tips. For your task, color the branches so each major clade is a different color.
- The three large clades to color contain: (1) bandicoots, (2) bats, (3) rodents.

Coloring Branches

To color branches, you need to first find and click the following icon with a paint brush on it:



Once clicked, to color a branch, touch on it. You can change the color of paint by touching on the tool in the tool palette and holding the mouse button down. A menu should appear offering choices of colors. You can also select "Remove Color", which turns the tool into one that removes paint color from branches.

Annotation of Tree Regions

To annotate a region of the tree, you need to first find and click the annotation icon:



You can annotate a region of the tree by putting the annotation on the branch leading to the clade. Just click the branch to add the annotation text. To show the annotation text, hover over it or display it by holding down on the annotation icon until a context menu pops up to click "See Notes On Tree."

Rotate Children in a Clade

The final "ready for publication" state of the tree shown below has two clades in a different configuration than the original loaded dataset. Please compare and decide which clade to rotate.

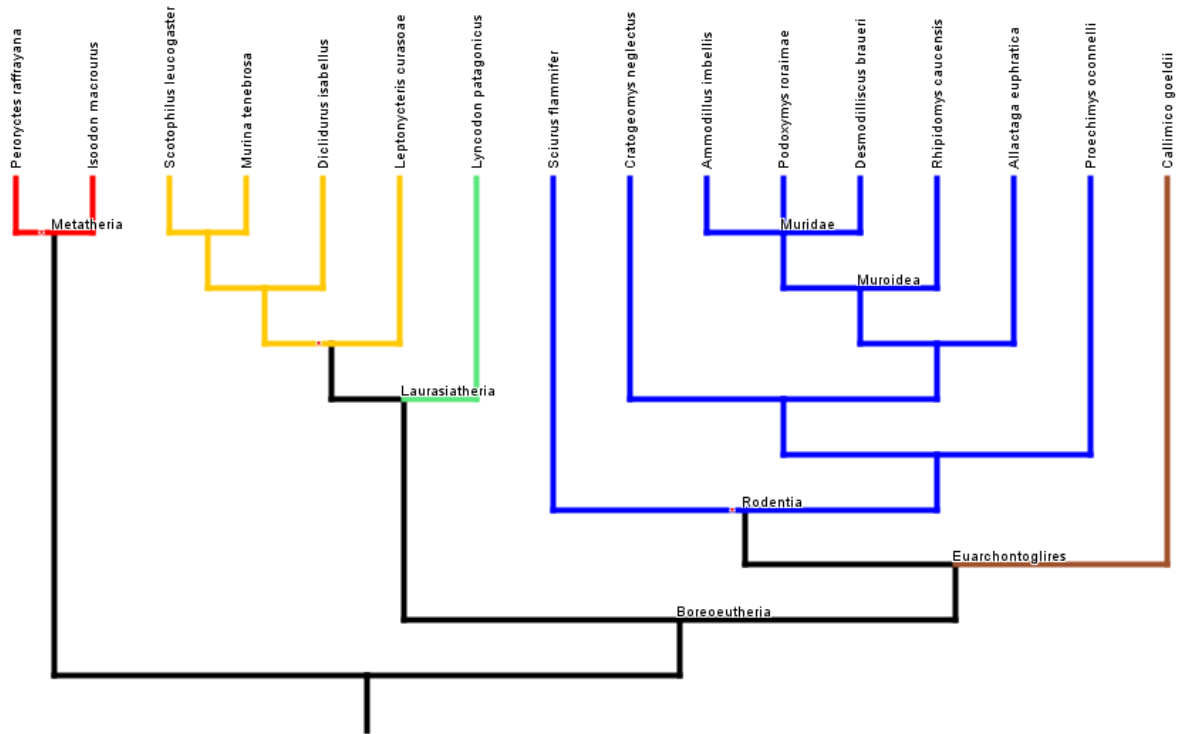
To rotate a clade, you will first need to find and click the following icon:



The branch interchange tool allows you to interchange two branches. To rotate a clade with it, you need to click and drag from the first branch you want to swap around and keep dragging until the illustrated line reaches the second branch you want in the swap. Release, and they should be swapped if done correctly. Remember the "Undo" capability if you have any trouble.

Final Appearance

Try to make the final annotation image look somewhat similar to this image below. You don't have to match it exactly, just get familiar with how you would perform the color and annotation changes. The annotation text is hidden in the picture.



- When you are finished, please show the assistant your completed example and take the post-questionnaire to provide us feedback on your experience.
- If you haven't yet taken PhyloPen experience to compare, please ask the assistant to help you switch to the same test using PhyloPen.