Evolution of tooth morphology in Mylagaulidae
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1. Introduction

Mylagaulidae:
- Characteristic of Miocene faunas
- Burrowing rodents
- Hypsodont (high-crowned) teeth like horses
- Include the only horned rodents
- Wear of the teeth leads to enamel lakes on the surface

Hypothesis:
We will see changes in tooth morphology, in particular increased amounts of enamel with drier environments.

2. Materials and Methods

X-ray micro-computed tomography:
- Used to view changes in tooth morphology.
- Can view the entire tooth without damaging it.

NRRD Files:
- Use the x-ray micro-computed tomography images in a program called Fiji to make NRRD Files.
- A total of 53 NRRD files made so far.

3. 3D Slicer Program

- Enables us to make 3D models of x-ray micro-computed NRRD files.
- We use these 3D models to view the entire tooth and see the shape.
- Shown below is a view of a 3D image in slicer. The images on the bottom are images of the scans used to make the 3D model. These scans are edited to allow us to improve the quality of the 3D model.

4. Summary

Below is a good summary of the process used in making a single 3D model.

5. Preliminary Results

With the given research so far, evidence shows that an increase in the number of lakes as well as volume, thickness, and complexity of enamel are consistent with an increasingly open

6. Acknowledgments and References

This research was mentored by Jonathan Calede. We would like to thank the museums who provided the specimens for research: UCMP University of California Museum of Paleontology, UWBM University of Washington, Burke Museum of Natural History, UOHN University of Oregon Museum of Natural and Cultural History, FMNH Field Museum of Natural History, SDSM South Dakota School of Mines Museum of Geology. This research is part of a collaboration with Samantha Hopkins. Funding was provided by The Ohio State University. Scanning was performed at the Center for Electronic Microscopy and Analysis with the help of Carley Goodwin.