

Multimodal Imaging of Harvester Ants: High Resolution Insights into Biological Structures

Elise Gonzalez,^{1,3} Dr. Jamel Ali^{2,3}

¹Department of Biological Science, FSU College of Arts and Sciences

²Department of Chemical and Biomedical Engineering, FAMU-FSU College of Engineering

³National High Magnetic Field Laboratory

Introduction

- Bio art combines bio-aesthetic framework, prioritizing two-way identity of the subject as a biological sample and visual narrative aiming to bridge the gap of science and art (King, 2019).
- Sample images involved a wide range of biological samples including fungi, cells, bacteria, or tissues.
- My samples focused on harvester ants.
- Harvester ants are large, reddish-brown ants that nest in the ground and are well known for collecting seeds. They typically inhabit arid environments where they construct distinct mounds cleared of vegetation. They are vital for seed dispersal but can inflict painful, venomous stings if disturbed. (Hölldobler & Wilson, 1990)



Results

- At the time of capture, some ants were alive, while others had died due to natural causes.
- Images were taken using the VHX microscope at 50x, 80x, and 1500x magnifications.
- Images were exported and edited in Photoshop.

Summary

- Using various types of microscopy, raw biological data was transformed into aesthetic narratives. These techniques revealed hidden structural complexities, allowing for a transition from scientific documentation to Bio-art.
- Living ant samples were often unpredictable, and limited imaging windows required rapid technical adaptation.
- Bio-art serves as a visual bridge, making "intimidating" science accessible. It translates complex microscopic structures into visceral experiences that educate and influence public perception.
- By presenting living systems as art, this project encourages viewers to move beyond memorization and toward critical thinking regarding bioethics and our relationship with the natural world.
- Using biological media highlights the fragility of life, functioning as a tool for ecological storytelling and scientific outreach.
- As this project progresses, I will be submitting photos and videos to the Nikon Small world Competition.

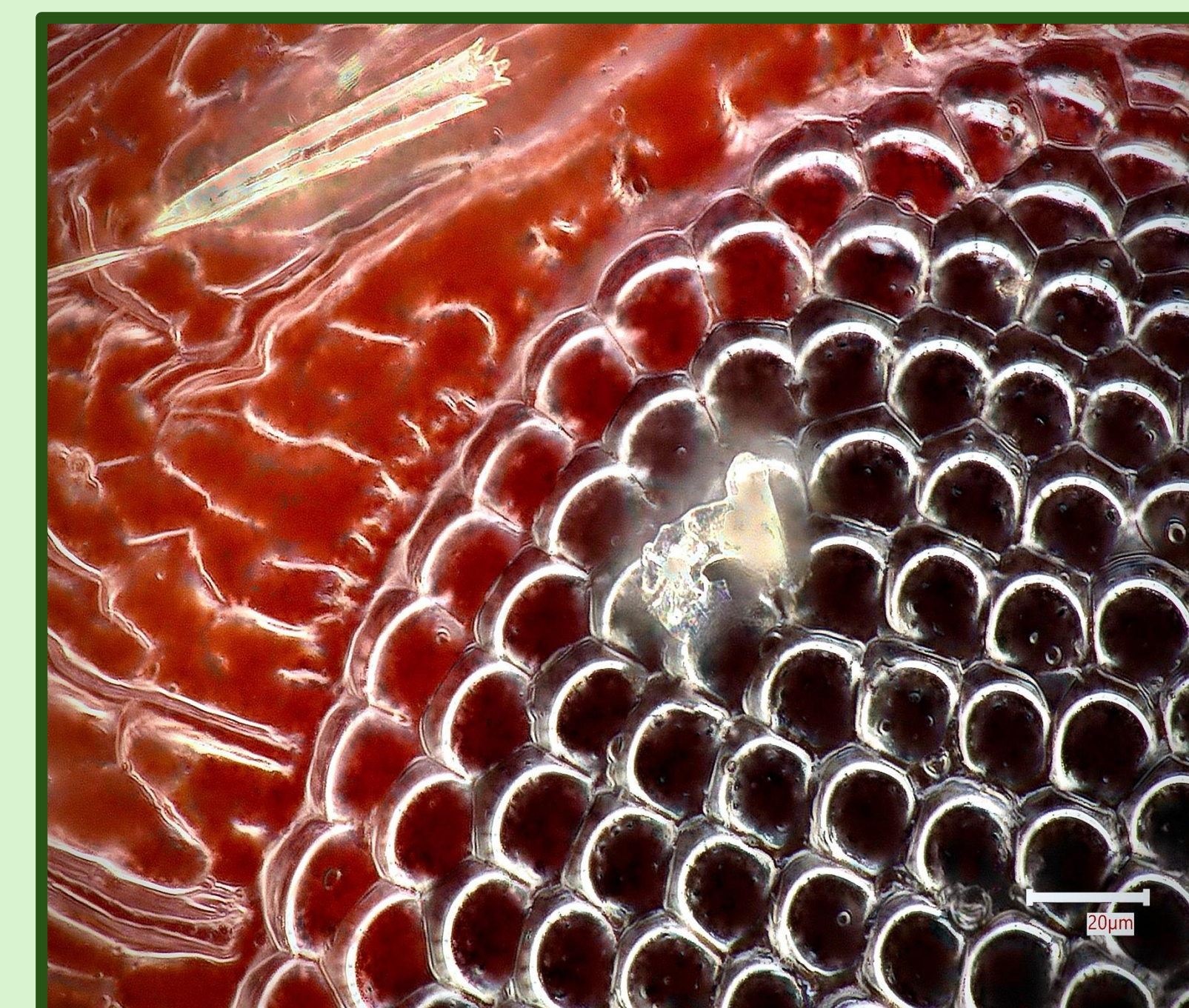
Methods

- Imaging the samples required sample preparation, photography using the microscope's digital software, and editing using Photoshop.
- Images were captured using the VHX microscope at magnifications ranging from 50x to 1500x.
- The VHX microscope was used because it worked best to get clear imaging of the large samples and allowed for 3D focusing on the harvester ants.



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References

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