

Microbio Art

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Abstract :

- BioArt is a type of art that combines biology and artistic expression by using living organisms or biological samples to create artwork. The term was first used in 1997.
- BioArt helps connect science and art, showing how both fields can work together to create new ideas and ways of understanding life.
- Microscopic BioArt focuses on images taken through microscopes and presenting them in an artistic way.
- This type of art can also help people better understand scientific ideas by showing the beauty and structure of biological organisms.
- In this project, microscopic images were taken using light microscopy techniques to capture detailed views of biological samples.
- The samples used in this project included:
 - A mammal eye section
 - Fish scales
 - Fish gill tissue
 - A section of a starfish arm
- After taking the image's, editing software was used to improve color, contrast, and composition to create visually appealing images.
- This project shows the hidden beauty of biological structures and how science can inspire creative artwork.

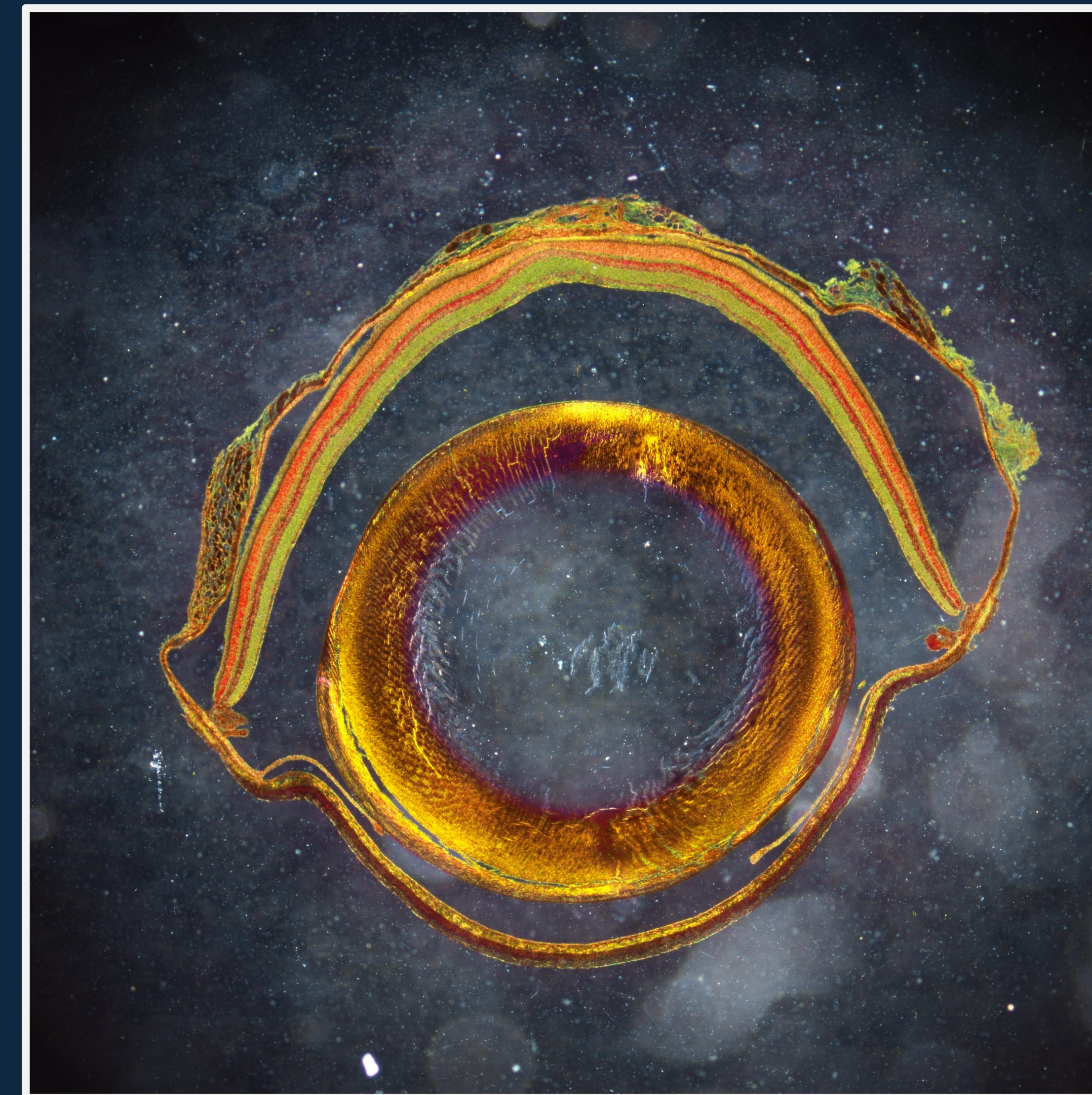
Methods:

- Biological samples used in this project included a mammal eye cross section, a fish scale, fish gill tissue, and a section of a starfish arm.
- Samples were selected and prepared on microscope slides before imaging.
- Images were captured using optical microscopes, including the Nikon Ni-U, Keyence VHX-7000, EVOS M5000, and Leica EZ4 W stereomicroscope.
- Optical microscopes use visible light and multiple lenses to magnify small biological structures so they can be clearly observed.
- Several light microscopy techniques were used to capture images, including brightfield, darkfield, and differential interference contrast (DIC).
- Images were taken using a camera attached to the microscope with magnifications such as 4x, 20x, and 40x objectives.
- After image capture, the photographs were selected and post-processed using editing software including DaVinci Resolve, Adobe Lightroom, and Adobe Photoshop to enhance color, contrast, and clarity.

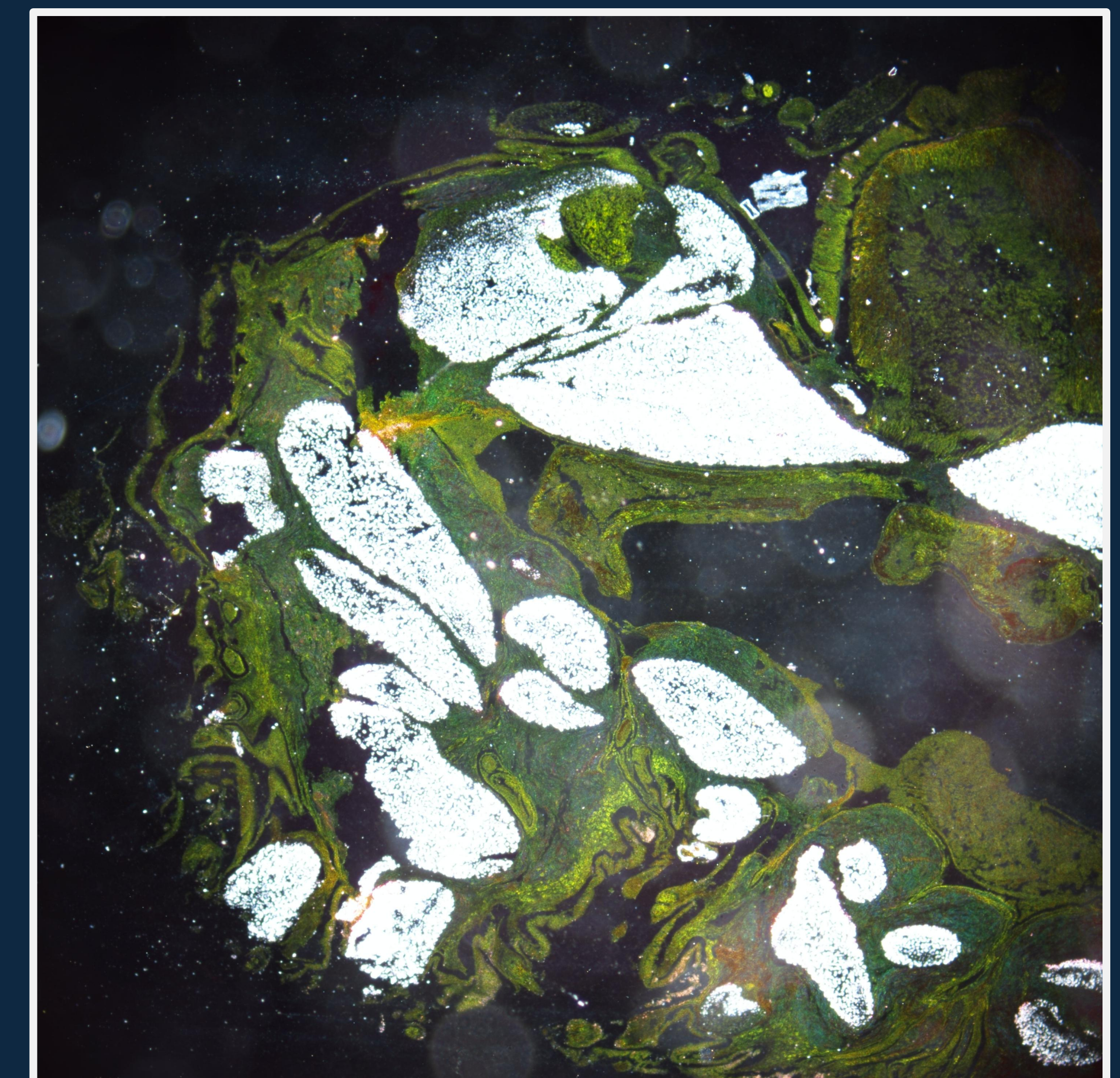
Resources:

- Microscopy Australia. (n.d.). *Microscopy concepts – What is microscopy* [Web module]. MyScope. https://myscope.training/Concepts_What_is_Microscopy
- Microscopy Australia. (n.d.). *Light & fluorescence microscopy – Basics* [Web module]. MyScope. https://myscope.training/LFM_Basics
- Microscopy Australia. (n.d.). *Scanning electron microscopy – SEM basics* [Web module]. MyScope. https://myscope.training/SEM_SEM_Basics
- www Nikon Small World. (n.d.). *Masters of Microscopy: The people behind the lens.* <https://nikonsmallworld.com/masters-of-microscopy>
- Image Quality Comparison Amateur Microscopy. (n.d.). *Image Quality Comparison*  *Amateur Microscopy* [Video]. YouTube. <https://www.youtube.com/watch?v=Gou-l4Bxiq0>
- Weston, F. (2022, November 16). *Protists and pocket cinema cameras* (pp. 44-47). *Film & Digital Times, Issue 117.* <https://www.fdtimes.com/pdfs/free/117FDTimes-Nov2022-3.00-150.pdf>
- Vale, R. [Ron Vale]. (2018, October 15). *Setting up Köhler illumination (Ron Vale)* [Video]. YouTube. https://www.youtube.com/watch?v=P1Tb_slWII

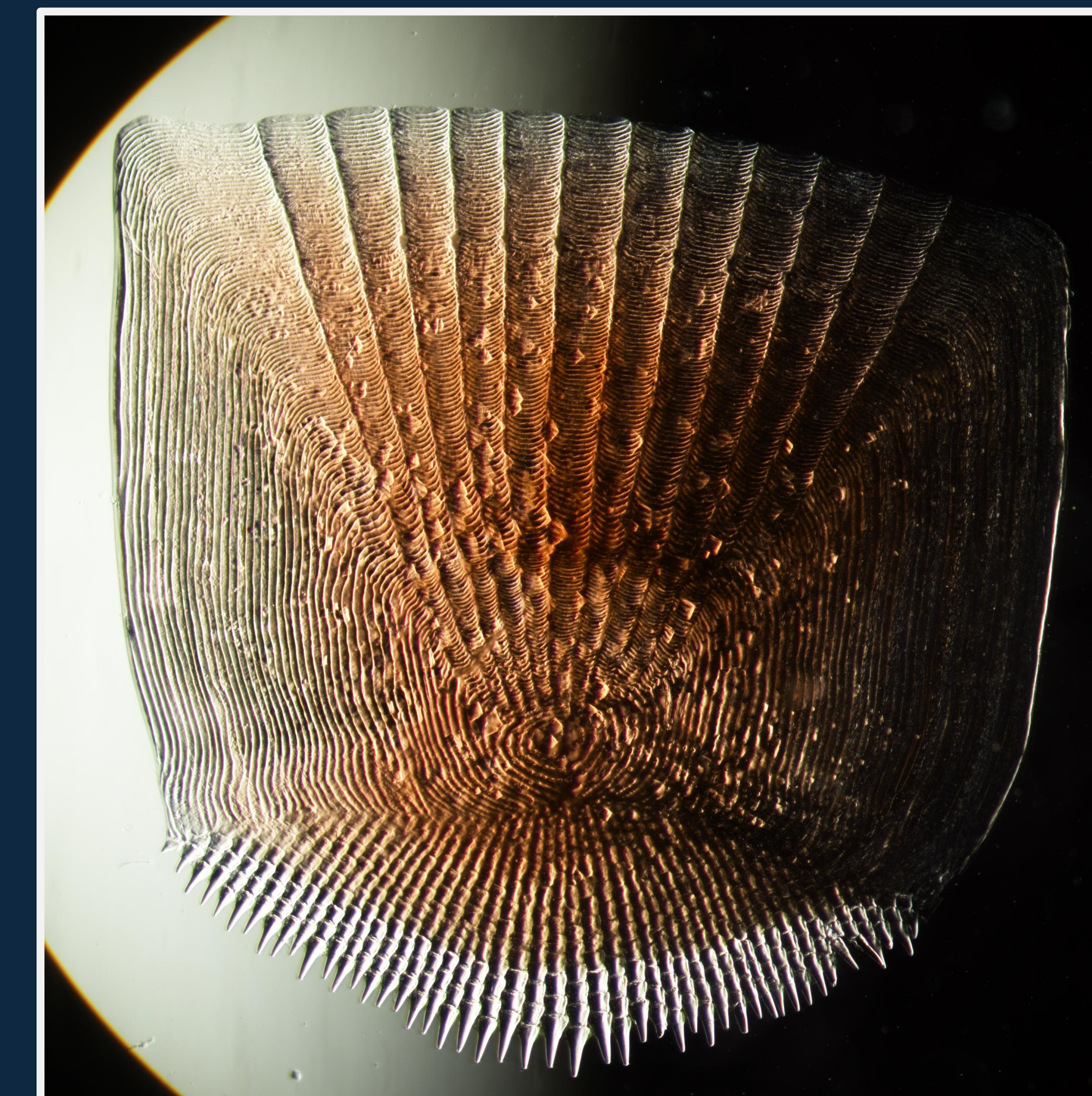
Results: Images



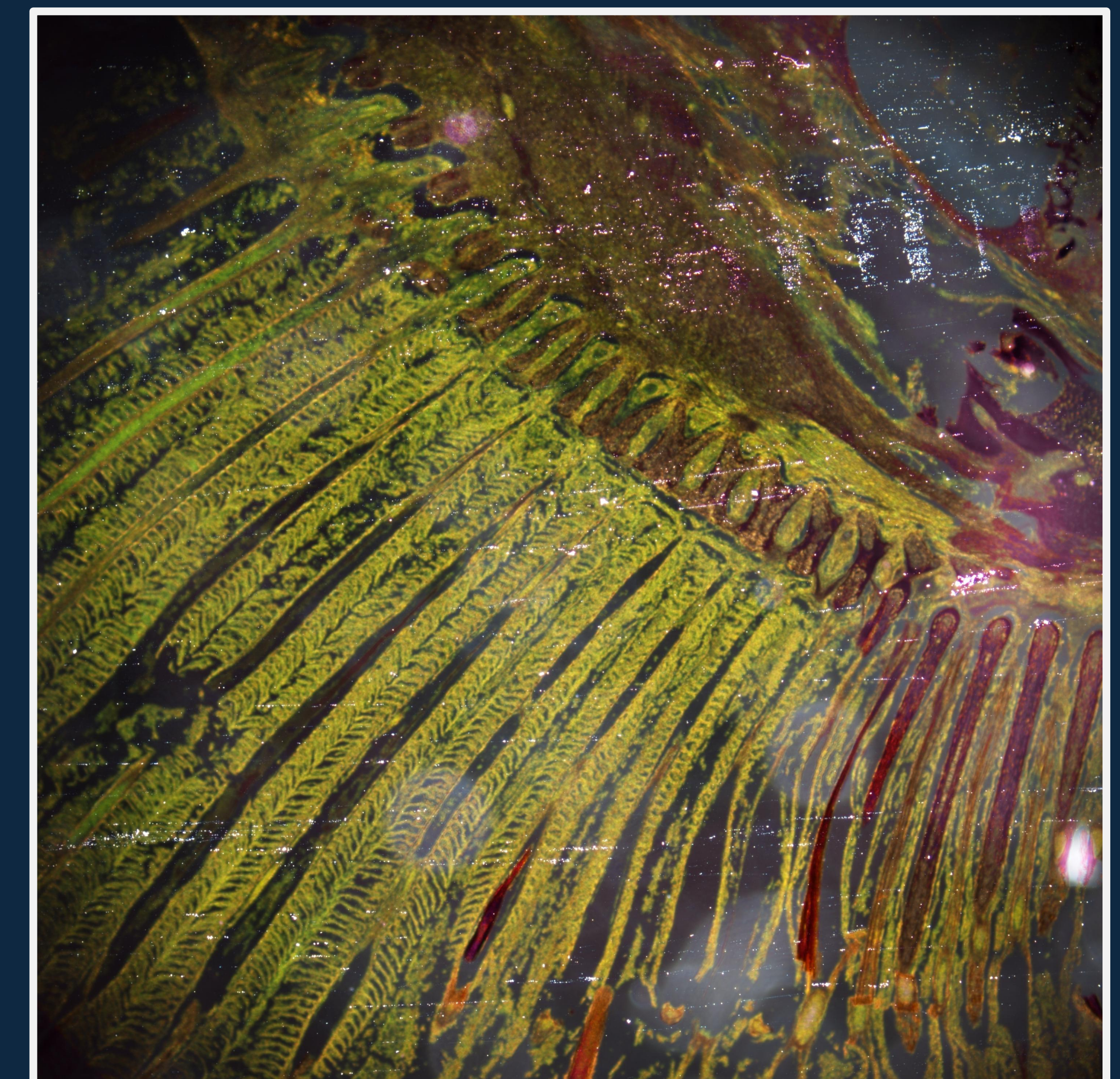
Mammal Eye taken under 40x magnification and on Phase contrast 3



Starfish arm Cross section taken on 10X magnification on phase Contrast 3



Fish Scale taken on 40X Magnification with half on half off phase contrast 3



Fish gill taken on 40x Magnification with Phase Contrast 3