

STEPHANIE WARE
RESEARCH ASSISTANT
FIELD MUSEUM, CHICAGO



EARLY PHOTOGRAPHY



THE FIELD MUSEUM IS HOME



1986



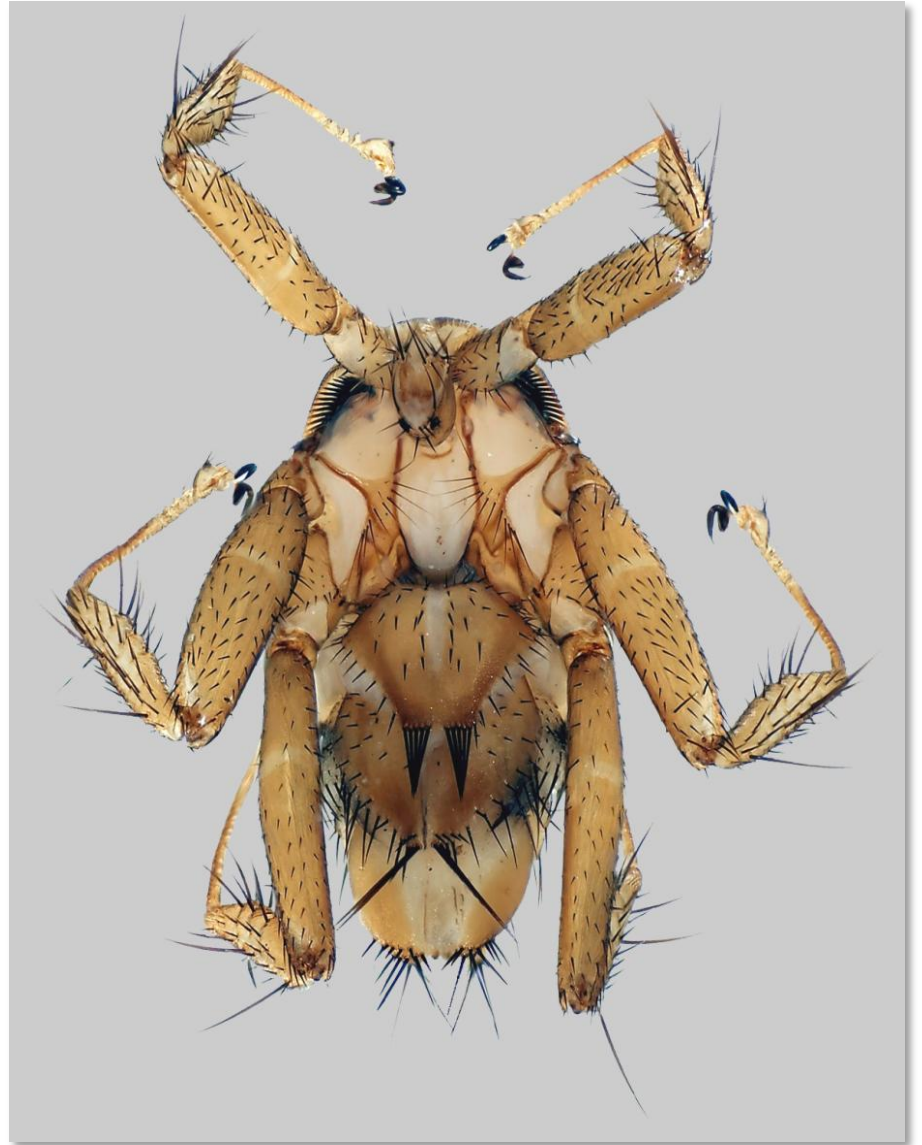
1998



ILLINOIS PEREGRINE FALCON PROGRAM

BAT FLIES

- Diptera (true flies)
- Obligate blood-sucking parasites
- Only found on bats
- Live in fur and on wing membranes
- Worldwide
- ~230 describe species in the Streblidae family
- ~275 described species in the Nycteribiidae family



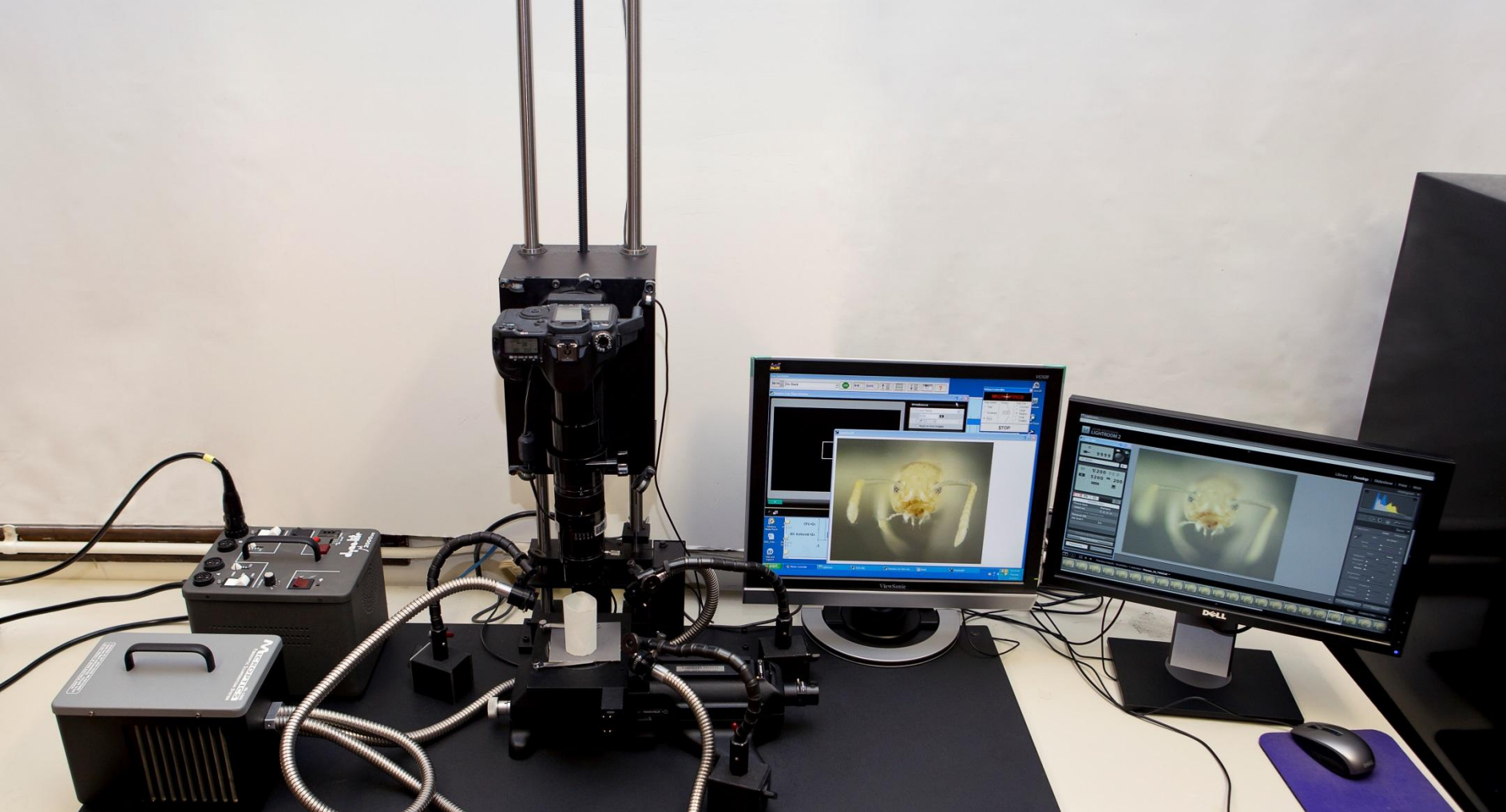
Bat Flies Like an EMu: Digitization, conversion and accessibility of the Field Museum's bat fly collection



FMNH Collection

- 75% of known world species
- 40% of types of known world species
- Most types slide mounted, the rest in 95% alcohol

- Proof, prepare and upload 24110 Streblidae records
- Proof, prepare and upload 1734 Nycteribiidae records
- Photograph all type slides
- Photograph wet specimens
- Scan primary descriptions of all species and upload to EMu as .pdfs



MICROOPTICS SYSTEM

Search: Vertebrate Ectoparasites

CLICK ON THE CATALOG NUMBER BELOW FOR DETAILED RECORD INFORMATION

[New Search](#) | [Contact sheet](#)

1 to 720 of 720

Ectoparasite Scientific Name	Host	Country	Province/State/Territory
Aspidoptera falcata Wenzel, 1976	Sturnira lilium	Nicaragua	Jinotega
Aspidoptera falcata Wenzel, 1976	Sturnira lilium	Honduras	Atlantida
Aspidoptera falcata Wenzel, 1976	Sturnira lilium	Honduras	Atlantida
Aspidoptera falcata Wenzel, 1976	Sturnira magna	Ecuador	
Aspidoptera falcata Wenzel, 1976	Sturnira lilium	Paraguay	Amambay
Aspidoptera falcata Wenzel, 1976	Sturnira lilium	Paraguay	Itapúa
Aspidoptera falcata Wenzel, 1976	Sturnira lilium	Ecuador	Sierra
Aspidoptera falcata Wenzel, 1976	Sturnira lilium	Ecuador	Sierra
Aspidoptera falcata Wenzel, 1976	Sturnira lilium	Ecuador	Sierra
Aspidoptera falcata Wenzel, 1976	Sturnira lilium	Ecuador	Sierra
Aspidoptera falcata Wenzel, 1976	Sturnira lilium	Ecuador	Sierra
Aspidoptera falcata Wenzel, 1976	Noctilio leporinus	Honduras	Olancho
Aspidoptera falcata Wenzel, 1976	Sturnira ludovici	Honduras	Lempira
Aspidoptera falcata Wenzel, 1976	Sturnira ludovici	Honduras	Lempira
Aspidoptera falcata Wenzel, 1976	Sturnira lilium	Paraguay	San Pedro

Search: Vertebrate Ectoparasites

[New Search](#)**Aspidoptera falcata Wenzel, 1976**

Higher taxonomy	Phylum Arthropoda	Class Insecta	Order Diptera	Family Streblidae	Subfamily Trichobiinae
Host info	Host Sturnira lilium		Host family Phyllostomidae		
Semaphoront(s)	adult male adult female				
Wet Count	5 4				
Region	Neotropical				
Geography	Continent South America	Country Venezuela	Island Group	Island	
Country geography	Province/State/Territory Distrito Federal		District/County/Shire		
Precise location	Los Venados, 4km NNW Caracas				
Lot #	SVP 00226				
Site #	BF-590				
Elevation (m)	1559 to				
Habitat	lower montane humid forest				
Collector(s)	N. E. Peterson, et al.				
Collected date(s)	25 Jul 1965 to 25 Jul 1965				
Multimedia					

[New Search](#)

Quick Search: [Ectoparasites with Images](#) | [Arthropod Collections](#) | [Lepidoptera](#) | [Bulk Samples](#) | [Coleoptera](#)
[Vertebrate Ectoparasites](#) | [Louise Taxonomy](#) | [Arachnida and Myriapoda](#)

ONLINE VERTEBRATE ECTOPARASITE DATABASE

Anastrebla caudiferae Wenzel, 1976



Project

These data were compiled and imported by Carl W. Dick, Joanna McCaffrey, Bruce D. Patterson, Mary Beth Prondzinski and Stephanie Ware pursuant to projects generously supported by the National Science Foundation (DBI 0545051 and DEB 0640331).

Classification

Animalia : Arthropoda : Insecta : Diptera : Streblidae : :

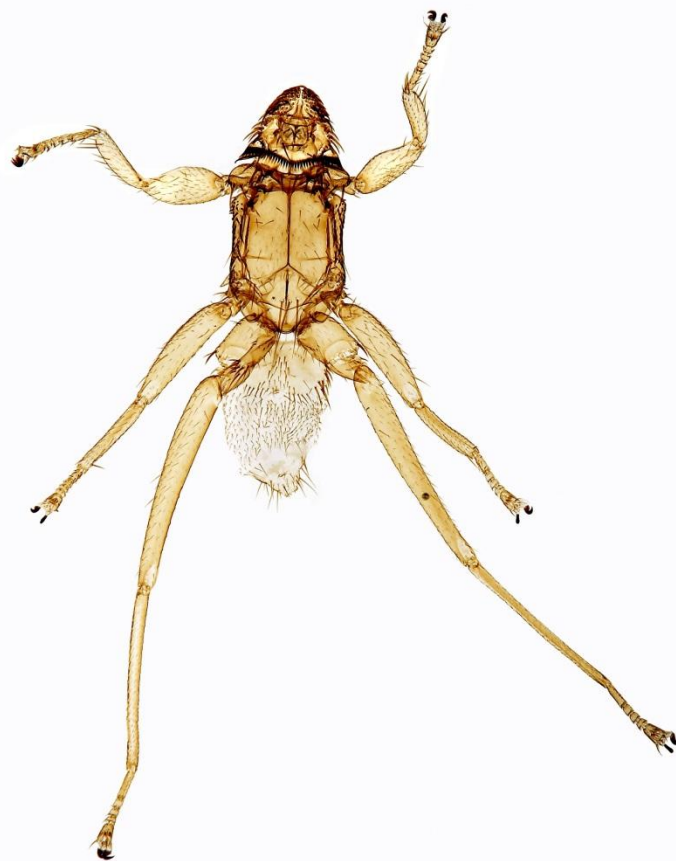
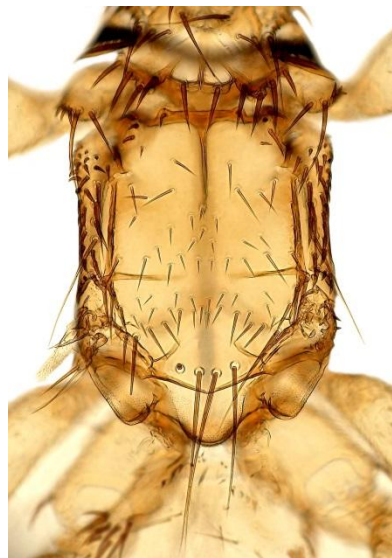
Remarks

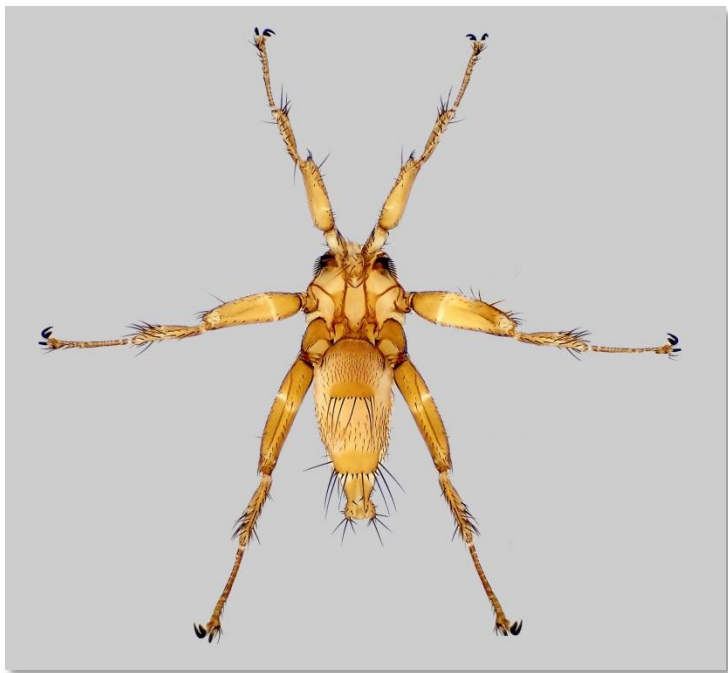
Wenzel, Rupert J. (1976) The Streblid Batflies of Venezuela. Brigham Young Science Bulletin, Provo: 166.

Distribution

New World. The Field Museum collection contains specimens from the following countries: Bolivia, Colombia, Ecuador, Peru, Venezuela.

ONLINE DIPTERA TAXONOMY DATABASE





Nycteribiid: *Nycteribia stylidiopsis*



Streblid: *Nycterophilia n.sp.*



Streblid: *Megistopoda aranea*

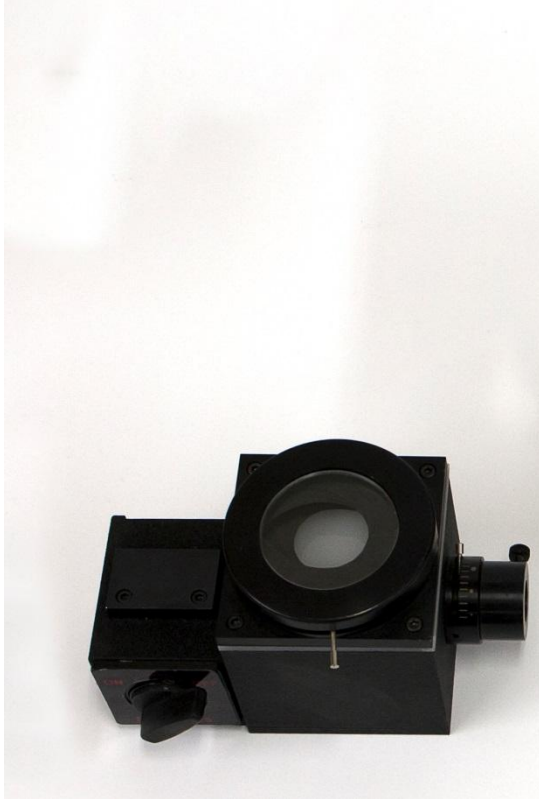


Streblid: *Metelasmus pseudopterus*

SLIDE CLEANING

- 95% alcohol
- Sparkle
- Kim wipes
- Cotton swabs
- Rocket air blower





Small Stage

- Compact
- Two apertures for light control
- Requires hand positioning of specimen



Visionary Digital SolMate

- Much larger stage
- More light control options
- X-Y stage with fine control knobs
- Bright-field and dark-field illumination



- K2 aperture at 6
- Power pack set to full power
- Aperture on stage wide open
- Aperture to control light brightness down by half
- Cone-shaped diffuser over slide
- Stacked with Combine-ZP



- No diffuser
- Power box at full power
- Aperture on stage as tight as possible
- Aperture at base of stage controlling light brightness full open
- ~10 minutes post processing with Photoshop



- Fewer slices
- Cone diffuser
- Short stacks
- Recombine stacks



- Example: 12 slice series
- Combine 1-4, 5-8, 9-12
- Photoshop to bump levels and contrast of in-focus areas
- Recombine



10X ACROVID – BAT FLY GENITALIA

ALCOHOL SPECIMENS

- New tube of K-Y
- Clean small watchglass
- Microdissection probes (one with eyelash)
- 95% alcohol
- Insect pins



BUBBLES

- Fresh K-Y
- Insect pin for bubbles in K-Y
- Eyelash microdissection probe for bubbles on specimen
- Looped microdissection probe for debris in alcohol





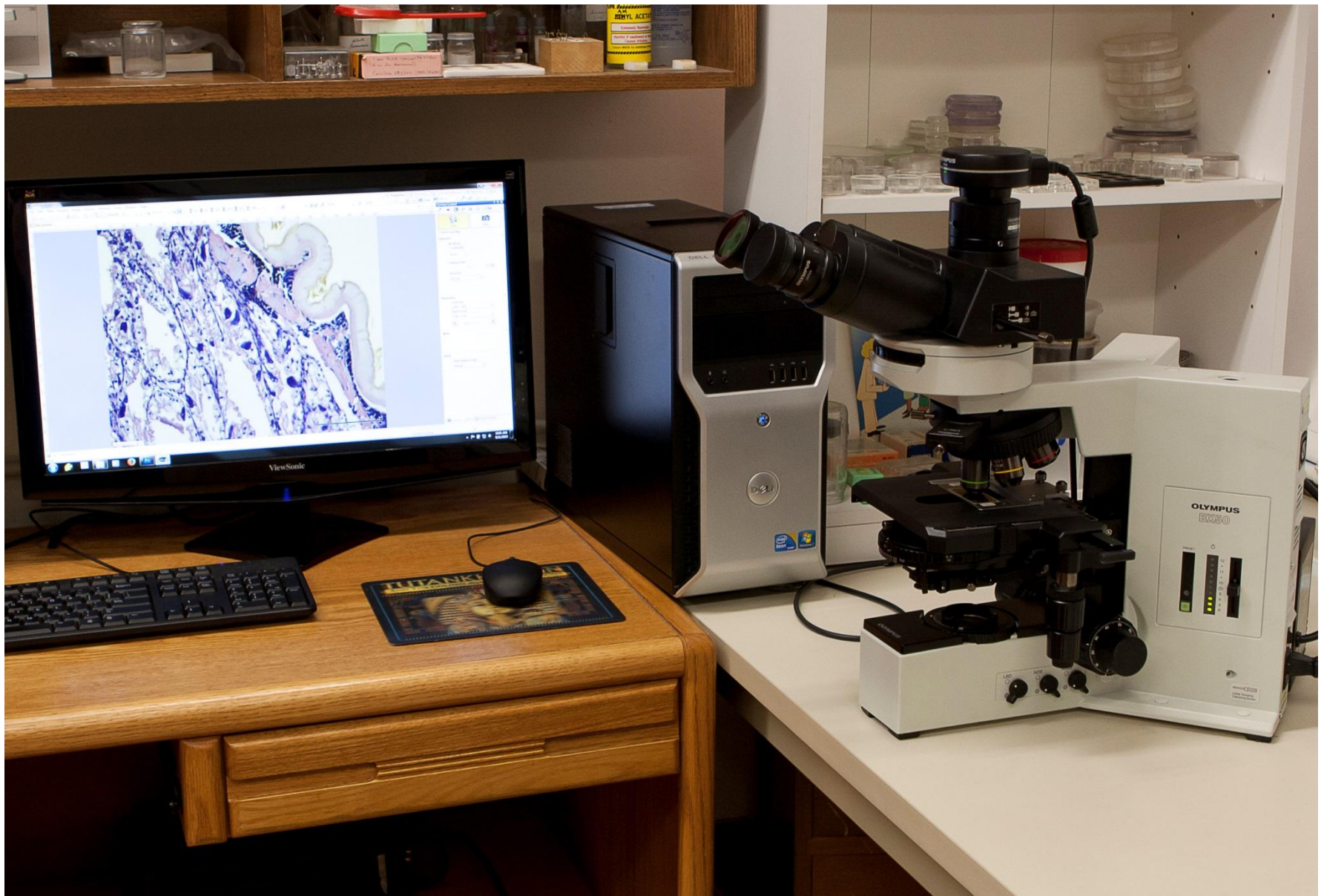
THE TITANIC – SINKING SPECIMENS



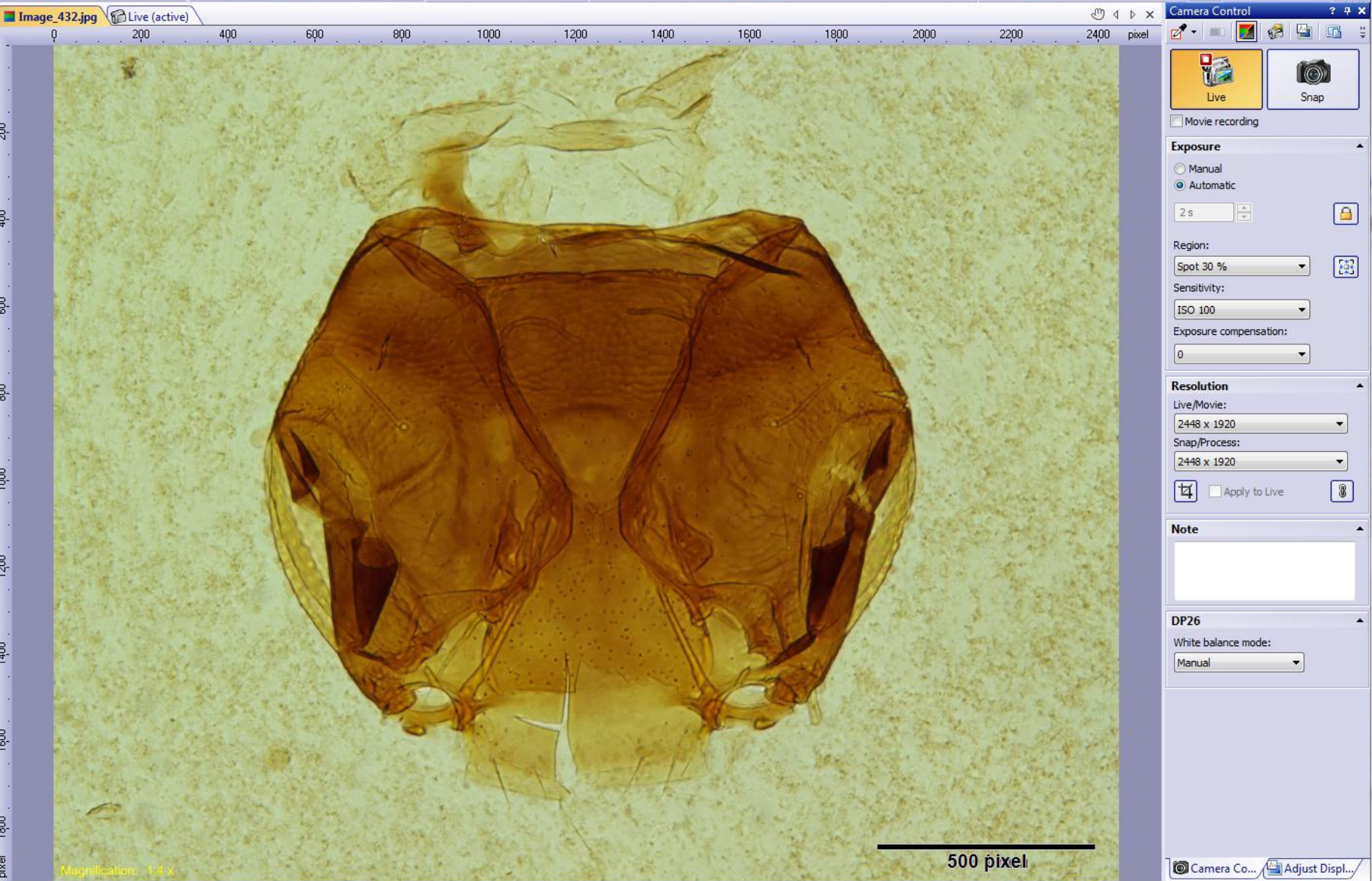
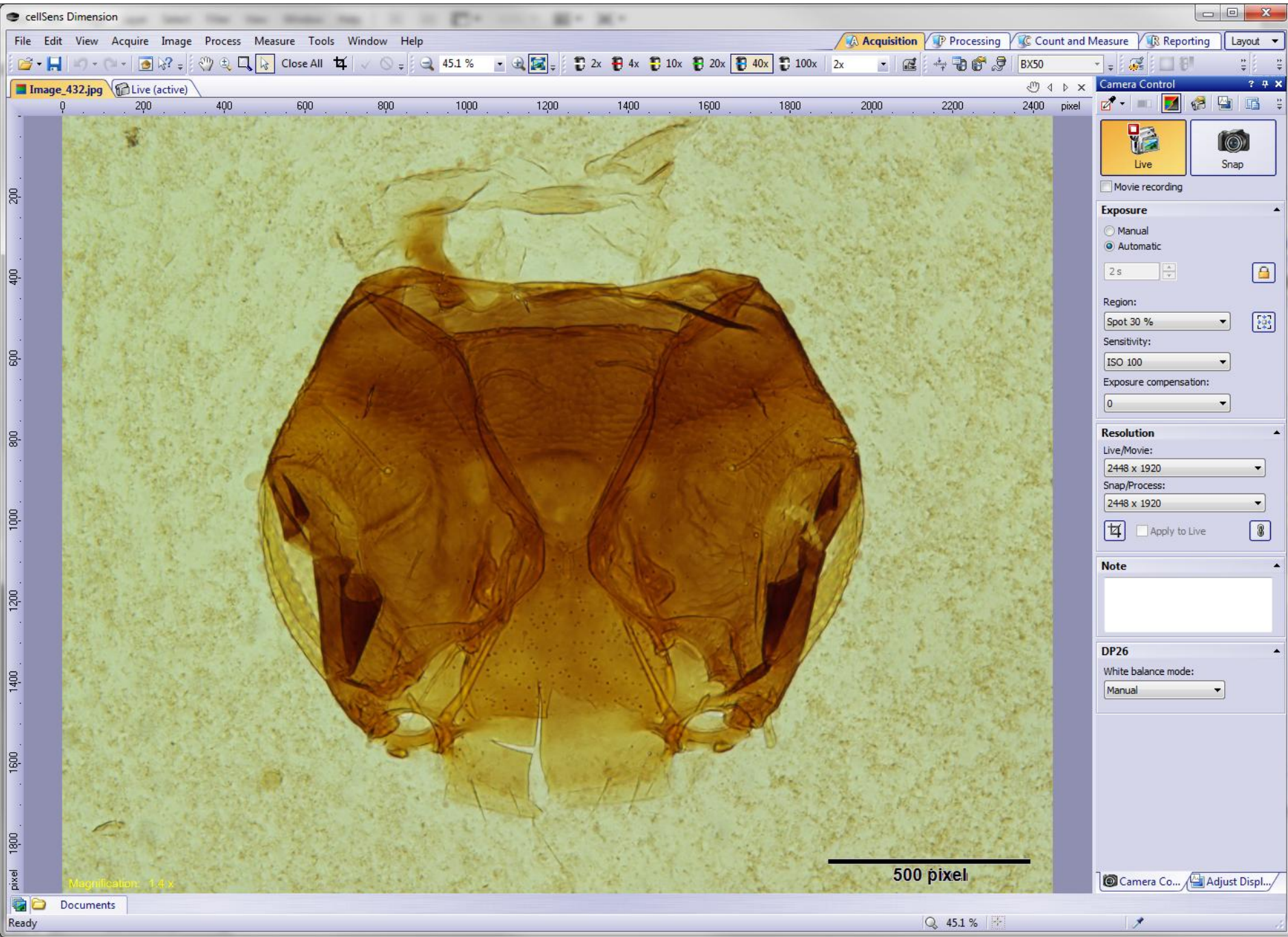
SINKING ABDOMEN AND WINGS



BON VOYAGE, CARL!



Olympus DP-26 Microscope Camera with CellSens Software



Magnification: 1.4 x

500 pixel

Camera Control

Live Snap

Movie recording

Exposure

Manual
 Automatic

2 s

Region:
Spot 30 %

Sensitivity:
ISO 100

Exposure compensation:
0

Resolution

Live/Movie:
2448 x 1920

Snap/Process:
2448 x 1920

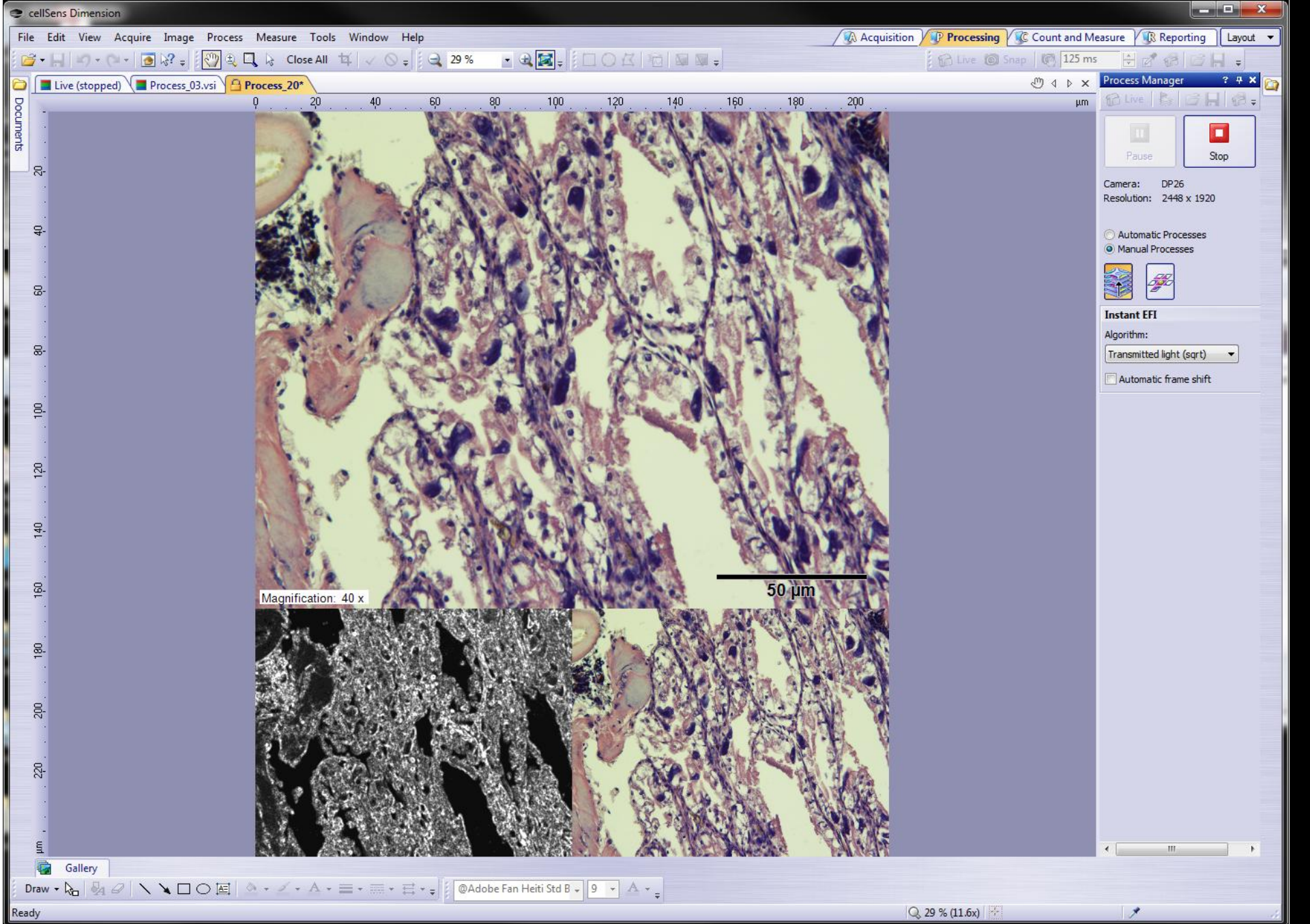
Apply to Live

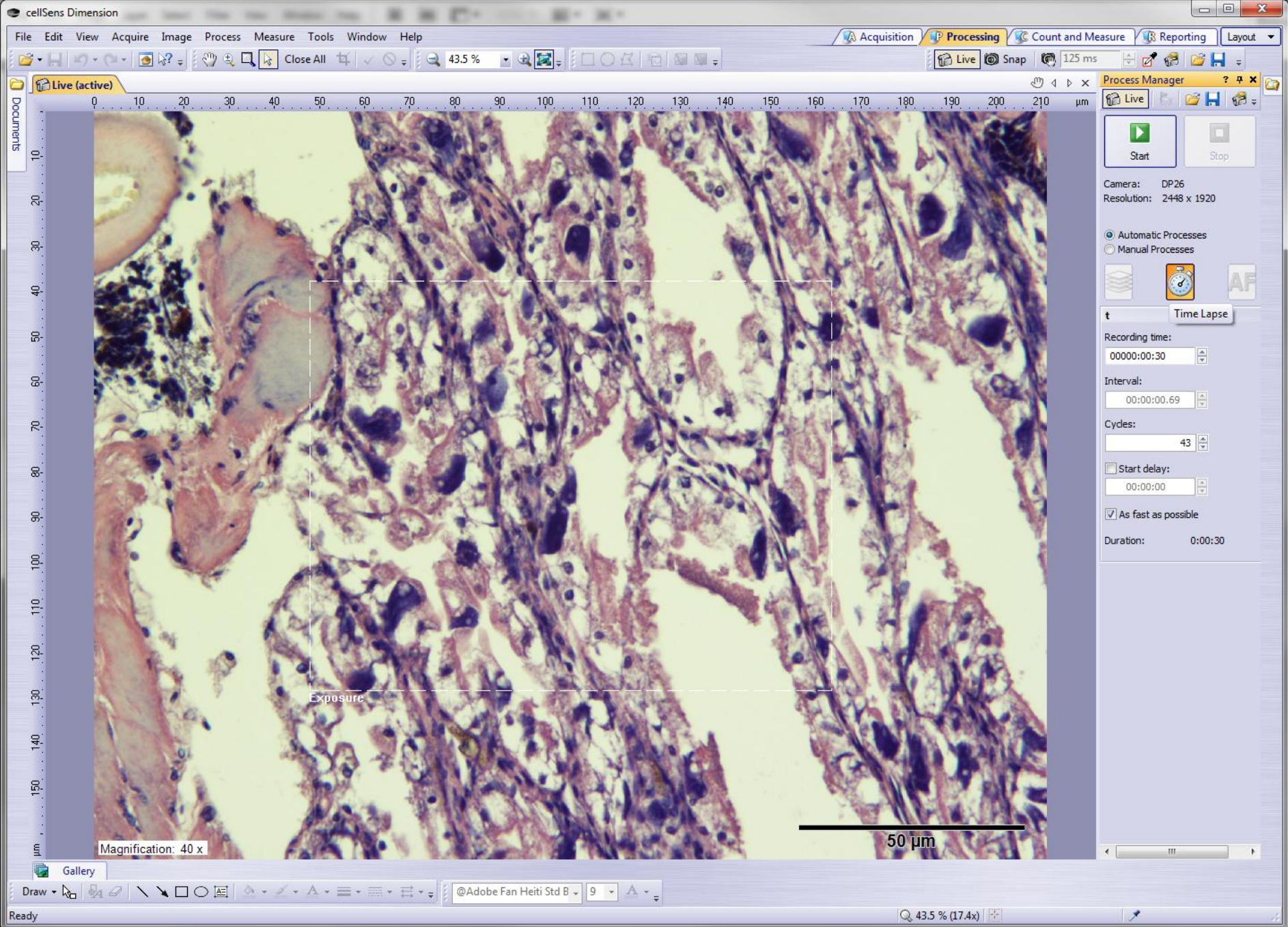
Note

DP26

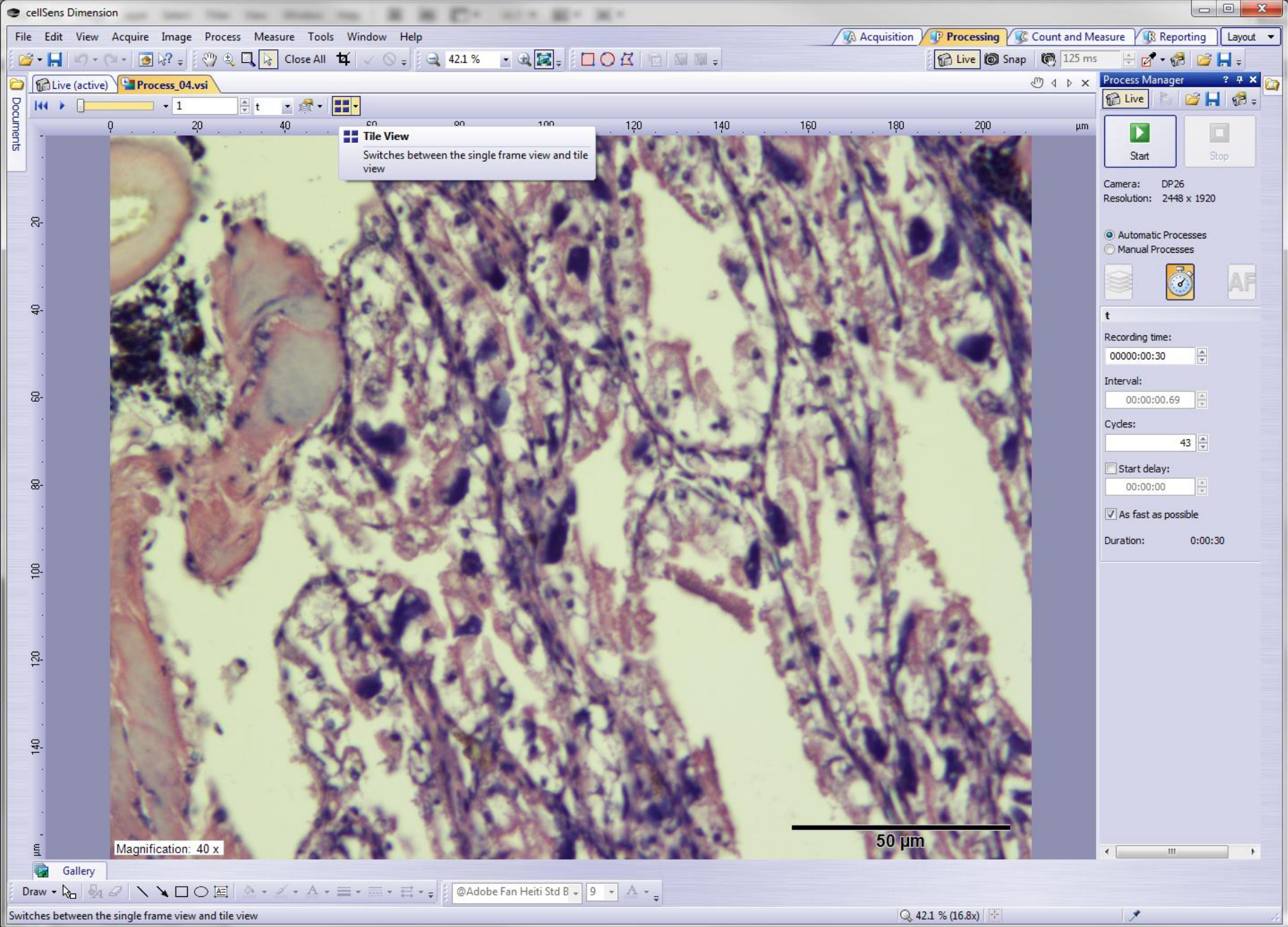
White balance mode:
Manual

Camera Co... Adjust Displ...

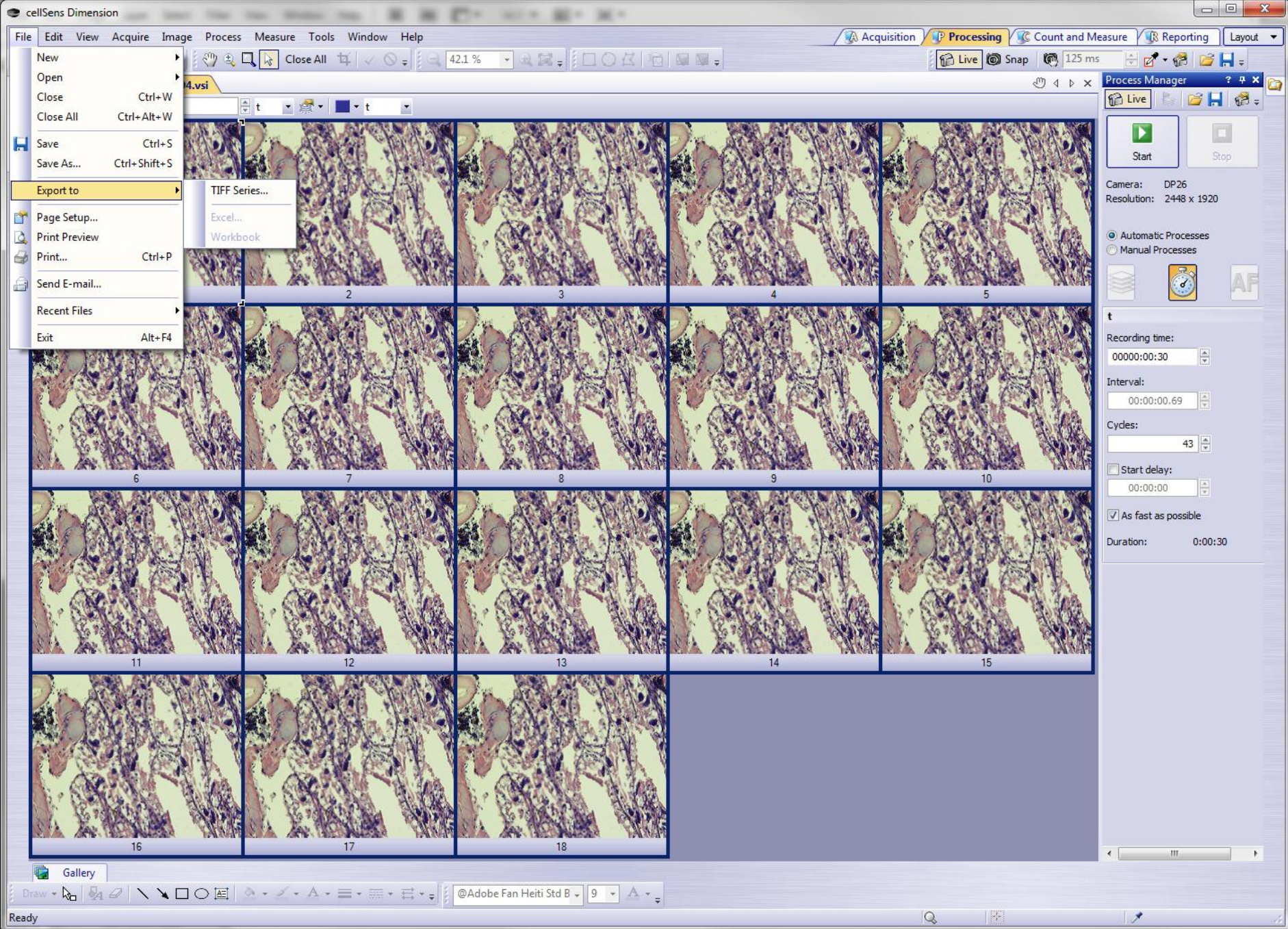




Tricking the System with time lapse



Tile View



Exporting images to TIFF series



Off-setting objective to deal with focus drift



Photo by Gracen Brilmyer, FMNH

Microptics

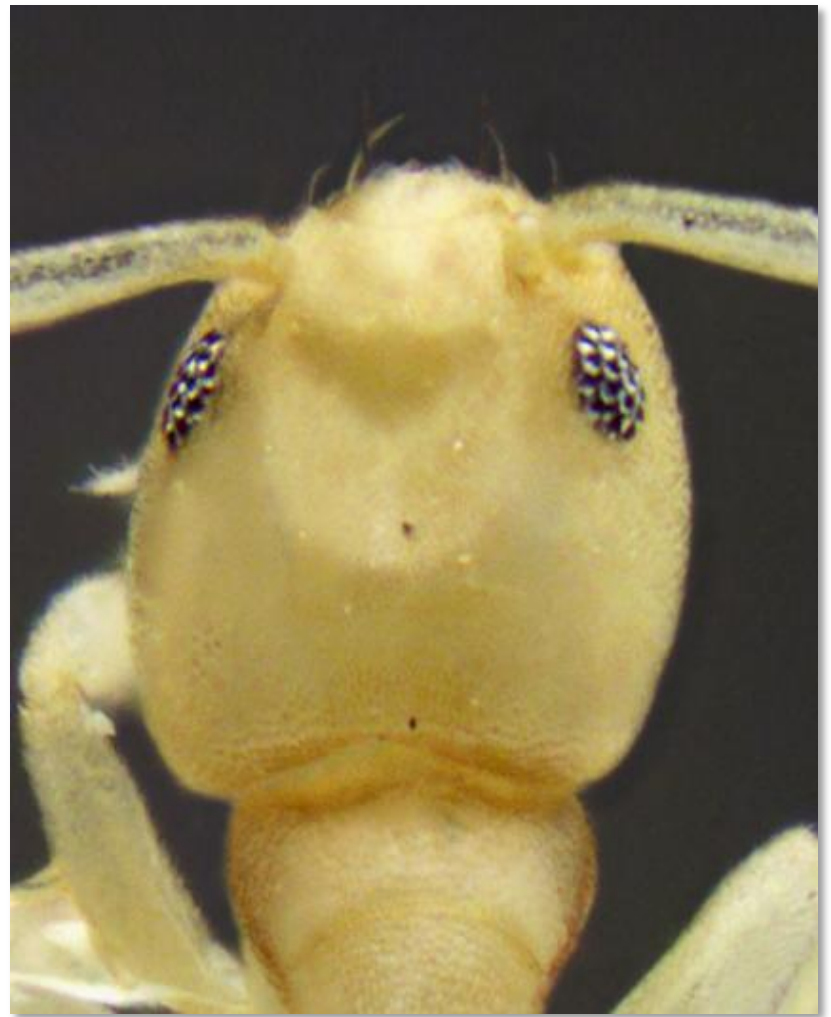


Olympus

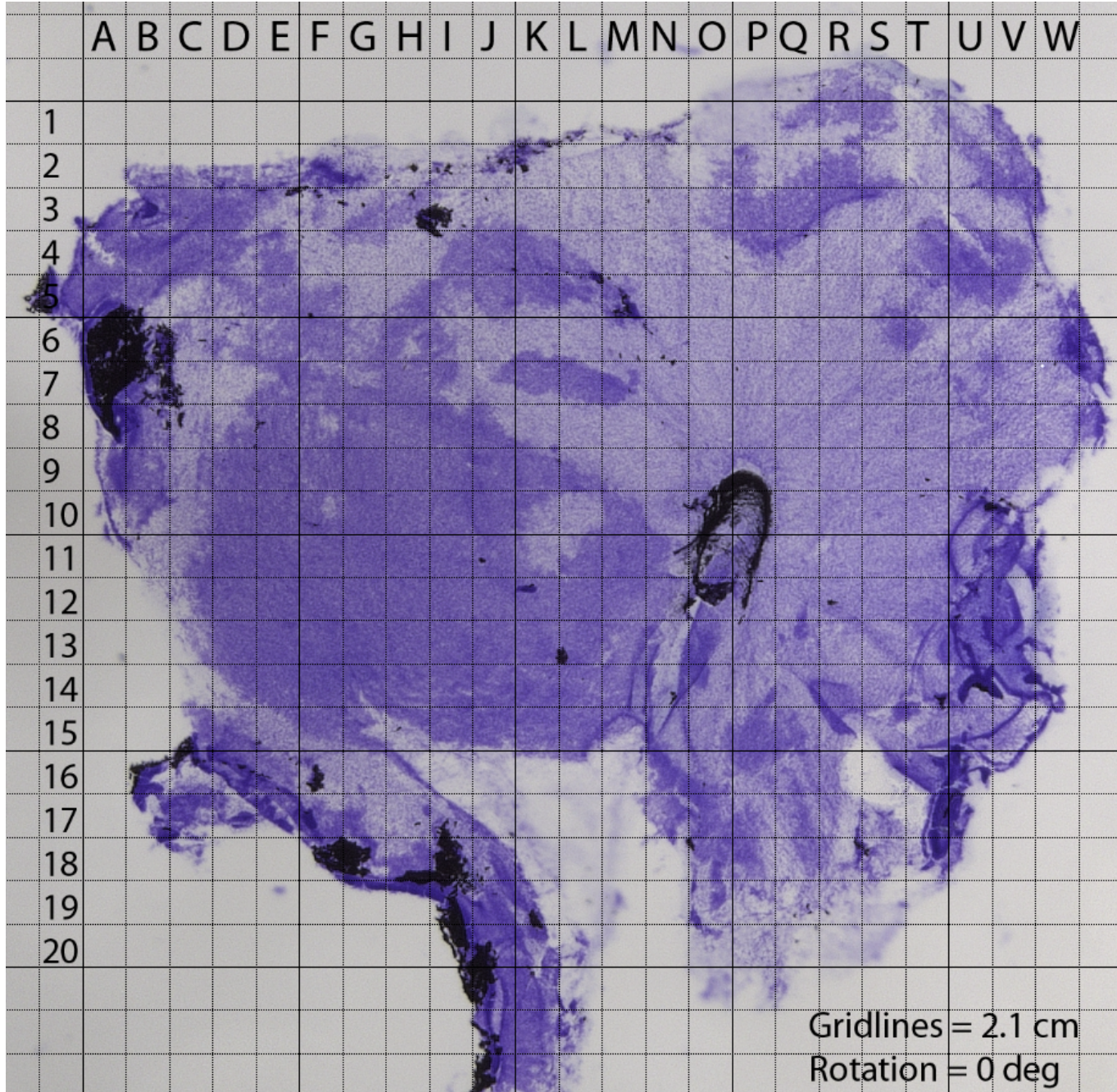


Photo by Gracen Brilmyer, FMNH

Microptics

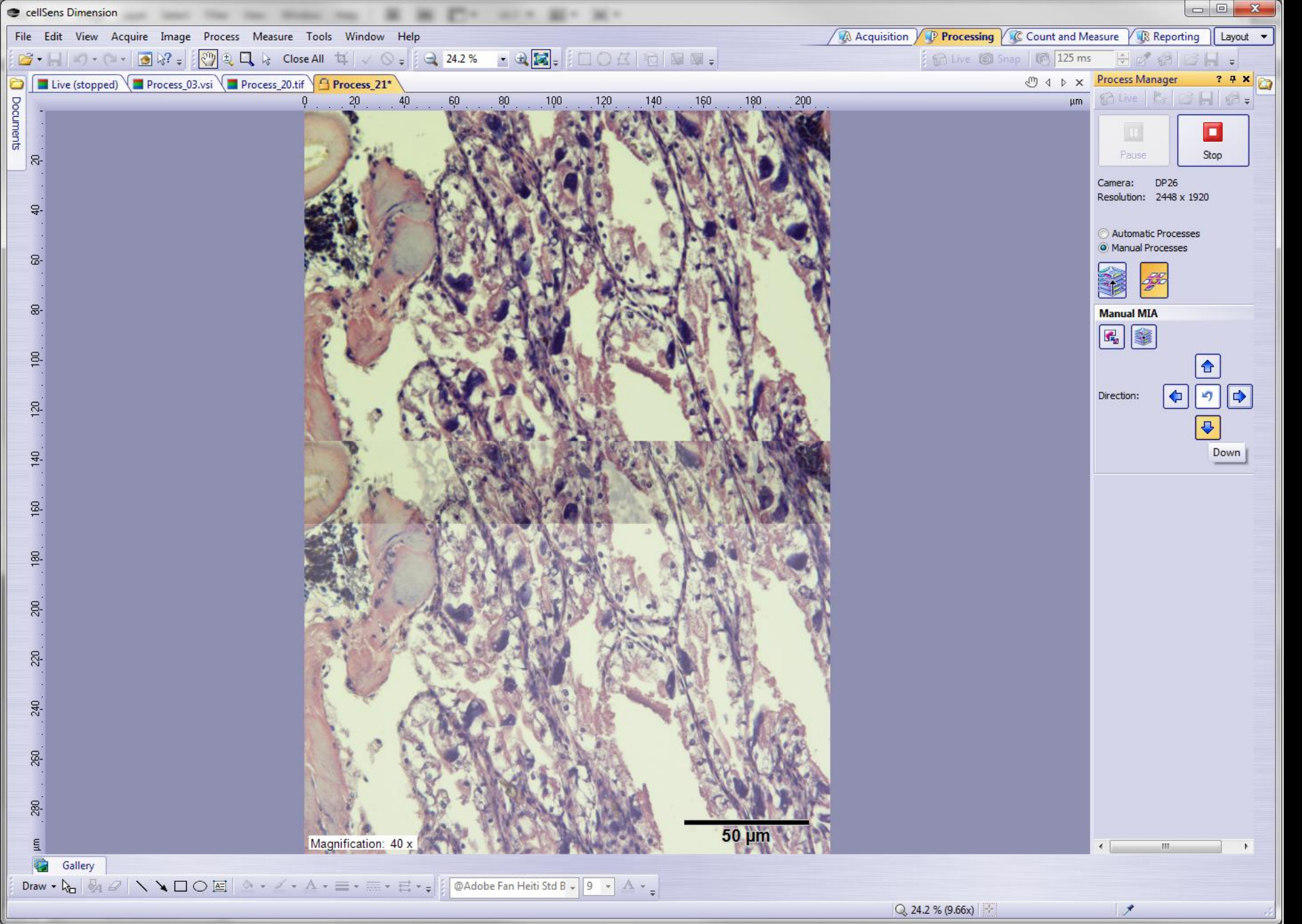


Olympus



Gridlines = 2.1 cm
Rotation = 0 deg

Photo by Gracen Brilmyer and Joanna Mandecki, FMNH



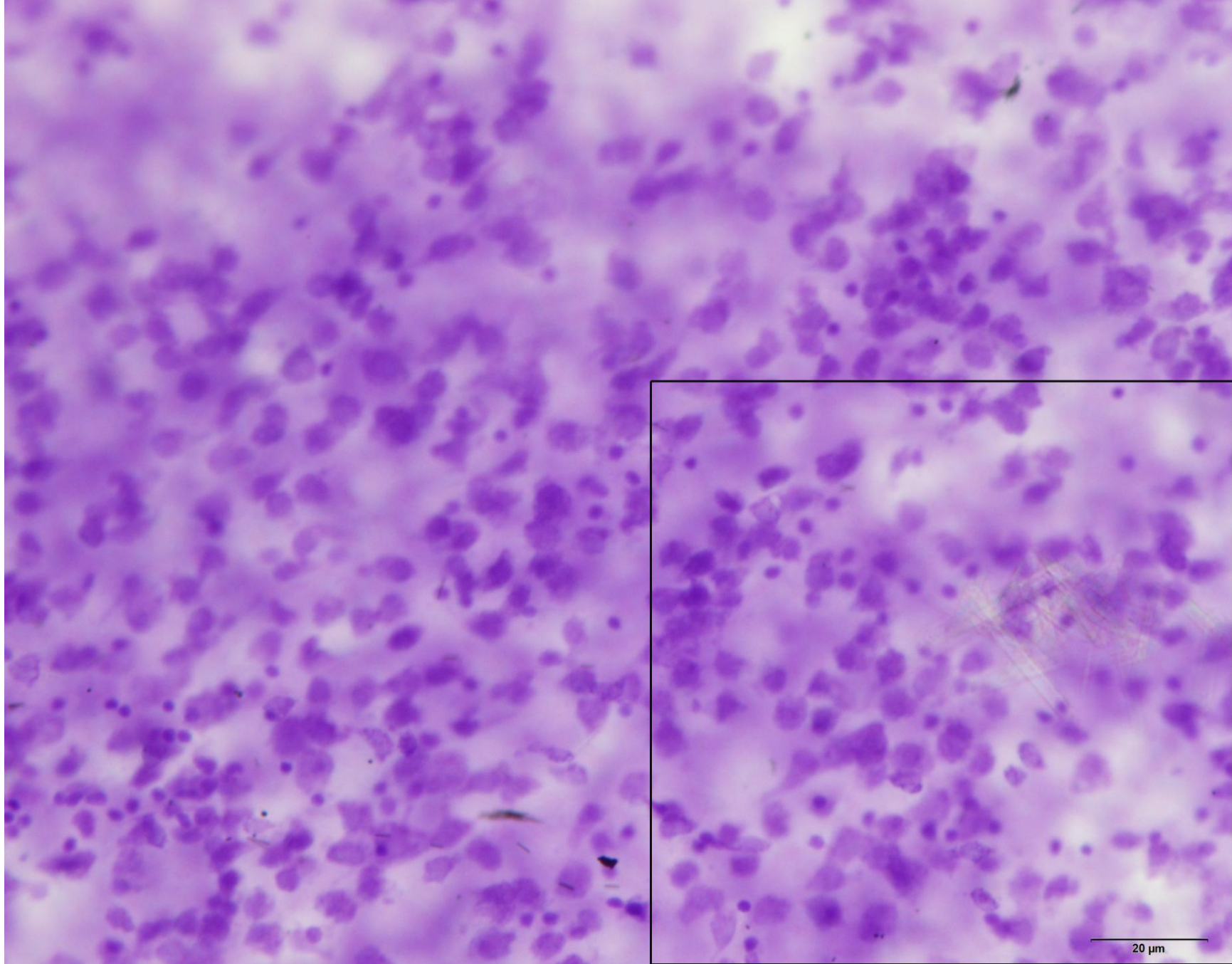


Photo by Joanna Mandecki, FMNH

100 μm

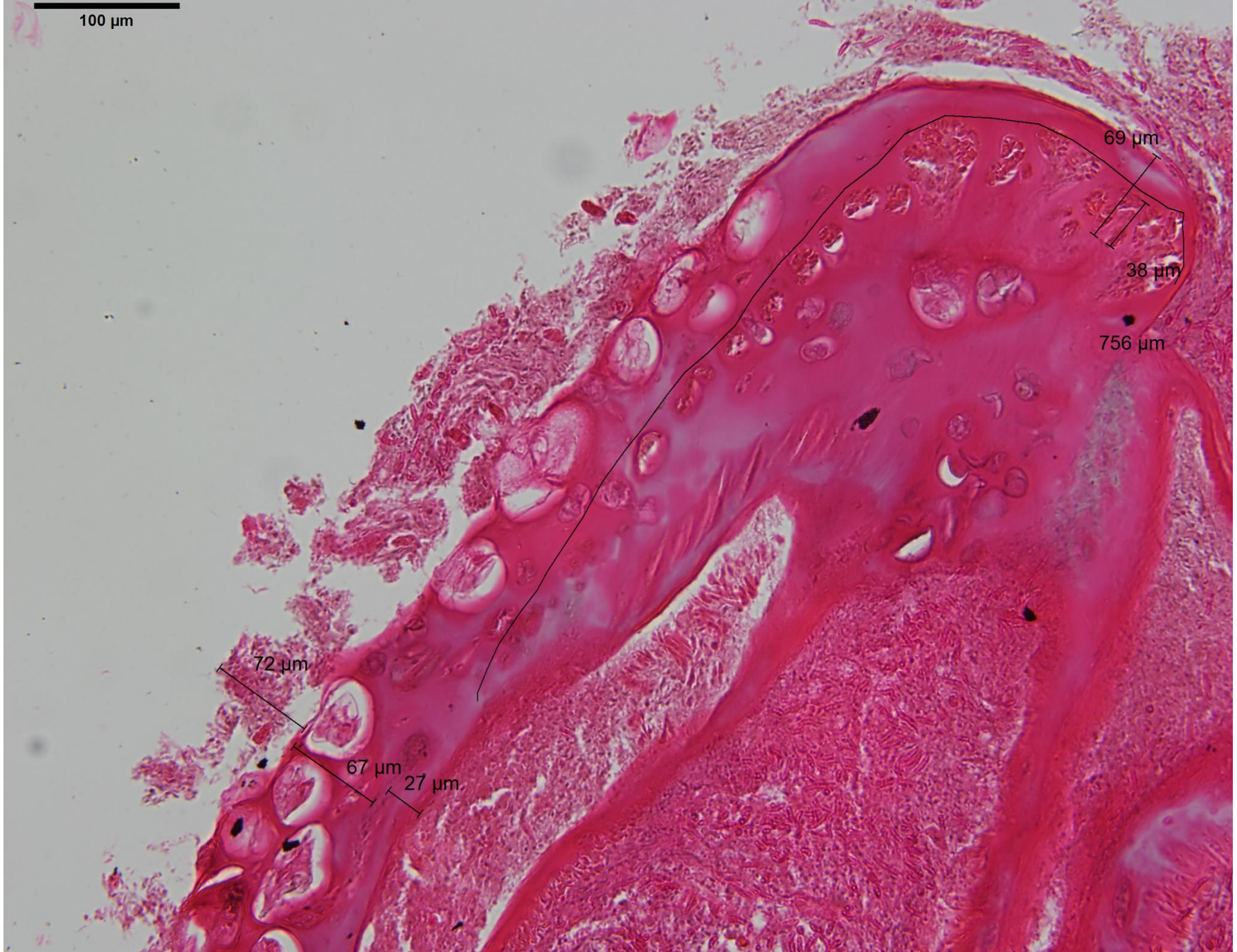


Photo by Timothy Swain, FMNH

cellSens Dimension

File Edit View Acquire Image Process Measure Tools Window Help

Acquisition Processing Count and Measure Reporting Layout

Live (active) Image_498.tif Image_499.tif

0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200 210 μm

Magnification: 40 x

50 μm

Measurement and ROI

Type Name Poi Polyline Length Angle Area Perimeter

Measures a polyline

Count	-	0	0	0	0	0	0
Minimum	-	-	-	-	-	-	-
Maximum	-	-	-	-	-	-	-
Mean	-	-	-	-	-	-	-

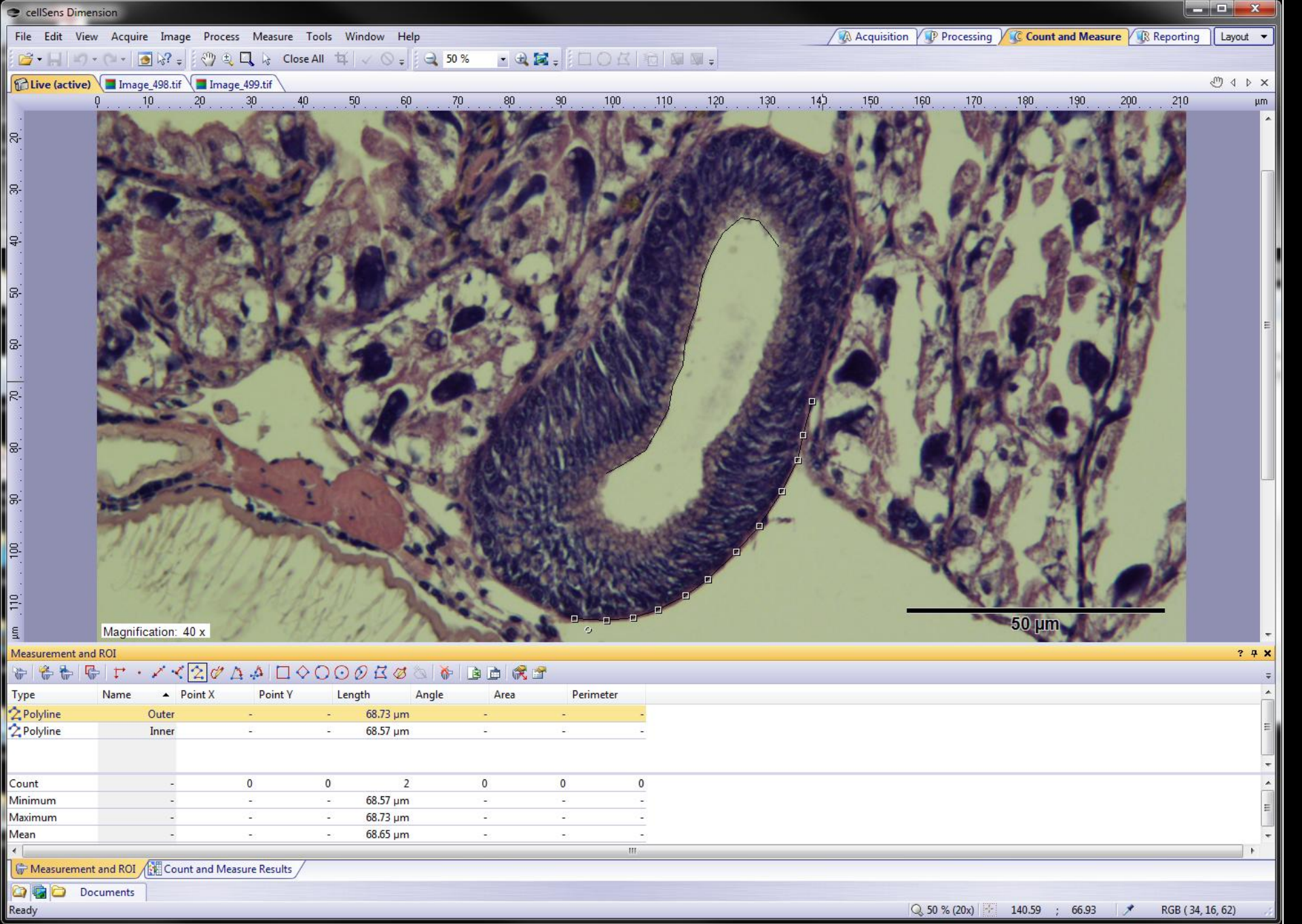
Measurement and ROI Count and Measure Results

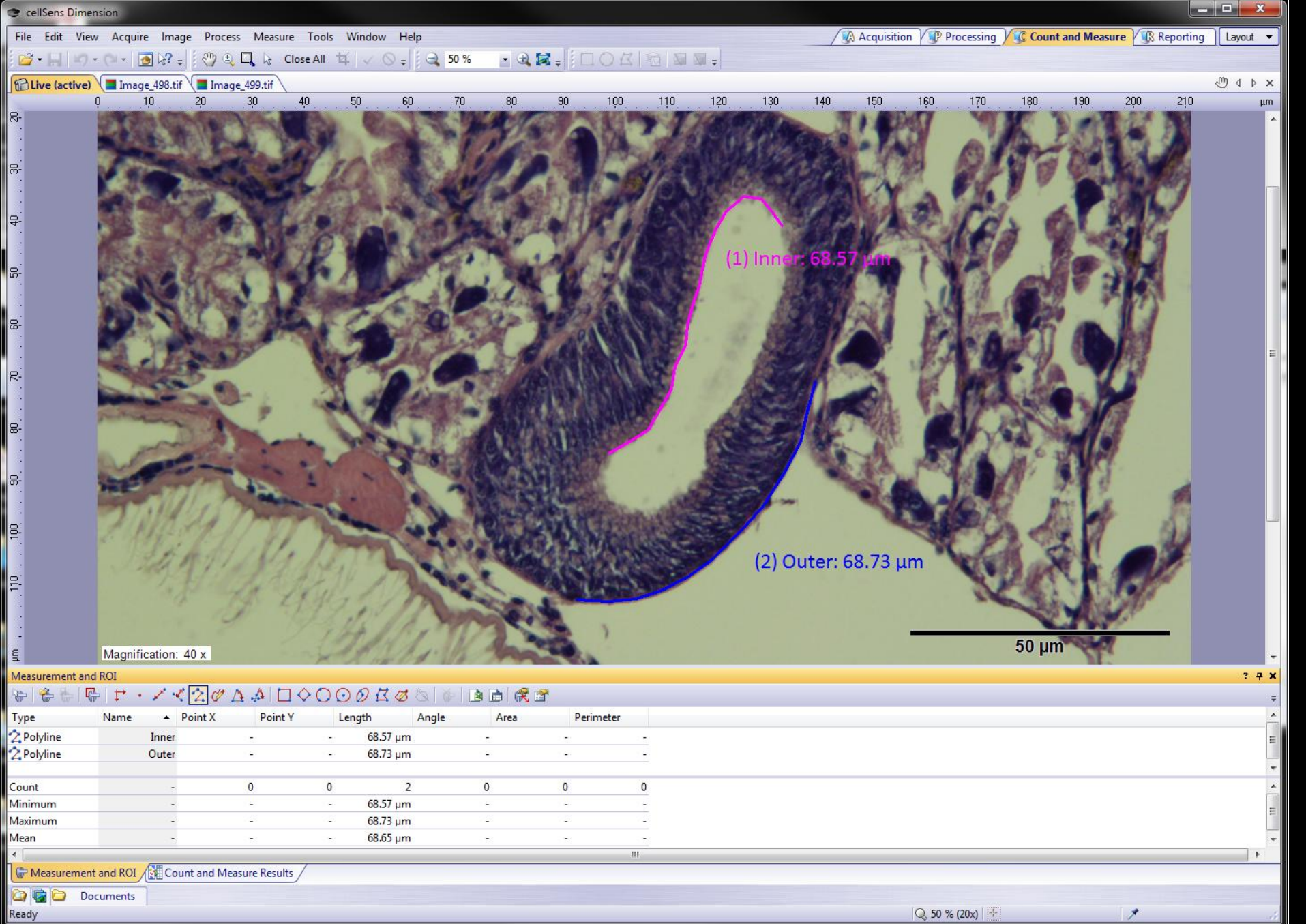
Documents

Measures a polyline

50 % (20x)

Measurement with CellSens software







2.0 mm

Photo by Robin Delapena, FMNH

MILLIPEDES WITH PETRA SIERWALD

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