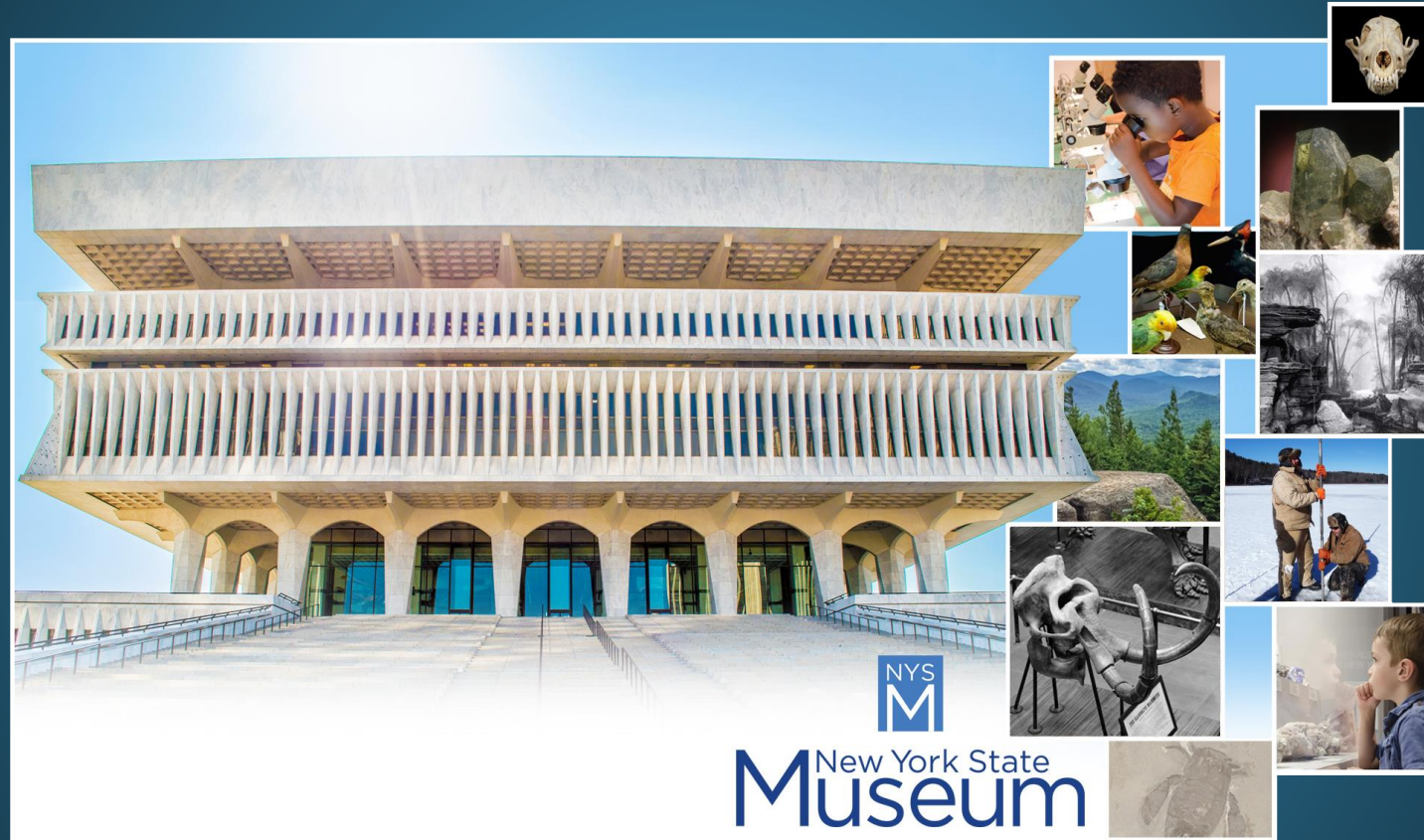


# WHY WE COLLECT:



## NEW YORK'S NATURAL HISTORY

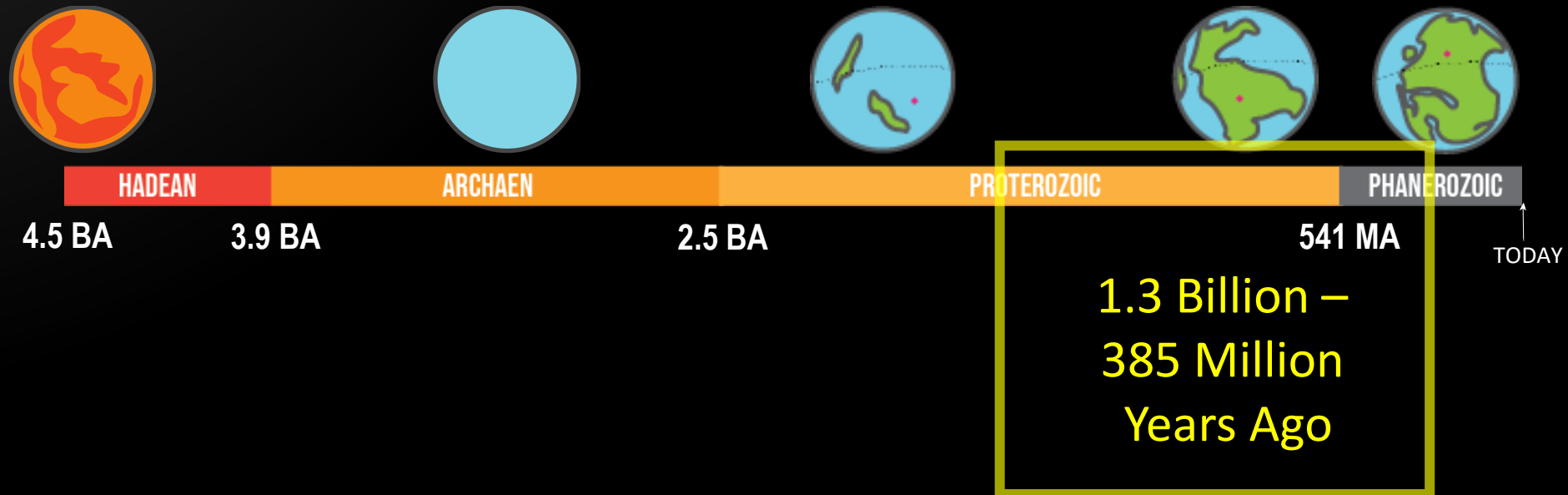
from 1.3 Billion Years Ago to Today



# PALEONTOLOGY

Dr. Lisa Amati  
Curator of Paleontology  
State Paleontologist of New York

## NEW YORK'S BEGINNINGS



4.5 BA

3.9BA

2.5BA

1.3 BA

541MA

TODAY

# NEW YORK'S OLDEST RECORD



POPPL  
HILL GNEISS  
CORE  
NYSM  
COLLECTION

POPPL HILL GNEISS  
ADIRONDACKS

4.5 BA

3.9BA

2.5BA



1 BA

541MA

TODAY



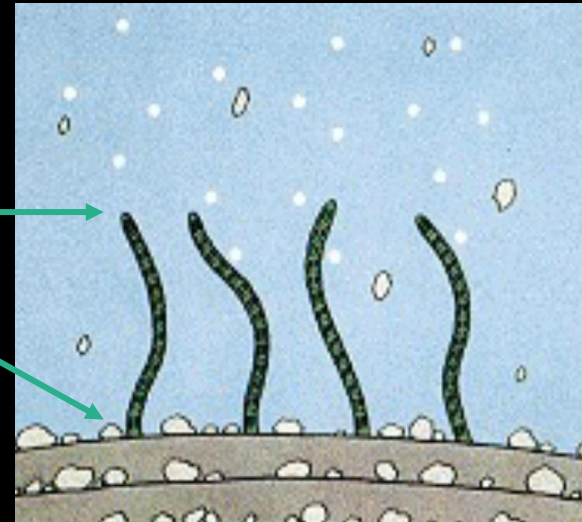
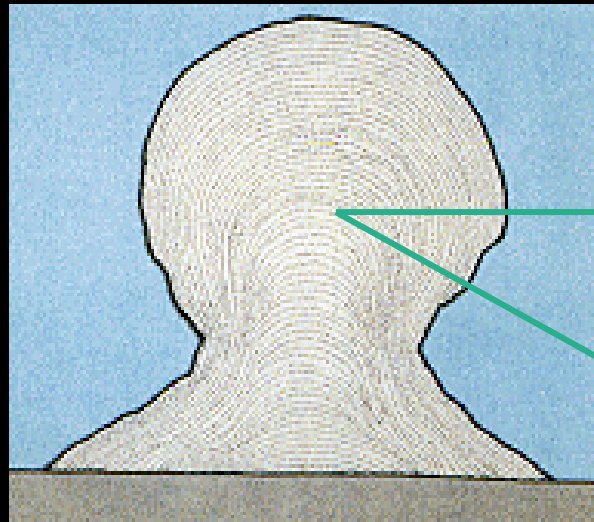
# STROMATOLITES



BALMAT



LESTER PARK



4.5 BA

3.9BA

2.5BA

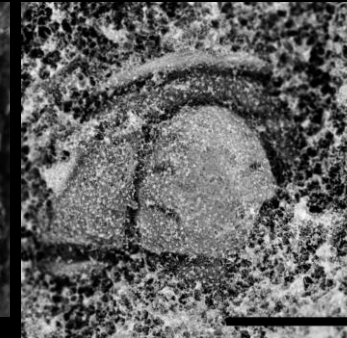
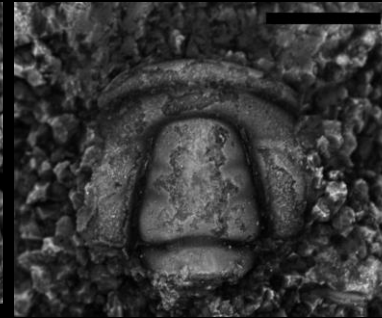
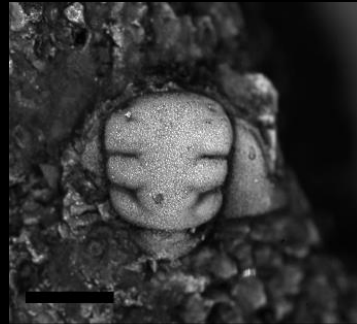
550 MA

541MA

TODAY



# CAMBRIAN TRILOBITES



*Talbotina*  
new species

*Pemphigaspis*  
new species

*Coosina*  
new species

New genus  
new species

*Lonchocephalus*  
*chippewaensis*

4.5 BA

3.9BA

2.5BA

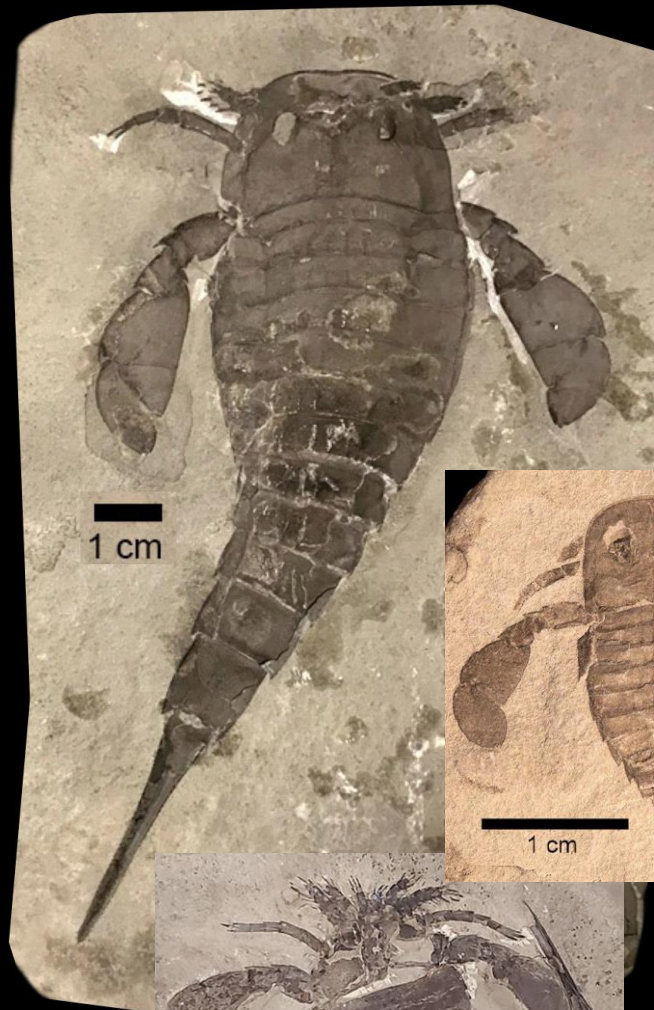
541M

TODAY

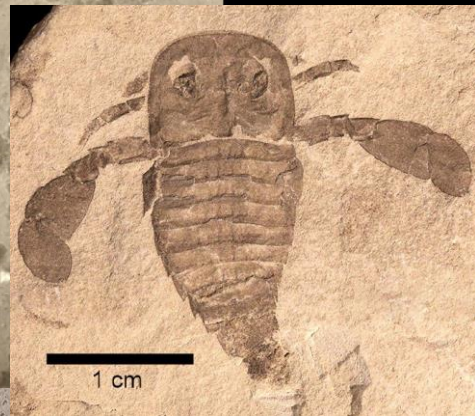
420 MA



# EURYPTERIDS



1 cm



1 cm



8937 1 cm

*Eurypterus remipes*



*Eusarcana scorpionis*

4.5 BA

3.9BA

2.5BA

541MA

TODAY

380 MA



# THE GILBOA FOREST



GILBOA TREE STUMP



SCIENTIFIC ILLUSTRATION OF THE GILBOA FOREST  
Cover of Nature, March 1, 2012



GILBOA TREE CROWN



# QUATERNARY GEOLOGY

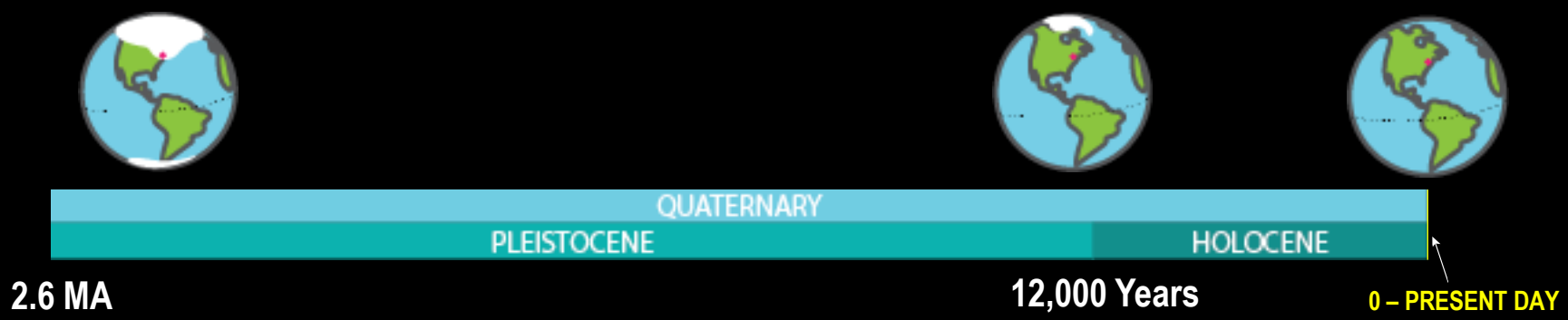
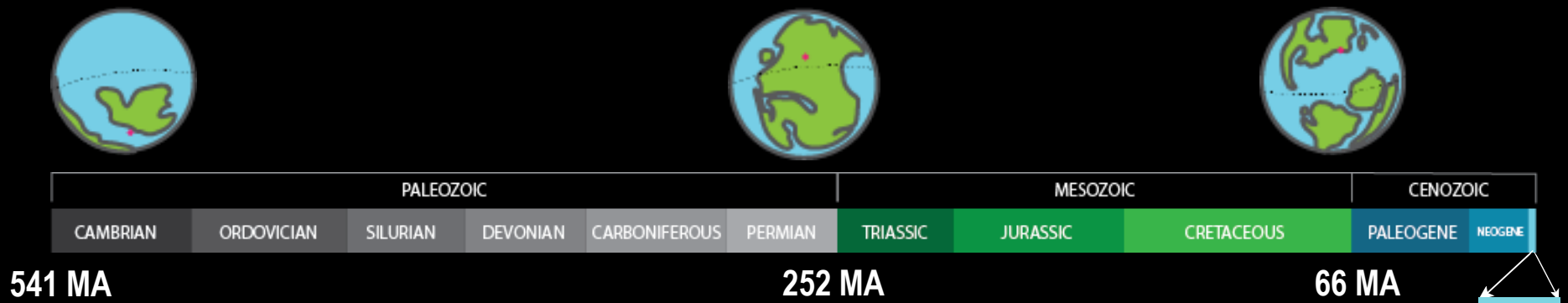
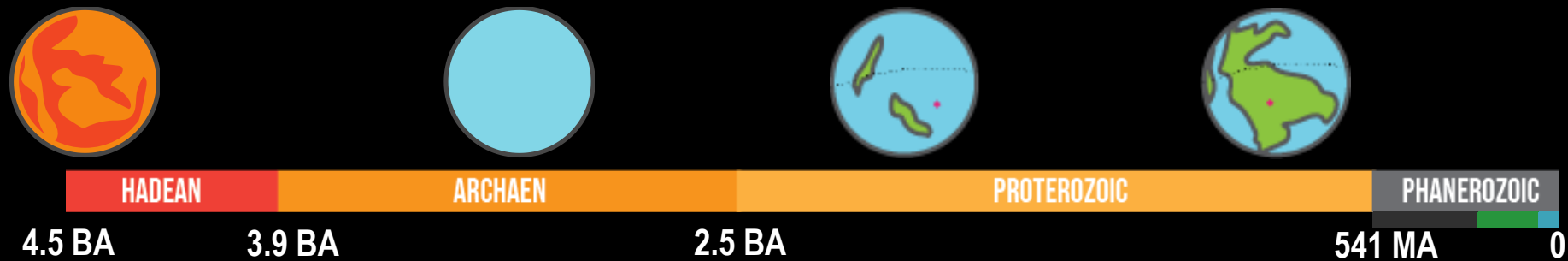
Dr. Andrew Kozlowski

Curator of Quaternary Landscape Materials

# NEW YORK'S ICE AGES

2.6 million – 11,700 Years Ago





2.6 MA

12,000 YA

TODAY



LAURENTIDE ICE SHEET



2.6 MA



12,000 YA

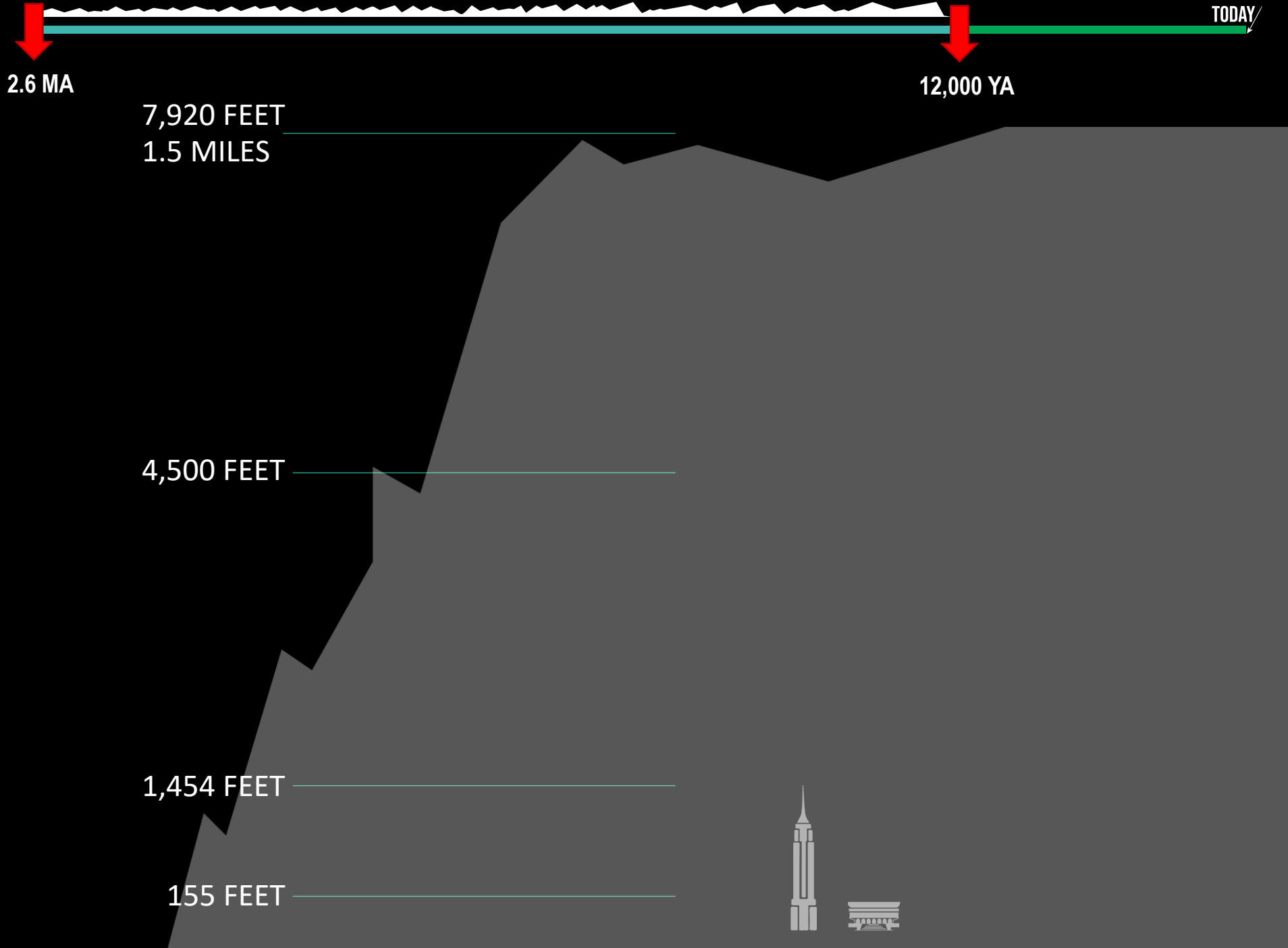
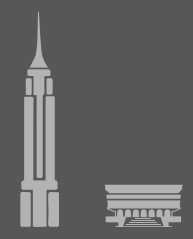
TODAY

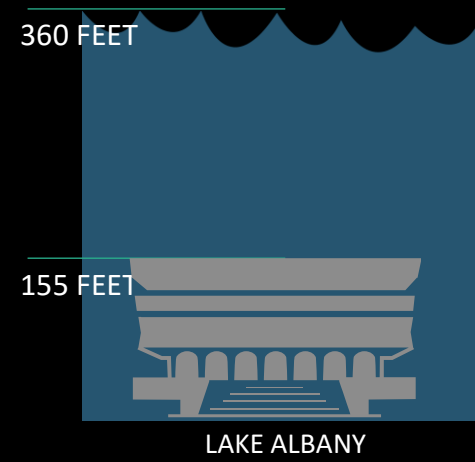
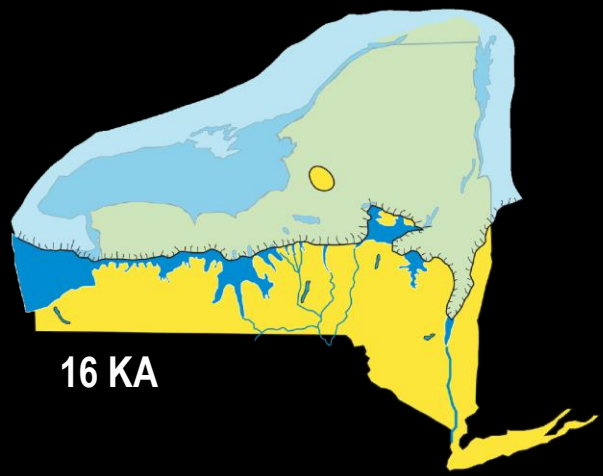
7,920 FEET  
1.5 MILES

4,500 FEET

1,454 FEET

155 FEET



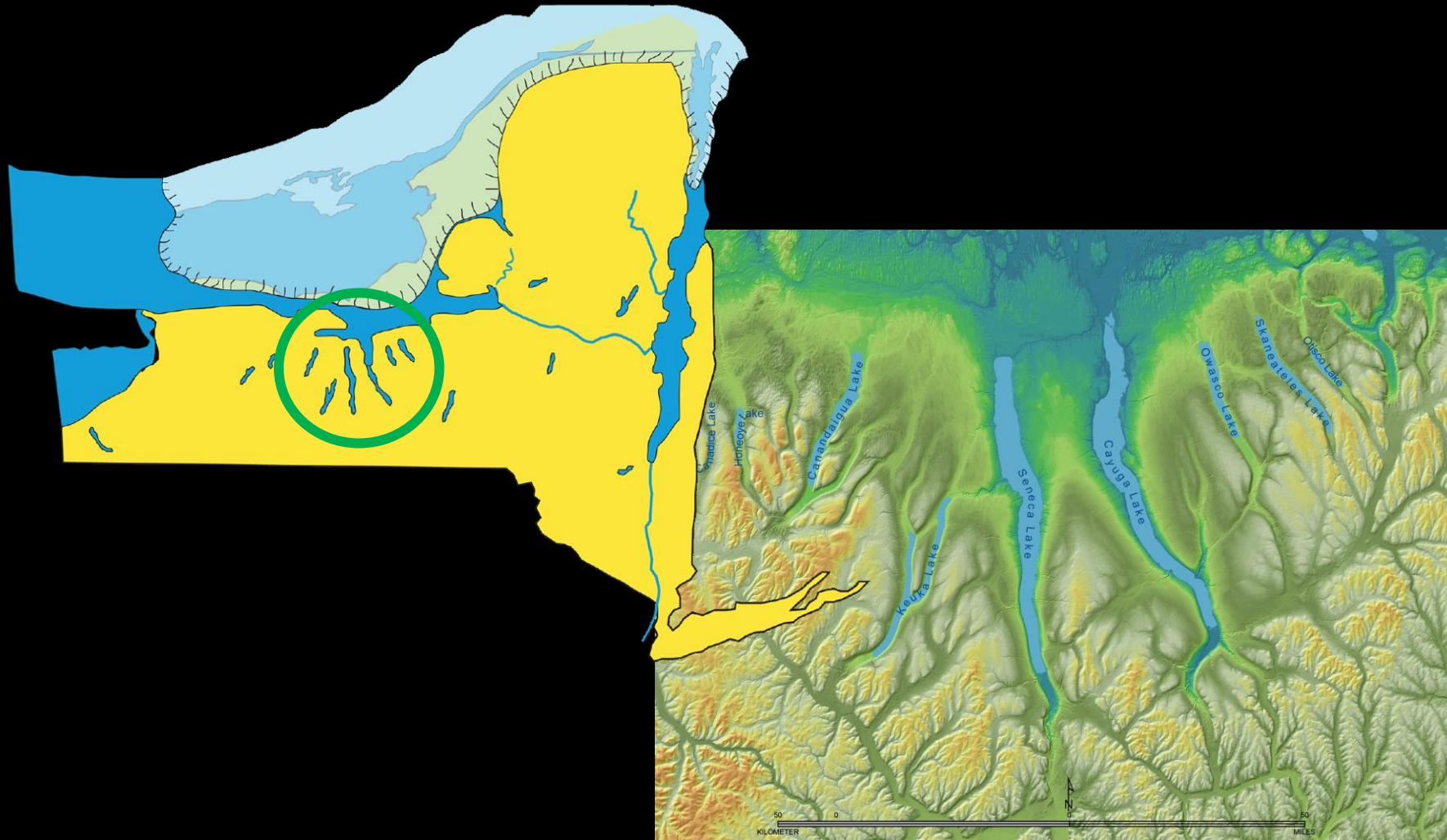


2.6 MA

TODAY

12,000 YA

13 KA



GLACIAL RETREAT CARVED AND CREATED  
TODAY'S NEW YORK STATE LANDSCAPE

2.6 MA

12,000 YA

40-35 KA

TODAY



**OUTCROP**  
ITHACA



**LAWSON LAKE**  
ALBANY COUNTY



**BUTTERMILK FALLS**  
ITHACA



**SEDIMENT CORE**

2.6 MA

CORE  
ALBANY COUNTY

55 KA 40-35 KA

12,000 YA

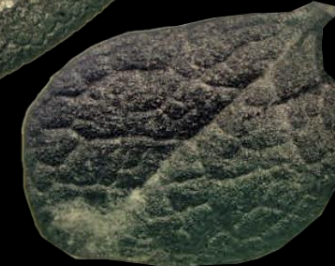
TODAY



EXTRACTED  
PLANT MATERIAL



*Dryas Integrifolia*



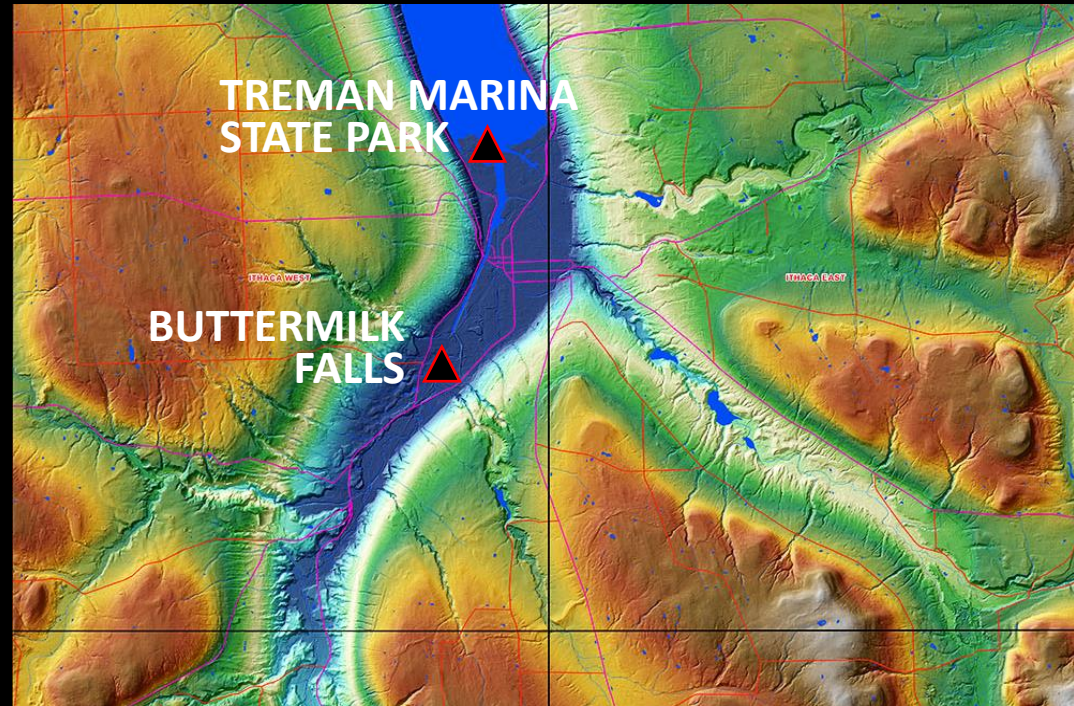
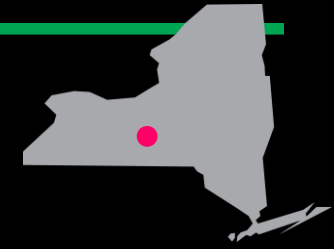
*Salix reticulata*

BLACK SPRUCE LOG  
BUTTERMILK FALLS, ITHACA



CATALOGED NYSM SPECIMENS

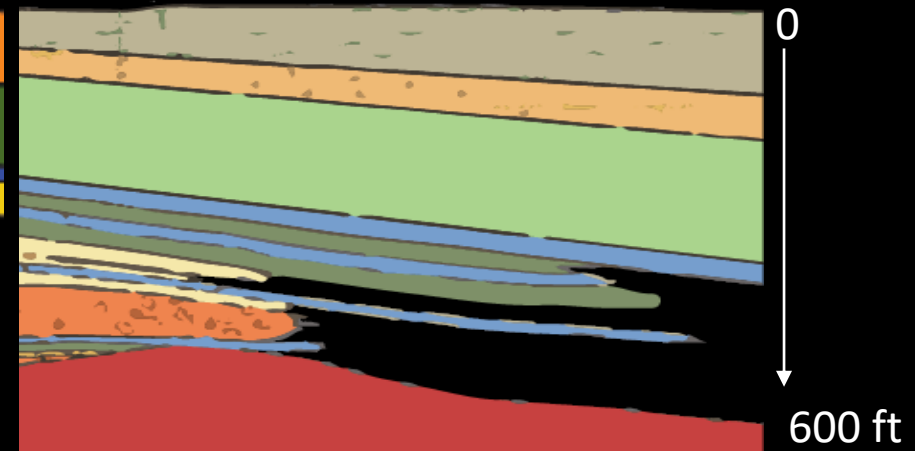
# NEW YORK STATE AQUIFERS



SUBSURFACE VIEW – 1900s



SUBSURFACE VIEW – 2019







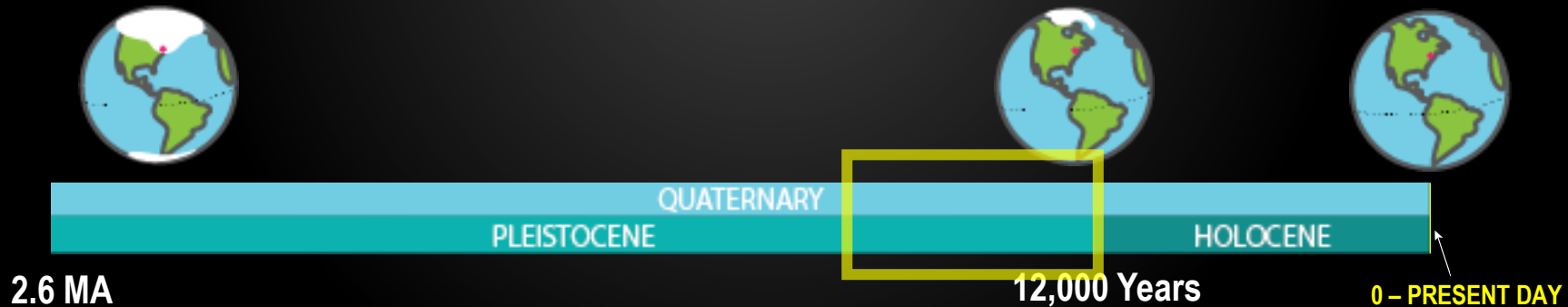
# PLEISTOCENE VERTEBRATE PALEONTOLOGY

Dr. Robert Feranec

Director of Research and Collections

Curator of Pleistocene Vertebrate Paleontology and Mammalogy

## THE END OF THE ICE AGE and the Colonization of NYS by Mammals

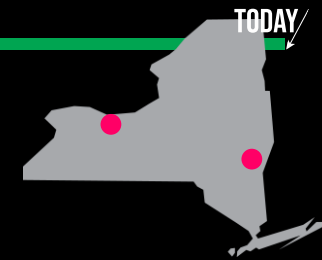


25,000-12,000 Years Ago

2.6 MA

13 KA

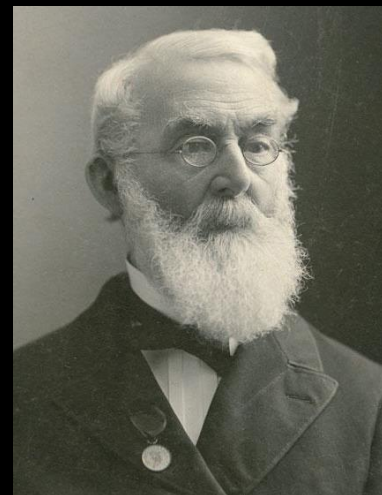
TODAY



**COTTON MATHER**  
1705 MASTODON TOOTH



**GIANT BEAVER SKULL**



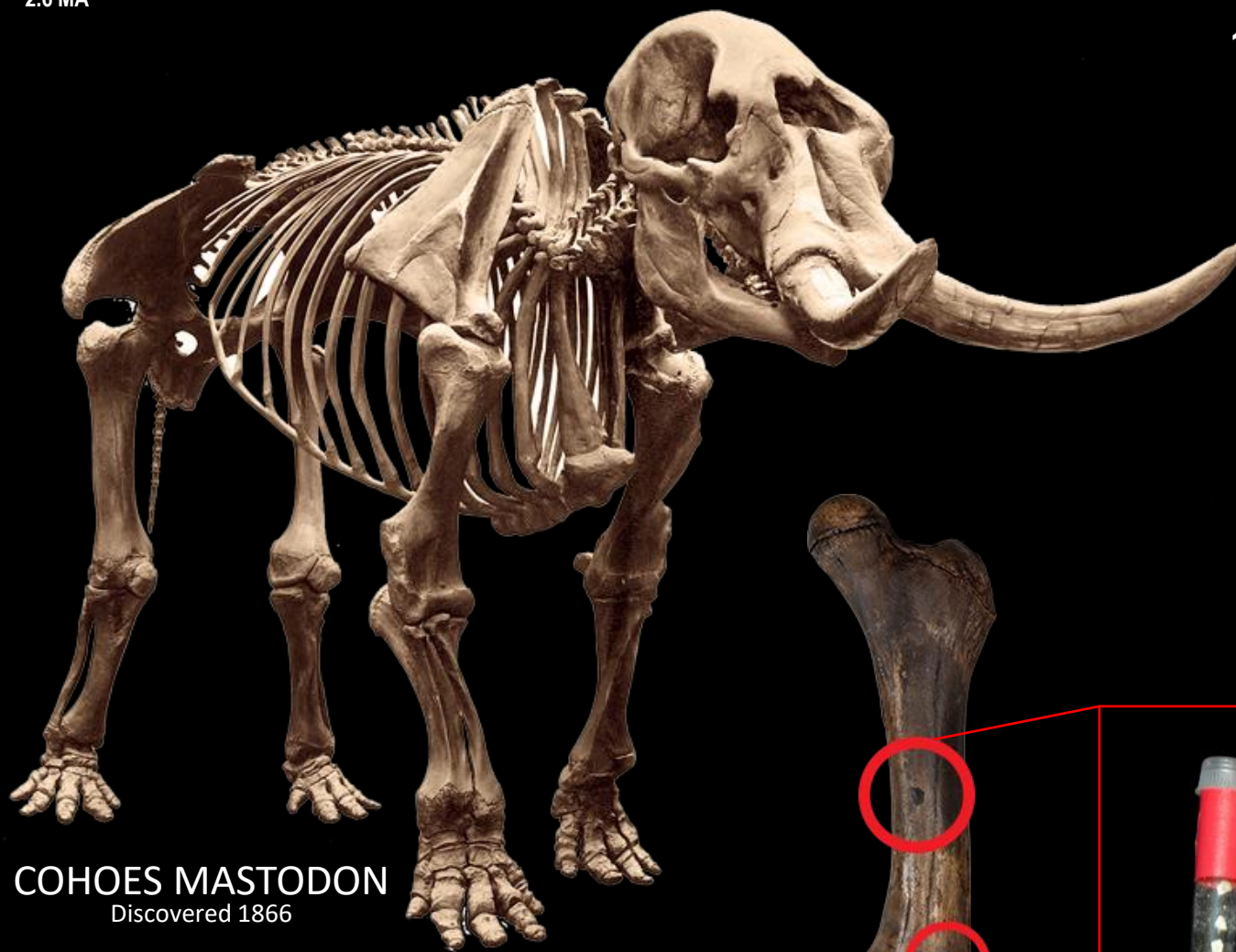
**JAMES HALL**

1<sup>st</sup> State Geologist of NY  
1<sup>st</sup> State Paleontologist of NY  
NYSM Director 1870 to 1894

2.6 MA

13 KA

TODAY



**COHOES MASTODON**  
Discovered 1866

MASTODON TOOTH



MAMMOTH TOOTH



LEFT FEMUR



COLLAGEN COLLECTED  
FOR CARBON DATING

2.6 MA

17 KA 14 KA 10 KA

TODAY

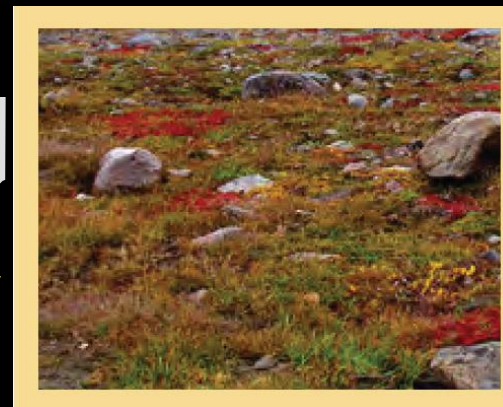
### QUATERNARY PLANTS from NYSM Collections



**DECIDUOUS FOREST**  
10,000 years ago  
to  
Present



**BOREAL FOREST**  
14,000 years ago



**TUNDRA**  
17,000 years ago

2.6 MA

# NYSM COLLECTIONS



17 KA 14 KA 10 KA

TODAY

DECIDUOUS FOREST  
10,000 years ago to Present



BOREAL FOREST  
14,000 years ago



TUNDRA  
17,000 years ago



# RECENT CHANGES IN NY

Conservation Efforts, and  
Looking to the Future

1836 – Present Day



## BIOLOGY

Dr. Jeremy Kirchman  
Curator of Ornithology



# NYSM BIOLOGY COLLECTIONS

1,460,000 FISH



1,200,000 INSECTS

210,000 VASCULAR PLANTS

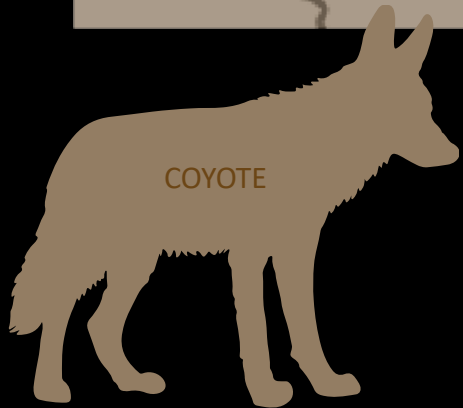
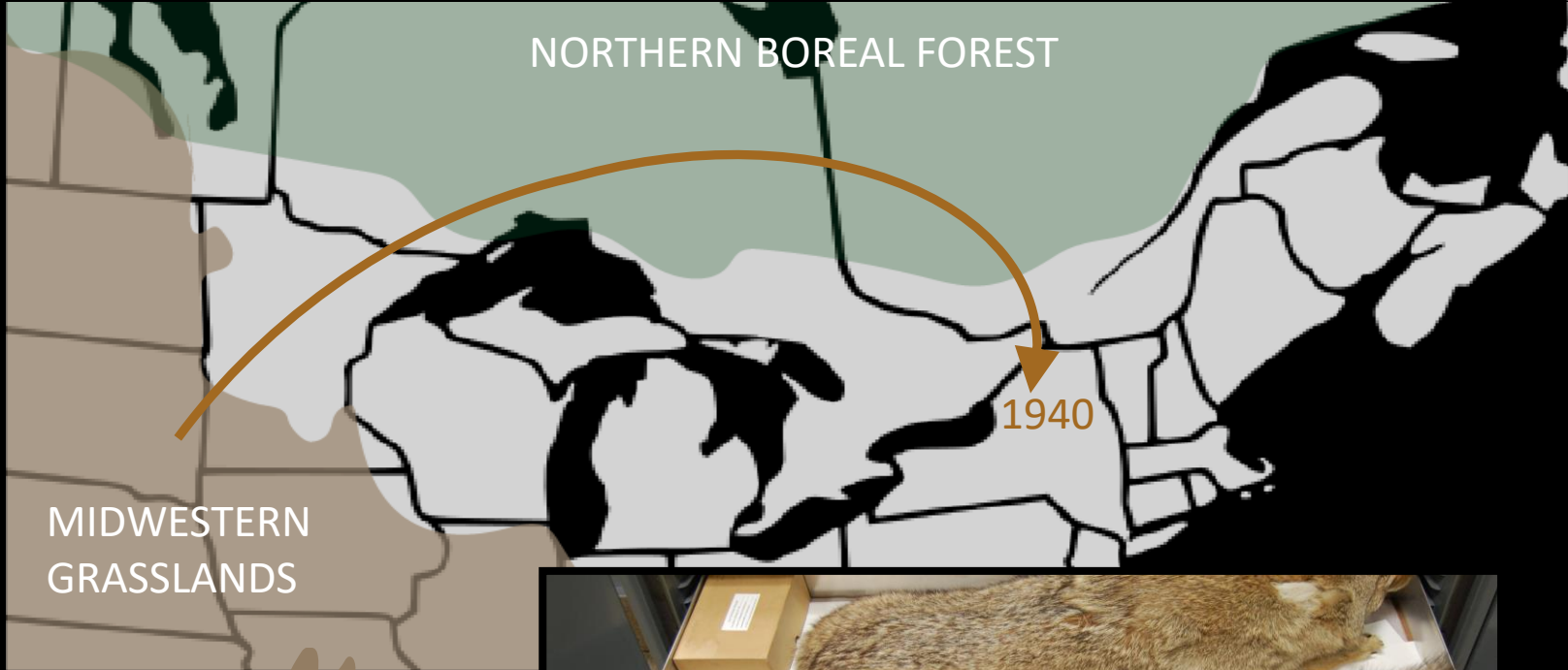
160,000 FUNGI

20,000 BIRDS

15,000 MAMMALS



# COLONIZATION & HYBRIDIZATION IN NEW YORK COYOTES



**COYOTE SKINS**  
JEFFERSON COUNTY, NY - 1940



NYSM COLLECTIONS



COYOTE SKULLS



FROZEN TISSUE COLLECTION



NEW YORK

HYBRID  
COYOTE + WOLF



OHIO

COYOTE



# COLLECTIONS DATA AVAILABLE ONLINE



Search Records

search all fields

Must have media  Must have map point

Filters Mapping Sorting Download

Add a field Clear

Collection Code: zo  
 Present  Missing

Institution Code: NYSM  
 Present  Missing

Date Collected: Start: yyyy-mm-dd End: yyyy-mm-dd  
 Present  Missing

↓ Scroll To Bottom ↓

Top 5 Taxa

- Agelaius phoeniceus
- Melospiza melodia
- Dumetella carolinensis
- Pandion haliaetus
- Zonotrichia albicollis
- other



NYSM ORNITHOLOGY COLLECTION



SPECIMEN DRAWERS



INDIVIDUAL SPECIMENS

# RESEARCH & EXHIBITION



**BIRDS OF NEW YORK**  
LESSON FOR EDUCATORS  
GRADES K-5

**READING EXERCISE**  
PESTICIDES, MUSEUM COLLECTORS

These activities are designed to meet 5th grade requirements for the Science Curriculum for the Living Environment and are appropriate for Grades 5-12.

**BIRDS OF NEW YORK**  
SCIENCE LAB  
EXPLORING DDT'S EFFECT ON RAPTOR POPULATIONS

**BIRDS OF NEW YORK**  
LESSON FOR EDUCATORS  
GRADES K-5

**BIRDS OF NEW YORK**  
SCIENCE LAB  
EXPLORING EVOLUTION  
BIRD SKELETONS ARE ADAPTED TO DIFFERENT FEEDING NICHES

**ICE AGE MAMMALS COLONIZE NEW YORK:**  
A STEM LAB DERIVED FROM COLLECTIONS-BASED RESEARCH AT THE NEW YORK STATE MUSEUM

Robert S. Feranec, Ph.D.  
Andrew L. Kachowski, Ph.D.  
New York State Museum Education Leaflet 37

