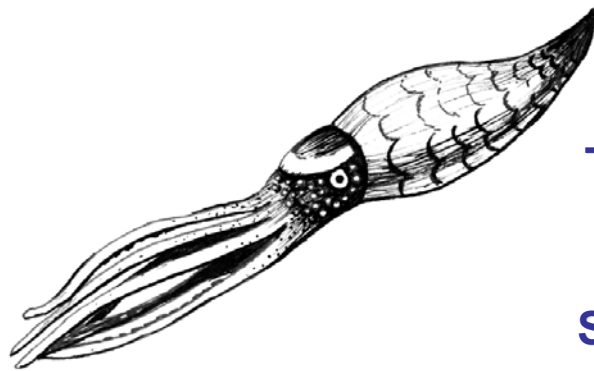




# Silurian Reef Digitization Project



Follow A Fossil Full Circle

From Collection, To Research,  
To Outreach, And Interpretation

Through The Field Museum's  
Silurian Reef Digitization Project

by

Paul Mayer  
Alex. P. Layng  
Kathryn Albright  
Ryan Manzuk

Illustrations by Alyssa Caywood



INSTITUTE of  
Museum and Library  
SERVICES

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MILWAUKEE  
PUBLIC MUSEUM

The Field  
Museum



My talk will focus on these two specimens of  
*Dawsonoceras annulatum*



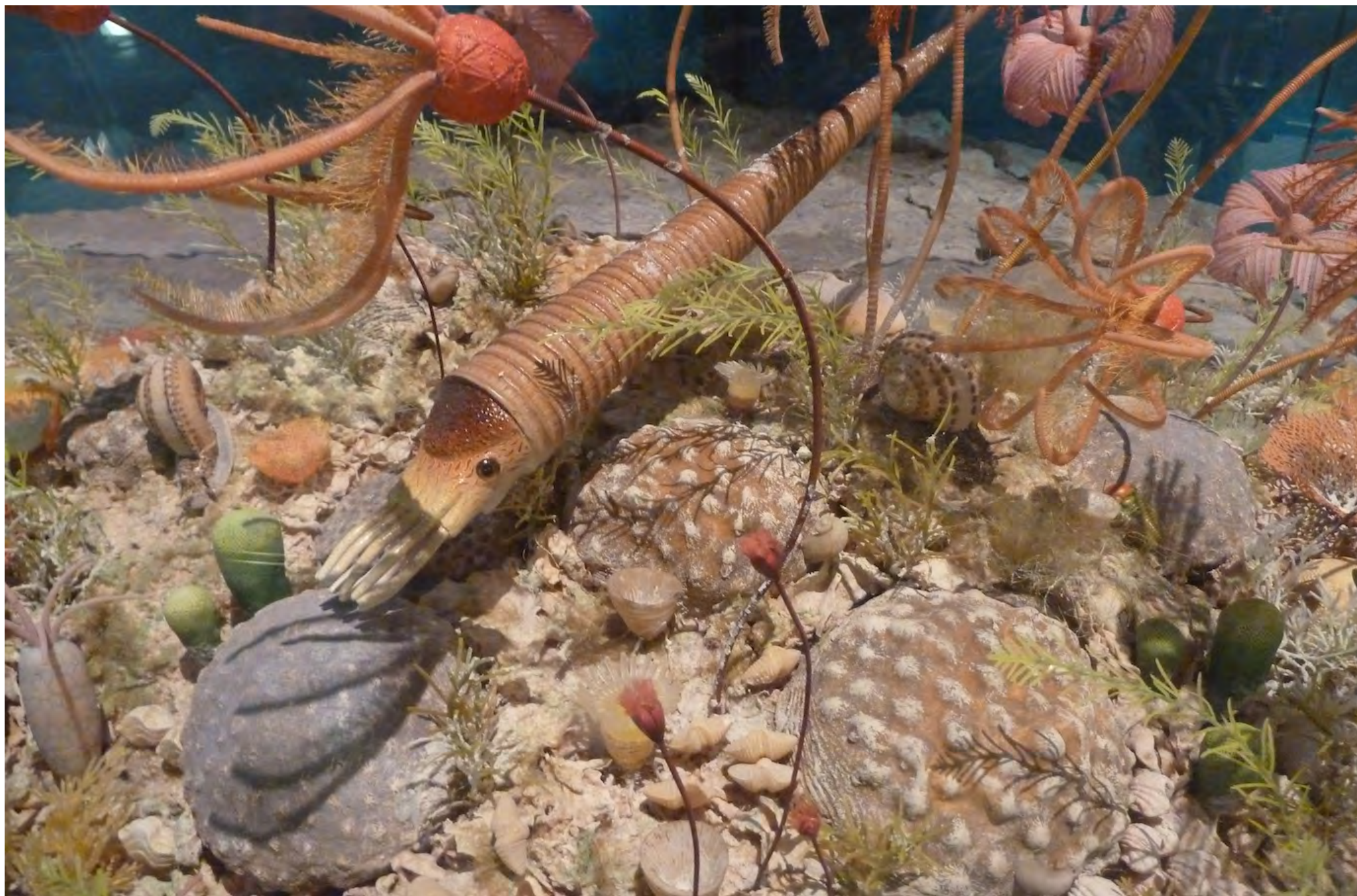
Daenerys P 754



Tyrion P 5666



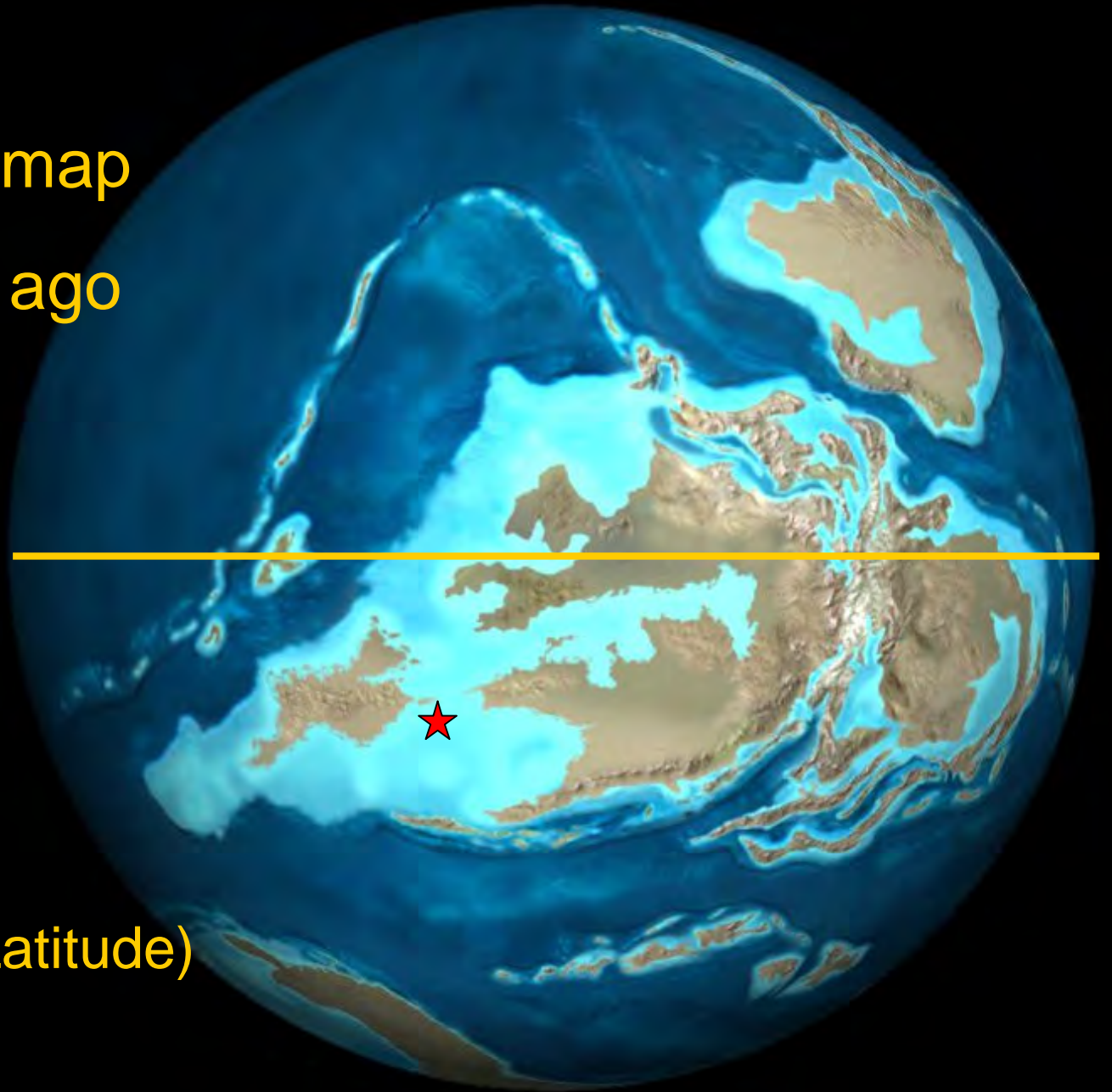




430 million years ago *Dawsonoceras annulatum*, an orthoconic nautiloid cephalopod, jetted between reefs on a tropical, carbonate platform munching on trilobites.  
Diorama at National Museum Cardiff



# Silurian Paleogeographic map 430 million years ago



- Warm
- Tropical (17° South Latitude)
- Carbonate platform



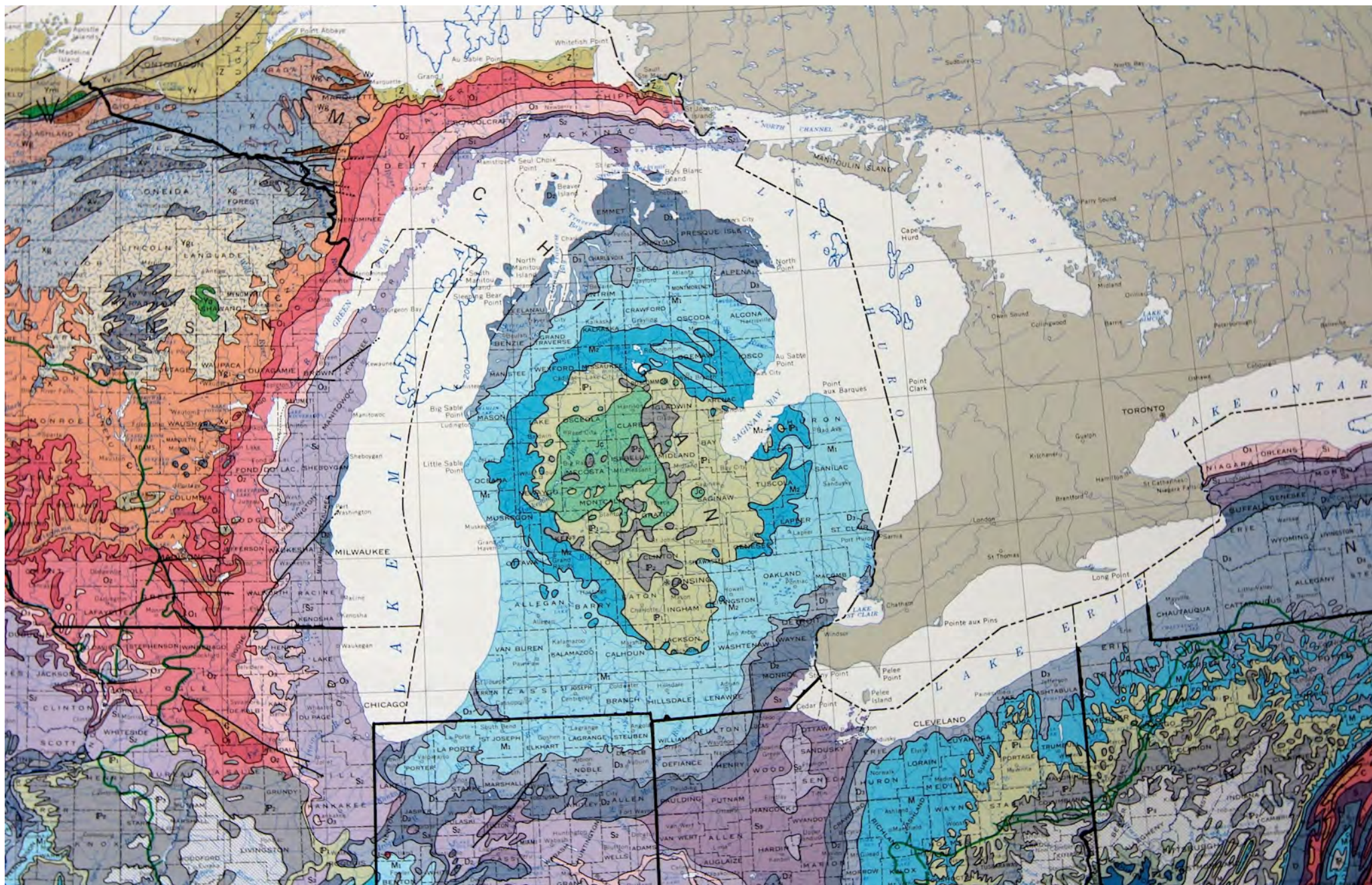




All good things must come to and end







**Bedrock Geology Map USGS**  
Grayish-purple is Silurian age rock



# Niagara Escarpment











Photo by Scott Olson/Getty Images







# Fossil Silurian Reef

Flank beds dipping off of 100 meter tall Silurian reef core at  
Thornton Quarry, Illinois, USA





**Peristyle and Water Gate  
from Grand Basin.  
World's Columbian Exposition 1893.**



© The Field Museum, GN90799d\_JWH\_026w,  
Photographer William Henry Jackson.



**407 Silurian fossils in Ward's collection,  
69 of them were from Illinois including Daenerys**



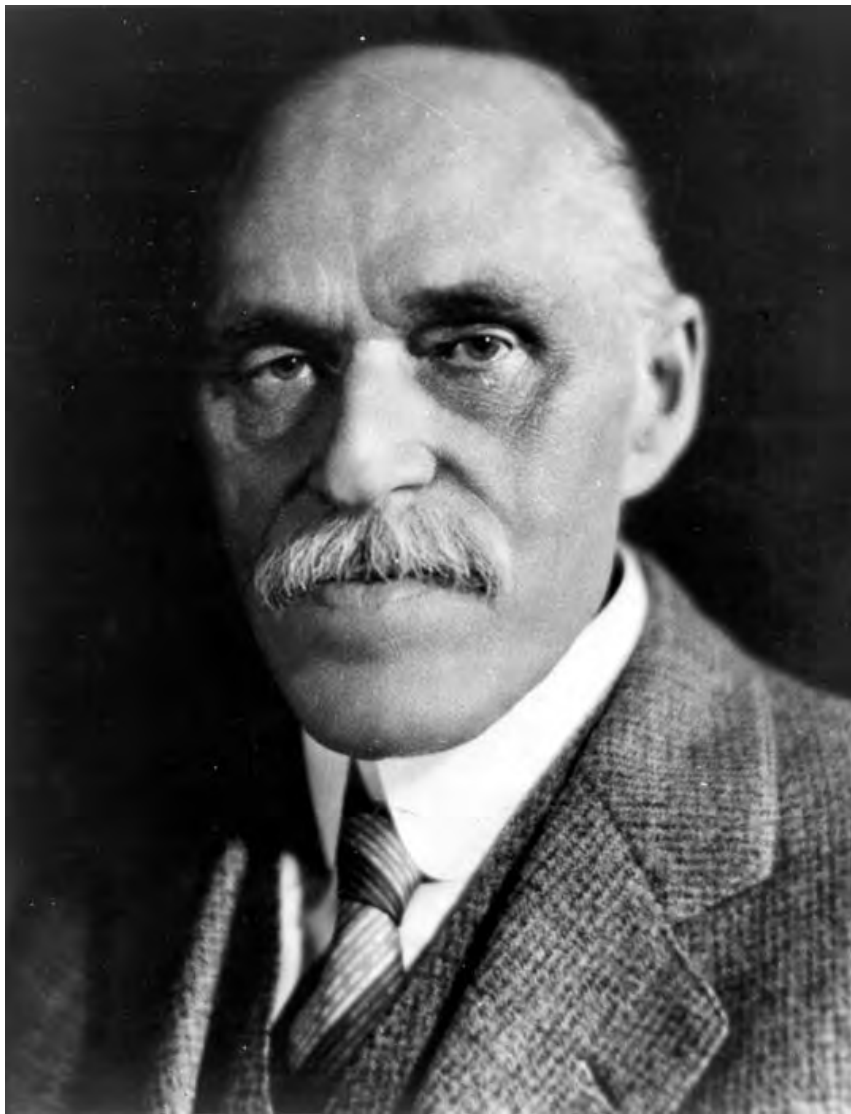
© The Field Museum, GN85075.



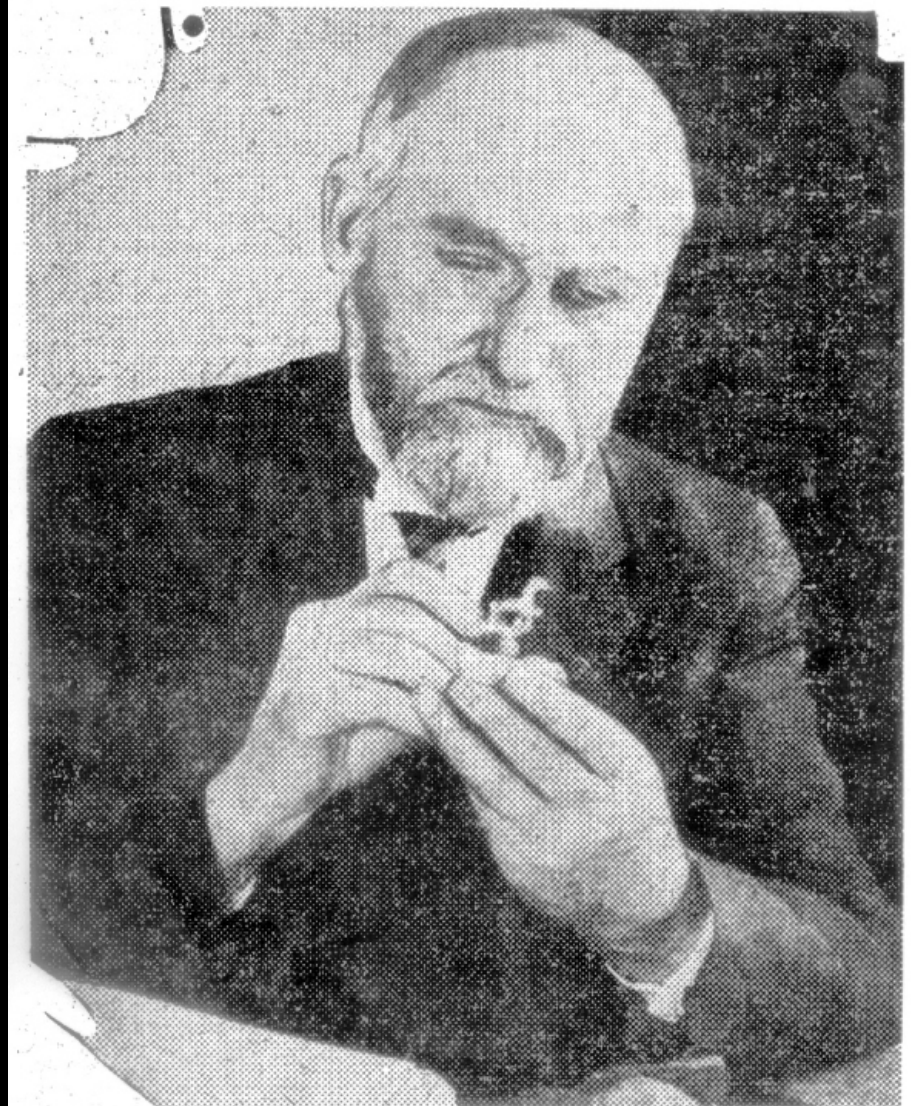
# Image of Daenerys from 1899







Oliver Cummings  
Farrington,  
Geology Curator



Arthur Ware Slocom,  
Fossil Invertebrate Curator



Ground was broken on September 3, 1892 for the Chicago Drainage Canal, later renamed the Sanitary and Ship Canal. 28 miles from Chicago to Lockport, Illinois.





Collected ~25,000 Silurian reef fossils  
stored in the collection  
as 5,000 specimen lots



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**Tyrion, an Internal model, and an impression of an  
orthoconic nautiloid cephalopod Fossil  
(*Dawsonoceras annulatum*).  
Photographed in 1913**



Possibly these negatives were made for Fossil Collecting  
by Dr A. W. Slocom, Assistant Curator, Division of Invertebrate  
Paleontology, Field Museum Thirty eighth free illustrated lecture course  
Date March 8, 1913





# Early Geological History of Chicago

BY  
HENRY W. NICHOLS  
ASSOCIATE CURATOR OF GEOLOGY

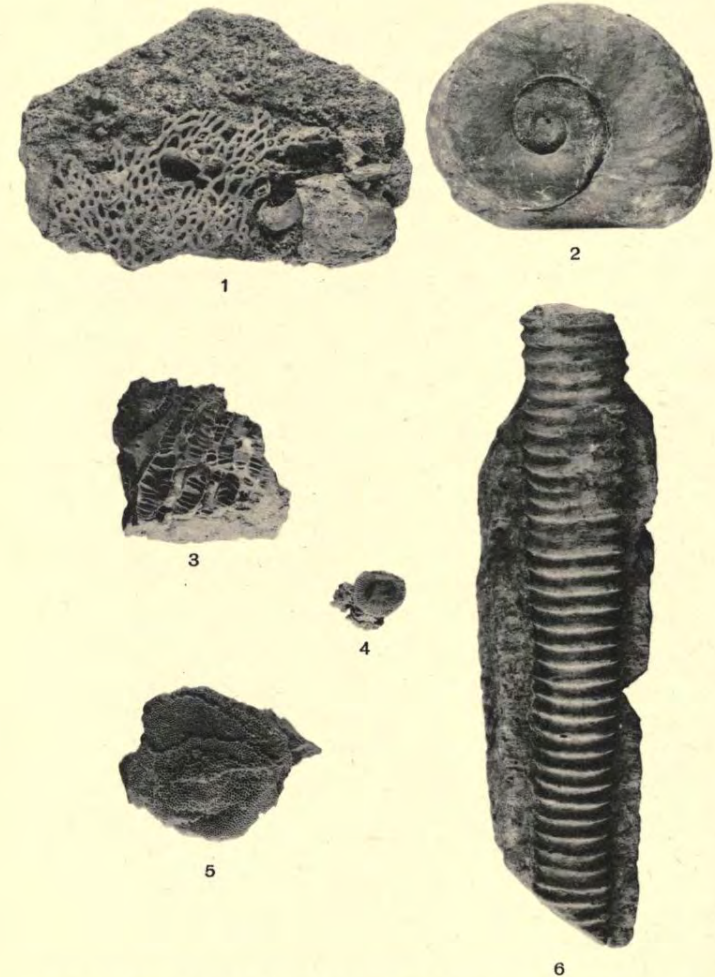


GEOLOGY  
LEAFLET 7

FIELD MUSEUM OF NATURAL HISTORY  
CHICAGO  
1925

LEAFLET 7.

PLATE IV.



COMMON FOSSILS FROM THE NIAGARA LIMESTONE OF CHICAGO.  
1, CORAL, CLADOPORA. 2, COILED CEPHALOPOD, NAUTILUS. 3, CORAL, DIPHYPHYLLUM. 4, CUP CORAL, OMPHYMA. 5, COMPOUND CORAL, FAVOSITES.  
6, STRAIGHT CEPHALOPOD, ORTHOCERAS.

Image of Daenerys from 1925



# Daenerys was on display in the Fossils of the Chicago case in the Frederick J. V. Skiff Hall (Hall 37) from 1951 to 1992

## FOSSILS OF THE CHICAGO REGION



AS THIS MAP THE CHICAGO AREA SHOWS THE LOCATION OF THE CHICAGO AREA IN THE NORTHWEST CORNER OF THE UNITED STATES. THE CHICAGO AREA IS LOCATED IN THE NORTHWEST CORNER OF THE UNITED STATES.

- ✓ PRECAMBRIAN
- ✓ CAMBRIAN
- ✓ SILURIAN
- ✓ DEVONIAN
- ✓ MISSISSIPPIAN
- ✓ PENNSYLVANIAN
- ✓ CARBONIFEROUS
- ✓ PERMIAN
- ✓ TRIASSIC
- ✓ JURASSIC
- ✓ CRETACEOUS
- ✓ TERTIARY
- ✓ QUATERNARY

THE CASE SHOWS THE CHICAGO AREA IN THE NORTHWEST CORNER OF THE UNITED STATES.

WITHIN FIFTY MILES OF CHICAGO THE MAN HAS COLLECTED Fossils REPRESENTING THE LIFE OF FIVE PERIODS OF GEOLOGIC TIME.

SEVERAL OF THESE PERIODS WERE NOT RECORDED IN THE AREA NEARBY CHICAGO.

FROM THE RECORD OF ABOUT ONE HUNDRED YEARS BETWEEN THE PRECAMBRIAN AND MISSISSIPPIAN PERIODS IS ABOUT IN THE AREA.

PRECAMBRIAN PERIODS ARE THE FIRST PERIOD OF THE WORLD'S HISTORY. THE FIRST PERIOD OF THE WORLD'S HISTORY. THE FIRST PERIOD OF THE WORLD'S HISTORY. THE FIRST PERIOD OF THE WORLD'S HISTORY.

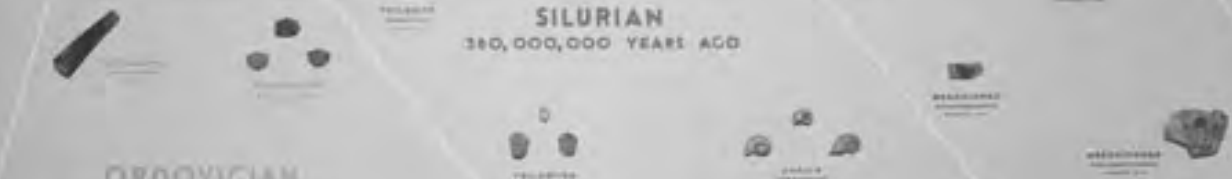
### PENNSYLVANIAN 280,000,000 YEARS AGO



### DEVONIAN 350,000,000 YEARS AGO



### SILURIAN 380,000,000 YEARS AGO



### OROVICIAN 450,000,000 YEARS AGO



A



In 1968 Daenerys makes her television debut with Ernest Roscoe in "Down to Earth," for the New Trier Township Instructional Television. The film was video-taped at the Museum and has been presented on educational closed-circuit television at several North Shore schools.





New Reef model of Chicago  
Silurian (430 million years ago) sea life diorama, shows models of Chicago  
area Life Over Time exhibit



© The Field Museum, GEO85829c, Photographer John Weinstein.



Daenerys on display in the background of Brain Scoop Episodes “Ask Emily #7” January 8, 2014 and “The Nondenominational Holiday Botanical Celebration”, December 25, 2013

# *the* BRAIN SCOOP

*with*  
EMILY GRASLIE





Tyrion on display  
at the  
2015 ESCONI  
Gem, Mineral and Fossil  
Show  
on the  
DuPage County  
Fairgrounds.



# Tyrion on display for the behind the scenes FMNH Members Night May 14-15, 2015





Interns move  
specimens from  
Collection range to  
digitization lab

Carts hold 6  
drawers



## Digitization lab with three workstations:

1. Label Photography
2. Specimen photography
3. KE EMu data entry





# Ryan Manzuk

## Label Photography Workstation







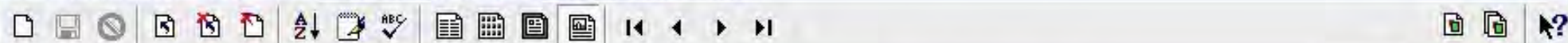
# Alex Layng Fossil Photography Workstation

# Kathryn Albright

## Entering data from digitized label photograph into KE EMu







2290007  
P 754 [HS, M] *Dawsonoceras annulatum* (Sowerby, 1818). Niagaran. , United States of America, Illinois, Cook

ON LOAN

Collection Details

Catalog subset: Main Catalogue Object Kind: Hand Specimen No. of pieces: Lot Count: 1

Identification

Taxon: *Dawsonoceras annulatum* (Sowerby, 1818) Type Status:

Locality

Locality: North America, USA, Illinois, Cook, Hawthorn

Stratigraphic Interpretations

Stratigraphy	Kind
1 Silurian, Niagaran. NAS	
2 . Wisconsin arch.	Lithostratigraphy
*	

Indicators

On Loan: ☒ P/C: ☐  
MM: ☐ notes: ☐

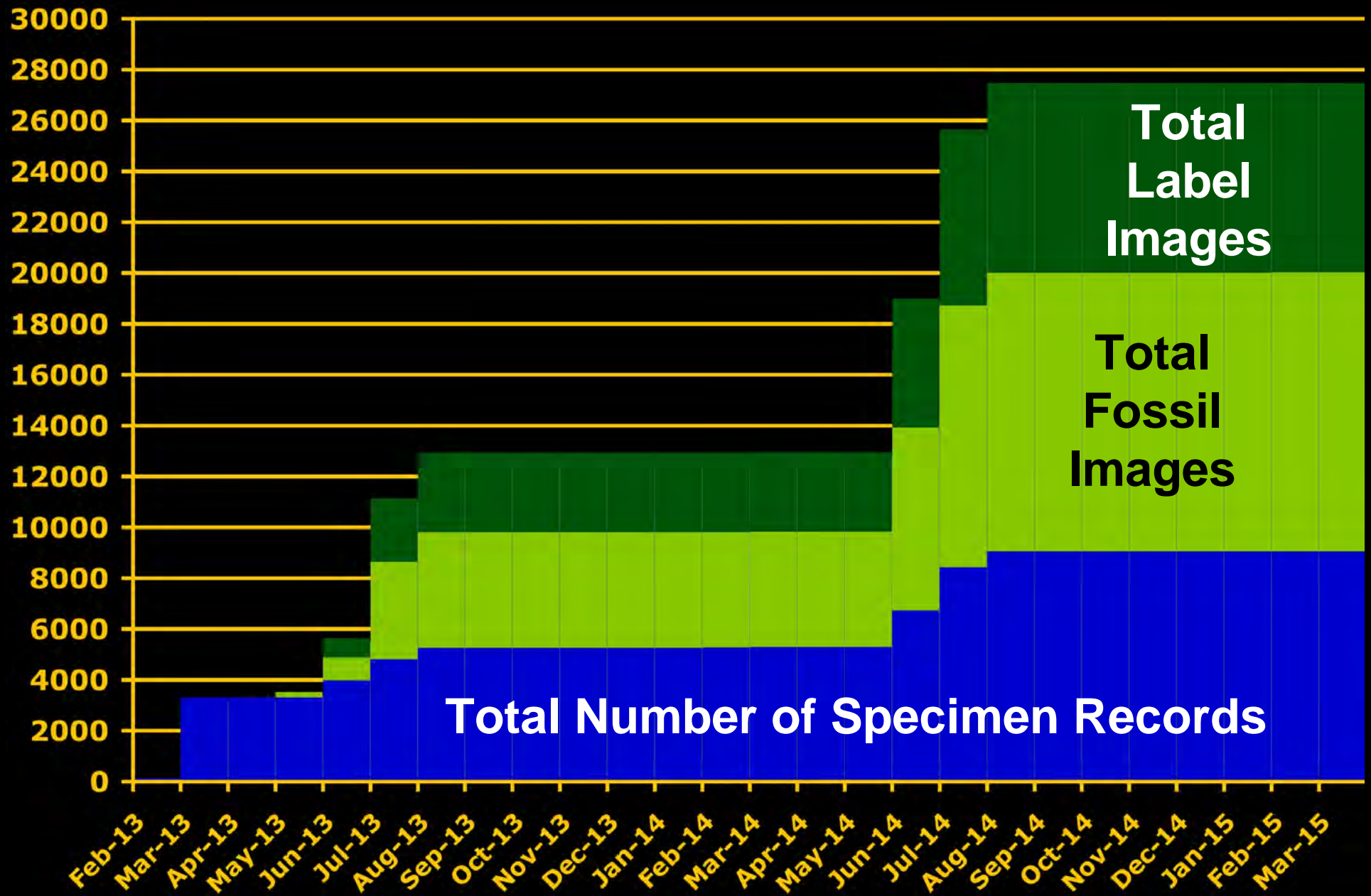
Accession Details

Collection Notes

Morphology

Lithology

# Digitization Progress at FMNH





## Average # of Minutes per Specimen

■ Data Entry  
■ Fossil Photos  
■ Label Photos

Minutes

14  
12  
10  
8  
6  
4  
2  
0

2013

2014

Fastest

2013

2014

Average

2013

2014

Slowest

3' 38"

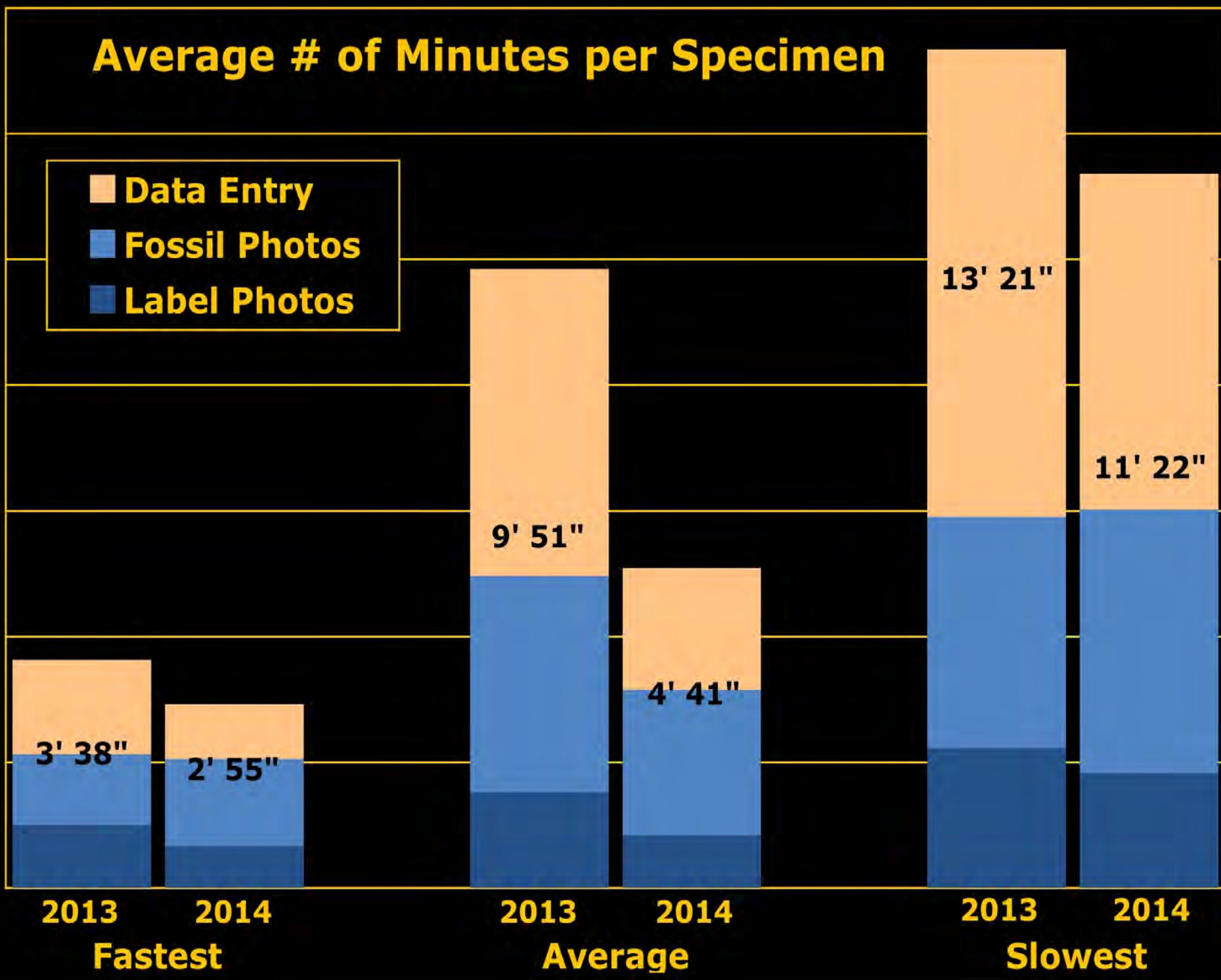
2' 55"

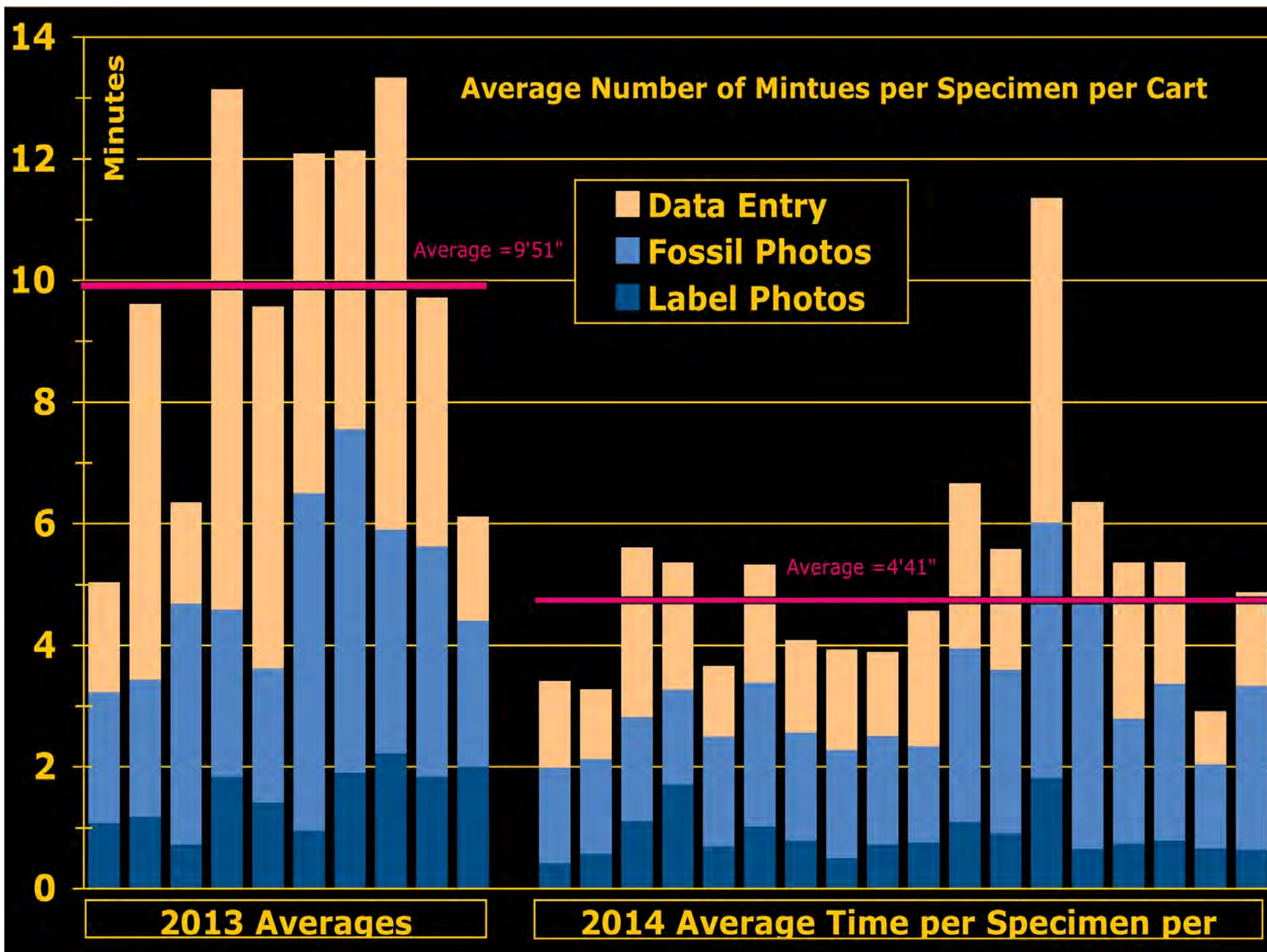
9' 51"

4' 41"

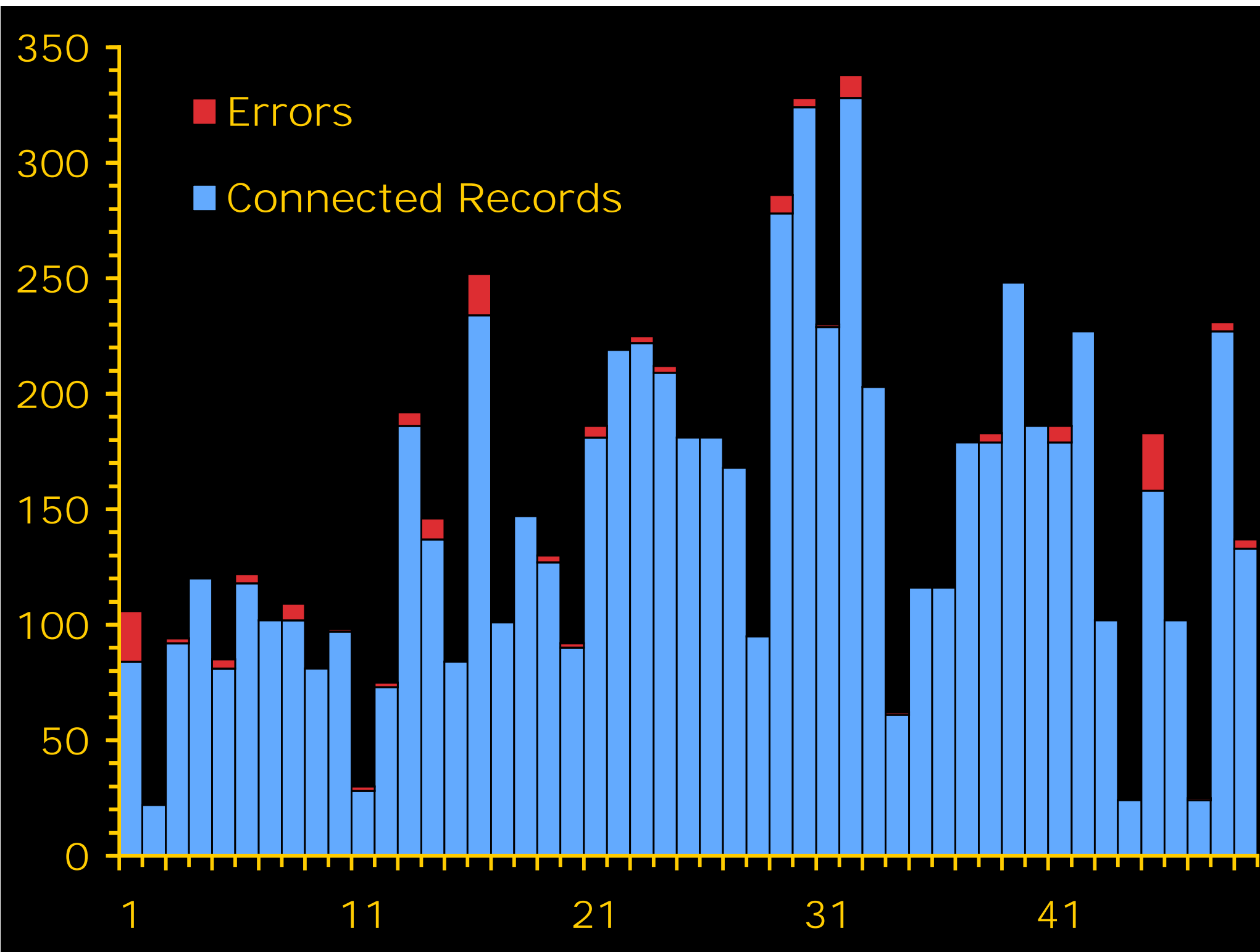
13' 21"

11' 22"







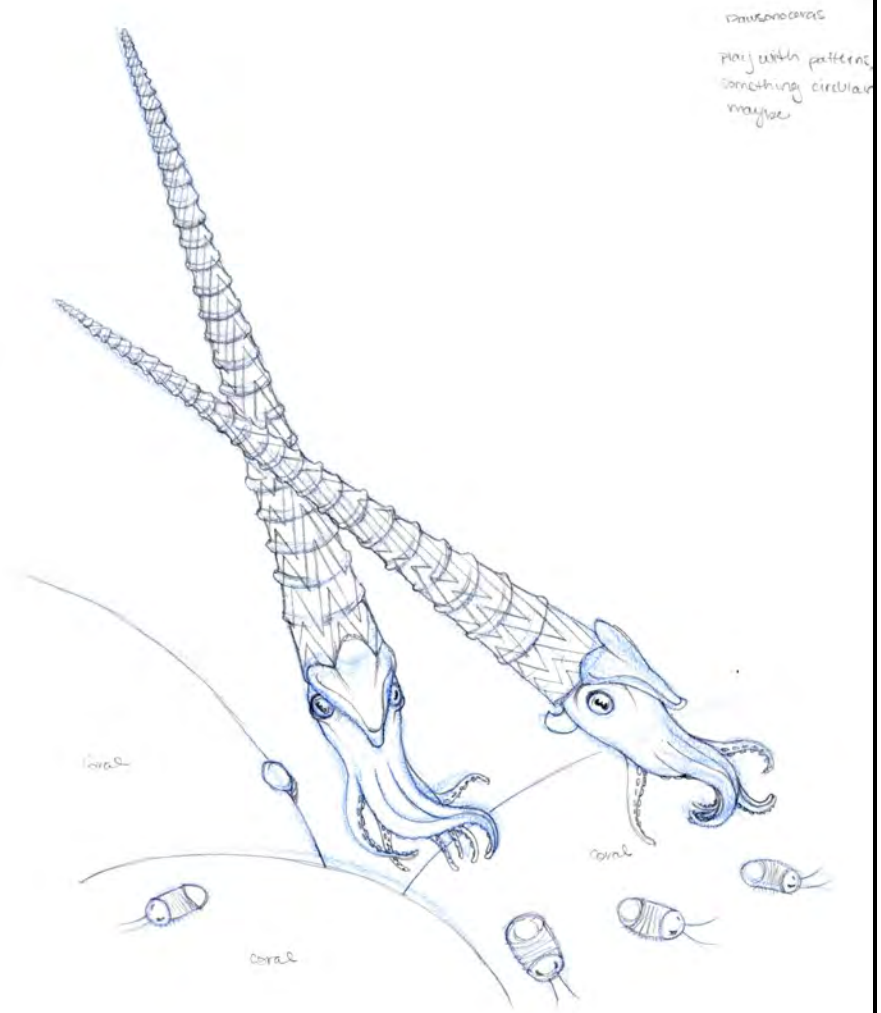
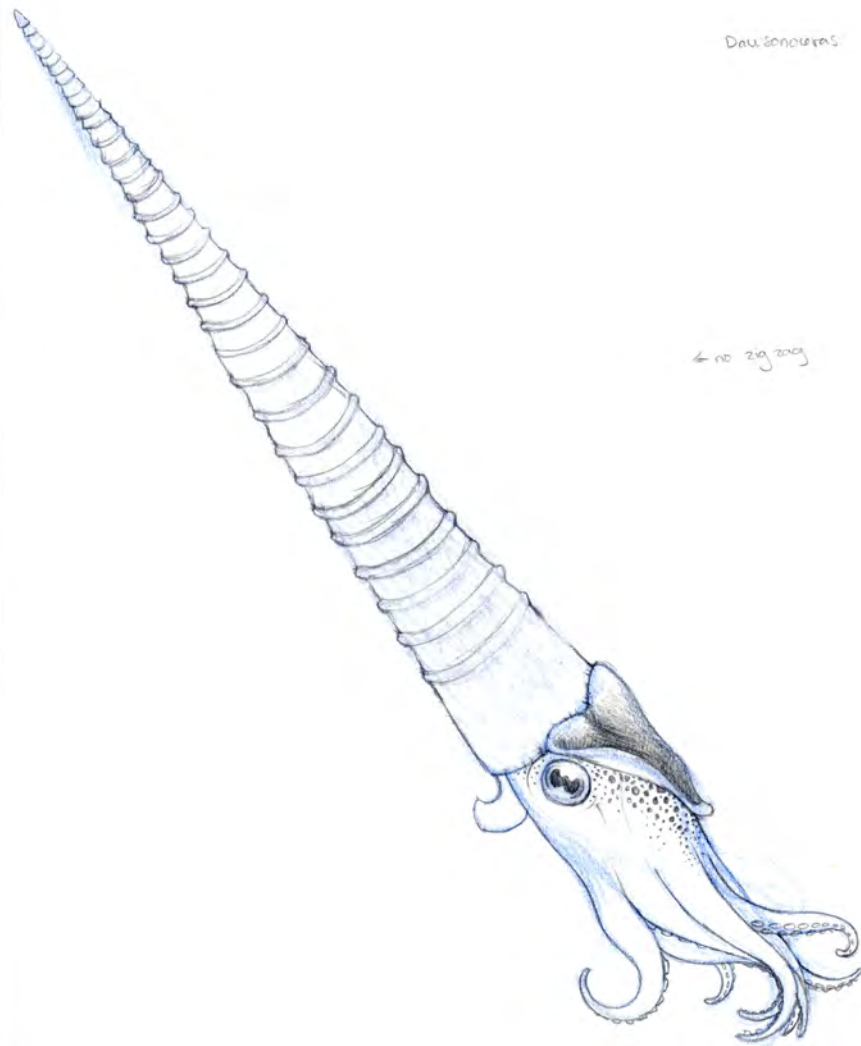


Mary Williams, Scientific Illustrator, using Tyrion as a model





# Initial sketches for *Dawsonoceras* by Mary Williams



# Final Sketch of Dawsonoceras by Mary Williams





# Kate Webbink and Marc Lambruschi

See their Demo at 3:30pm this afternoon Century Ballroom B and learn how data is pulled out of EMu and converted into web pages







**Paul Mayer**  
**Fossil Invertebrate Collections Manager**  
**at the Field Museum**  
**Chicago, Illinois**

## **Acknowledgements**

- **IMLS Grants For America**
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- **Grainger Digital Initiative**
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- **Marc Lambruschi**
- **Pete Herbst**
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- **Lindsey Snyder**
- **Heidi Rouleau**
- **FMNH Education Department**
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- **Katy Bickerton (Edge Renewables)**
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- **Nicole Karpus, Liza Connolly, Sam Albright, Ryan Manzuk, and Alex Layng**
- **Mary Williams and Tyler Fewell**