

FROM OFFICE WALLPAPER TO RESEARCH PRODUCT:

How digitization of the Field Museum's water beetles

yields insights to their historical
distributions in North America

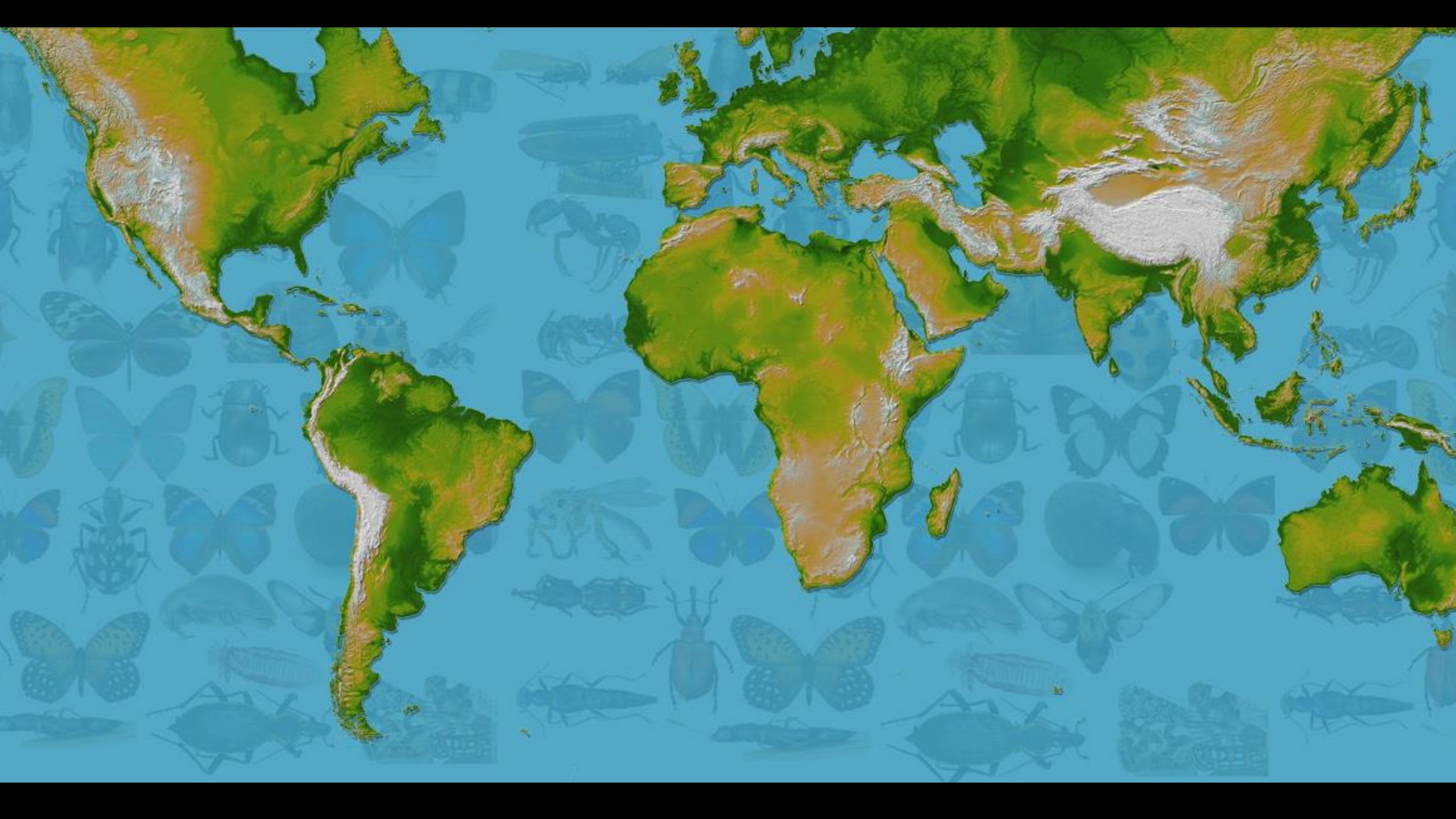


CRYSTAL A. MAIER

Collection Manager,
Field Museum Of Natural History

@dryopoiddarling







**16 MILLION
SPECIMENS**



RIFFLE BEETLES

ELMIDAE



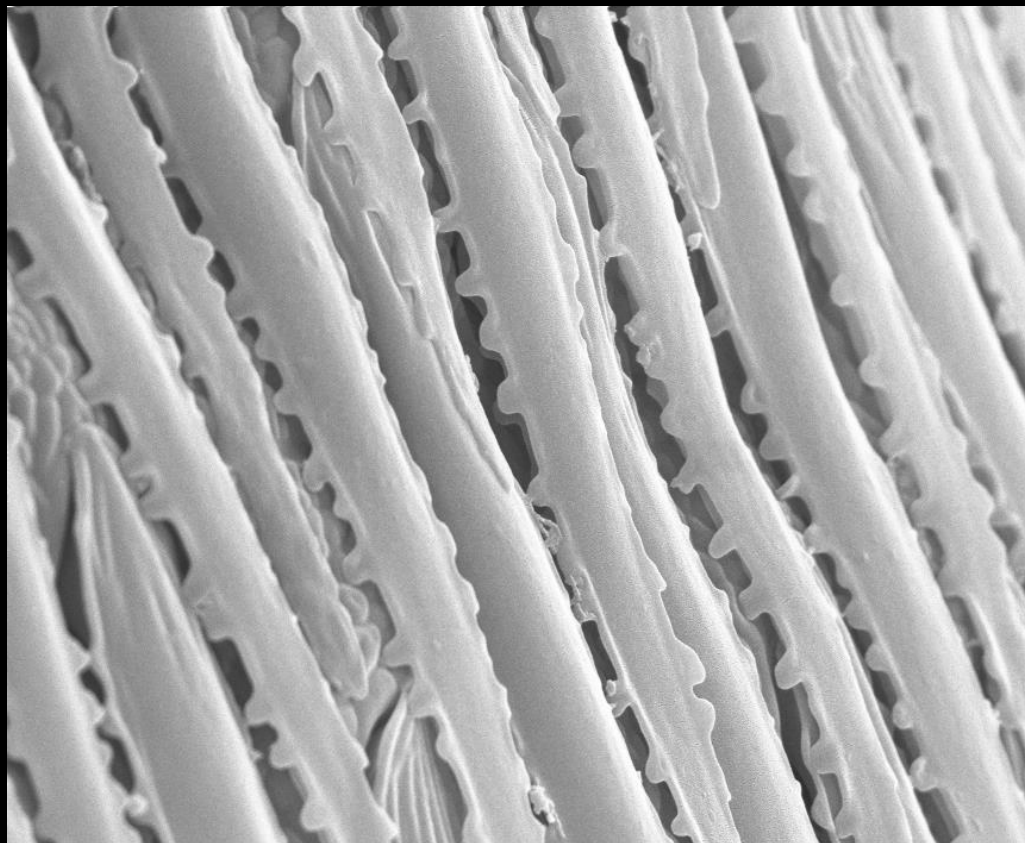


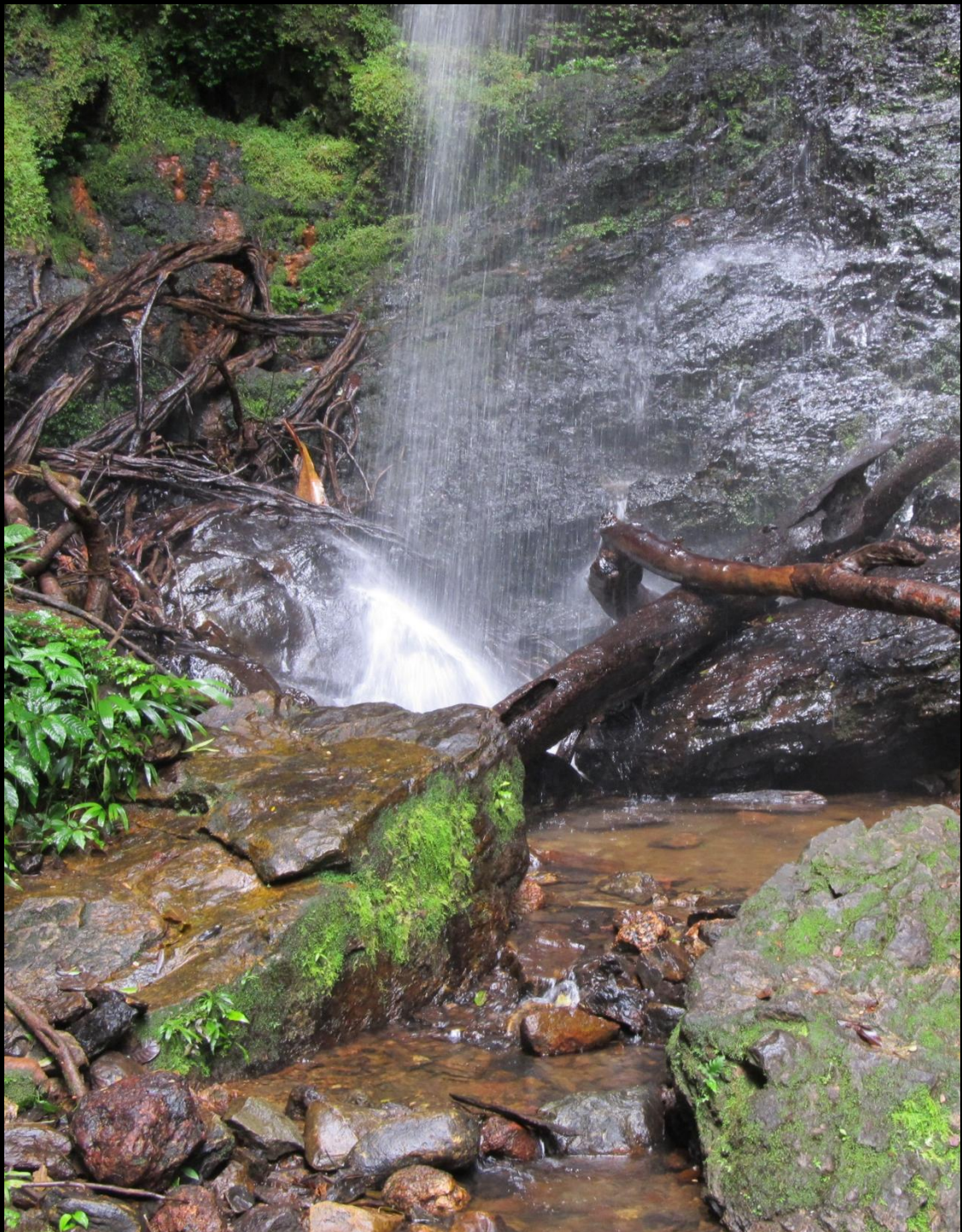


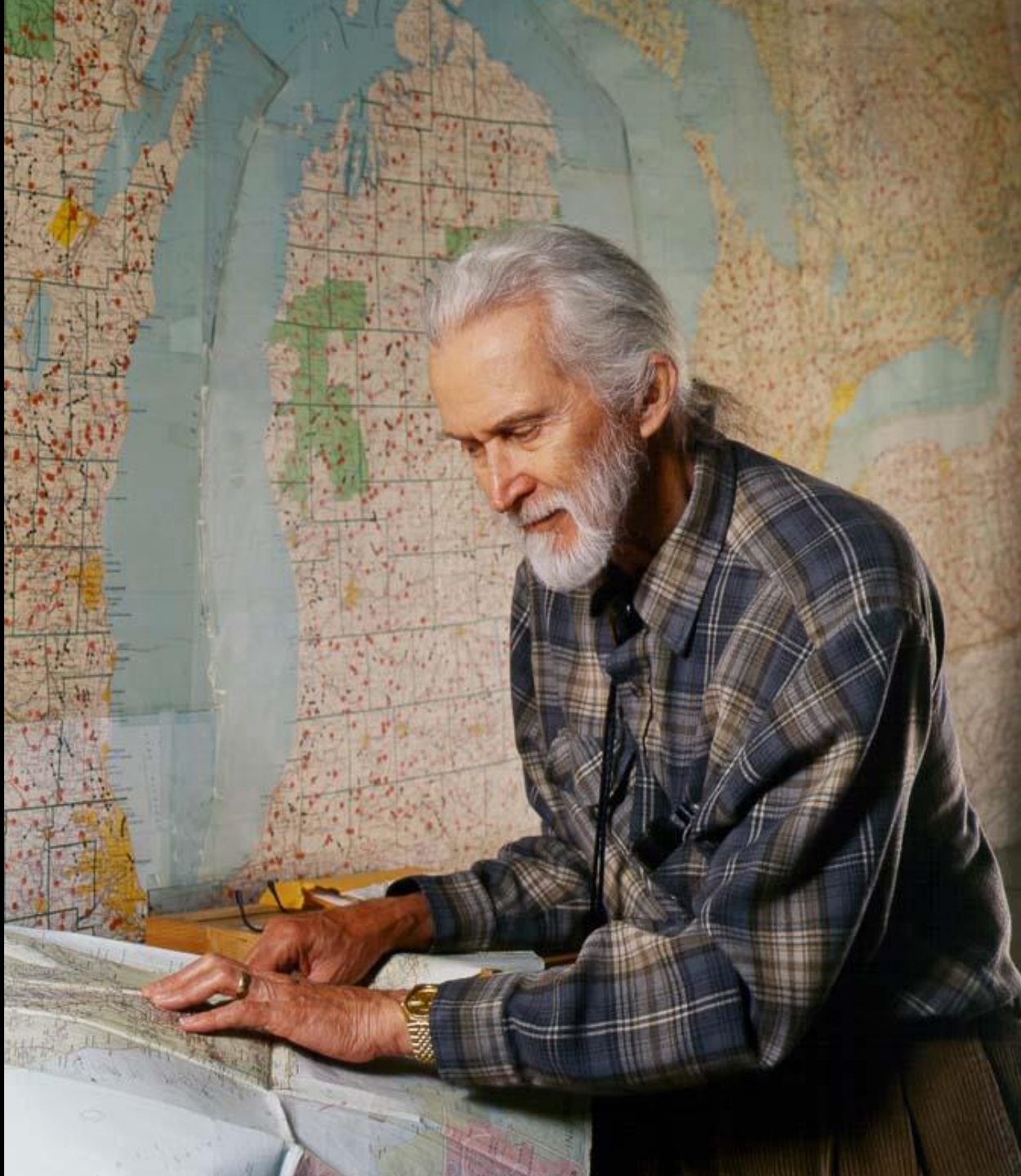
OS: C. PAINTING



1 mm

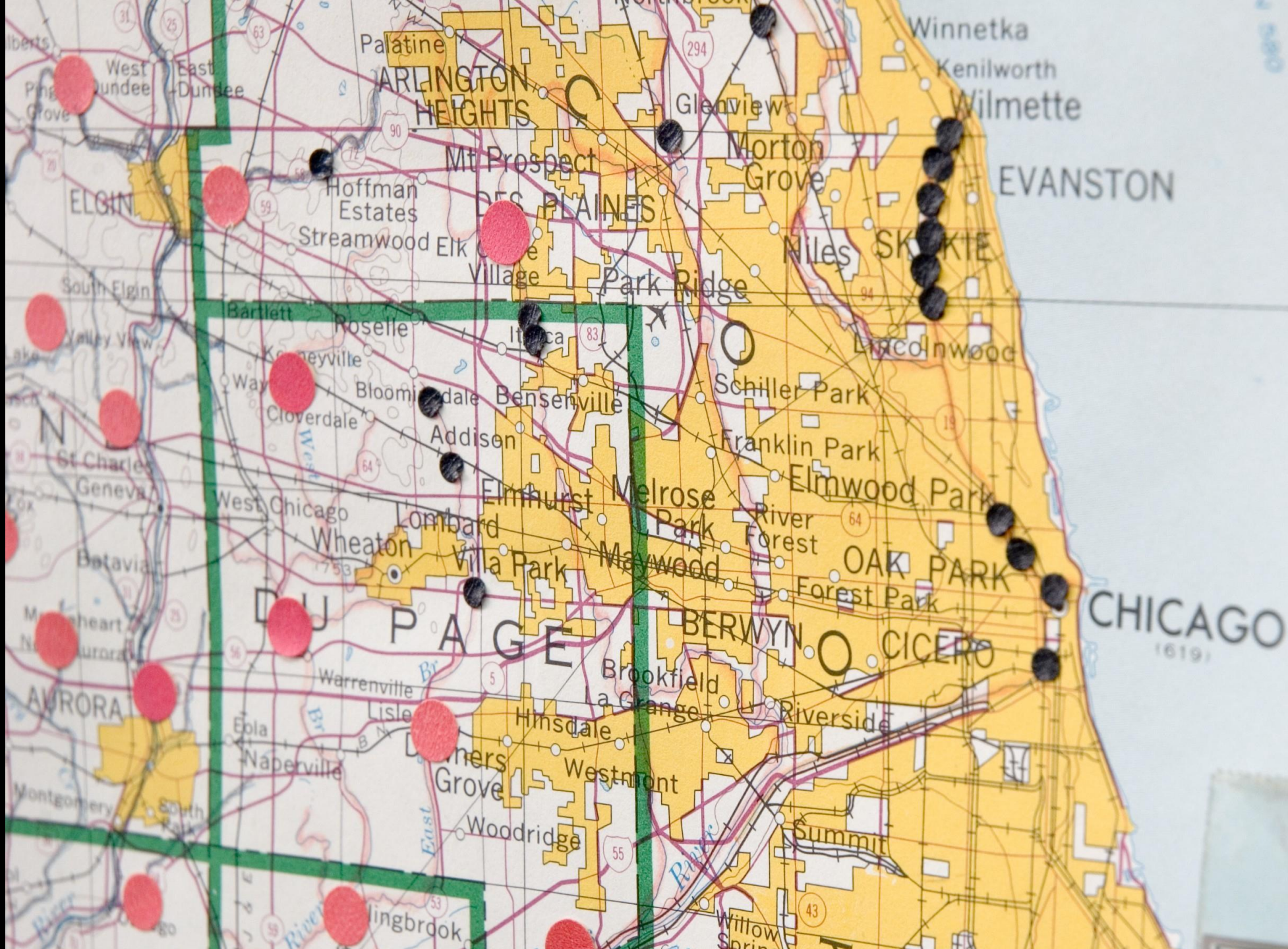






HARRY NELSON





I G A N

ARLINGTON HEIGHTS

DES PLAINES

DUPAGE

CHICAGO 1619

EVANSTON

SKOKIE

LINCOLNWOOD

OAK PARK

CICERO

BROOKFIELD

RIVERSIDE

WESTMONT

SUMMIT

PALATINE

MT PROSPECT

GLENVIEW

MORTON GROVE

HOFFMAN ESTATES

STREAMWOOD

VILLAGE

PARK RIDGE

BARTLETT

ROSELLE

ITACA

SCHILLER PARK

WHEATON

BLOOMINGDALE

BENSenville

FRANKLIN PARK

WAYNESVILLE

ADDISON

ELMHURST

ELMWOOD PARK

WEST CHICAGO

WHEATON

LOMBARD

ELMHURST

MELROSE PARK

RIVER FOREST

FOREST PARK

WEST CHICAGO

WHEATON

LOMBARD

ELMHURST

MELROSE PARK

RIVER FOREST

FOREST PARK

WEST CHICAGO

WHEATON

LOMBARD

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MELROSE PARK

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ELMHURST

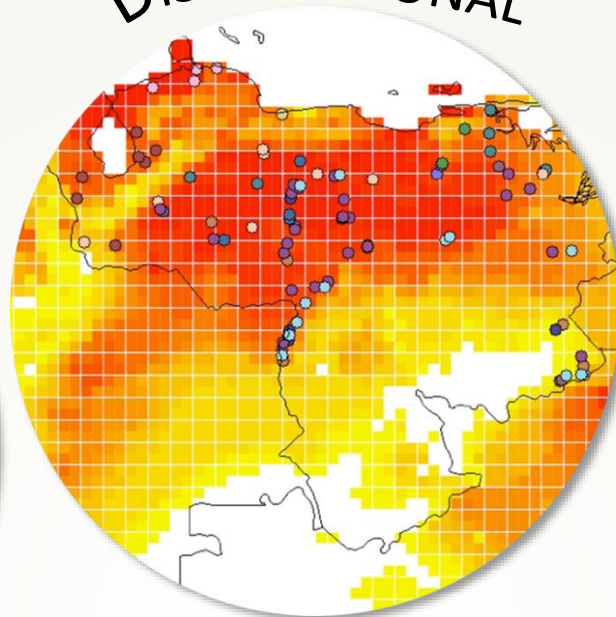
MELROSE PARK

RIVER FOREST

FOREST PARK



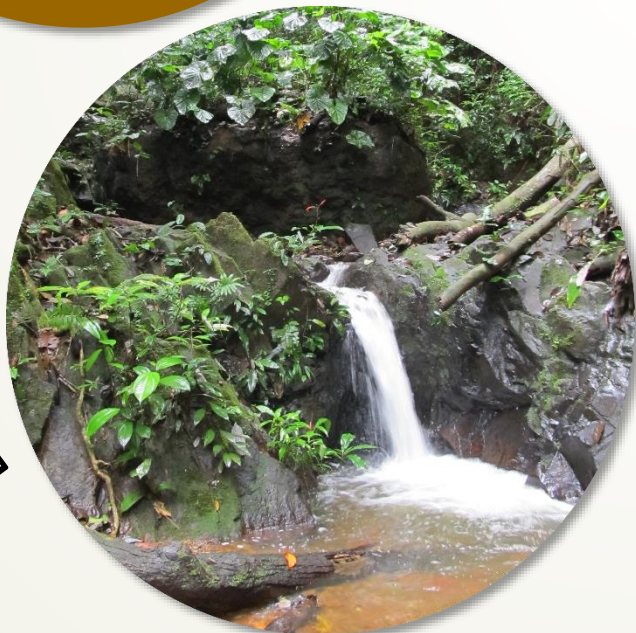
DISTRIBUTIONAL



MORPHOLOGICAL



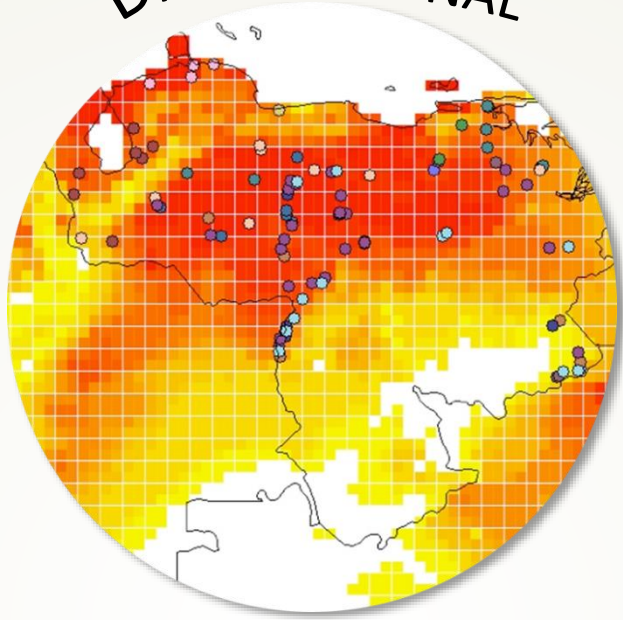
ECOLOGICAL



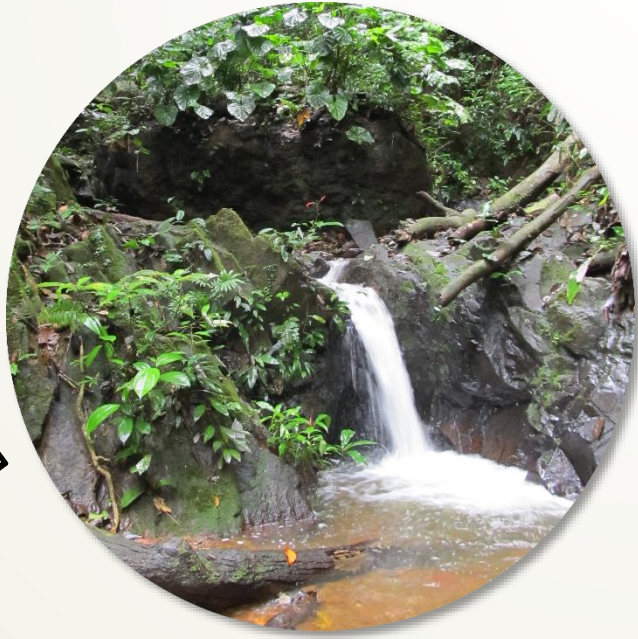
MOLECULAR



DISTRIBUTIONAL



ECOLOGICAL



470

285

16

16137

93

71

Columbus

270

668

188

33

62

22

23

328

56

367

681

31

2

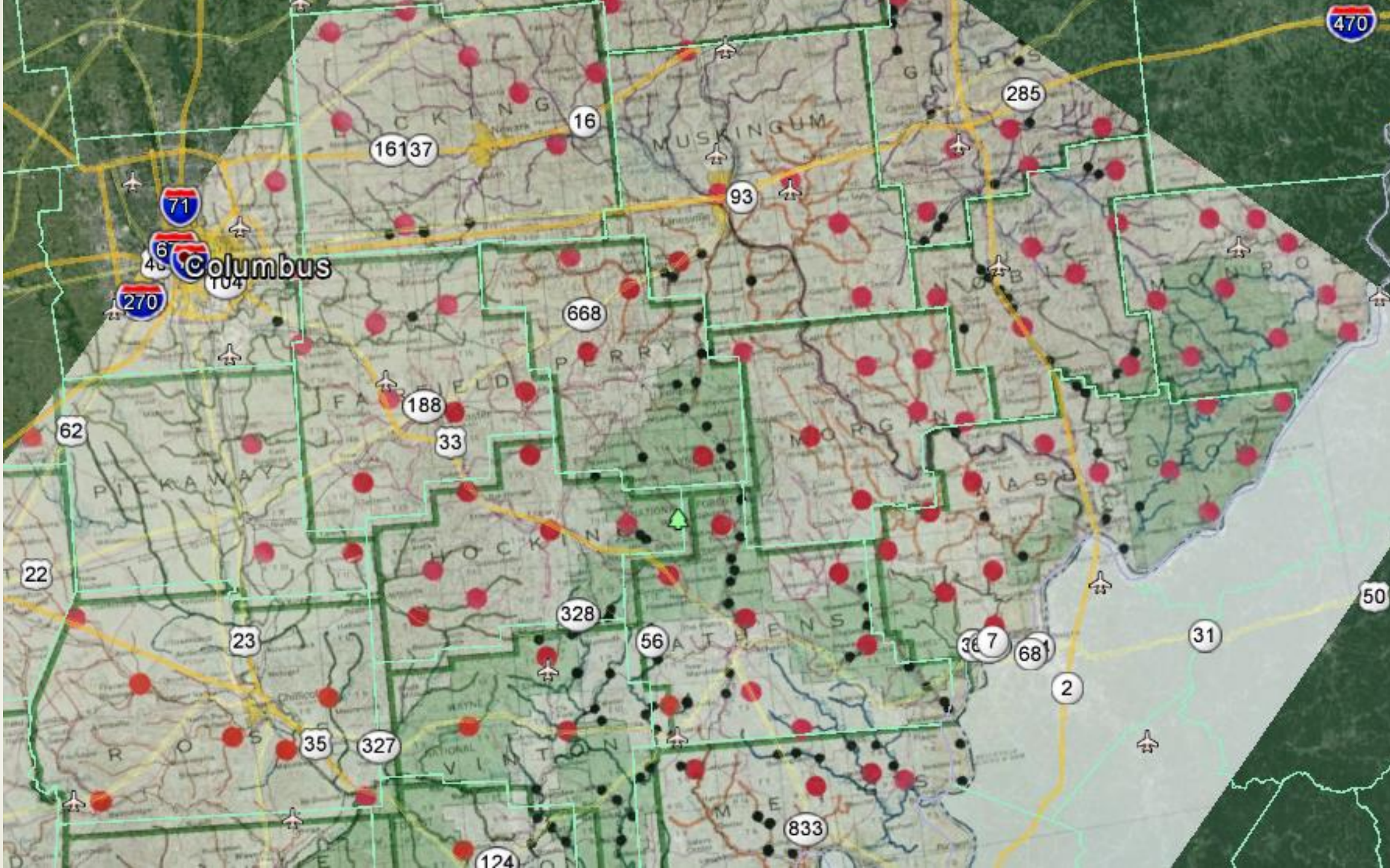
50

35

327

833

124



CAN:B.C., Trout
Ck., rte. 97, Summer-
land. VIII-21-1988
H.G. Nelson leg.

CAN:B.C., Deep Ck.,
tr. Okanagan Lake,
rte. 97, Summerland
VIII-21-1988
H.G. Nelson leg.

CAN:Que., Co. St. Jean
Est, ck ex L Labrecque,
6 mi WSW St. Leon (9 mi
N Alma) VIII-22-1987
H.G. Nelson leg.

USA:Ind., Crawford
Co., Otter Ck.,
rte. 37, 3.5 mi S
English. V-9-1985
H.G. Nelson leg.

USA:Ind., Crawford
Co., Blue R., Mill-
town. V-12-1985
H.G. Nelson leg.



USA:Ill., Knox Co.,
North Ck. (tr. Spoon
R.) Appleton Rd., 1.5
mi N jct. rte. 150 (11
mi E Galesburg. VII-21-
1991. H.G. Nelson leg.

July 24, 1984, NY: Co. Oswego; small tub of lab at site #104, Fruit Valley.

AT = 22 1/4 °C at
WT = 23 9/30 at

7/24/84 (see page 202) long layer / mids above the lake. Is ponded down in 1/4 mi. SW of Oswego good water str. but for hard rock, shaly.

24, 1984, NY: Co. Oswego; Catfish Creek at site #104B, 1 mi SW of Oswego (= 1 mi S of NE of Oswego)

AT = 23 1/4 °C at
WT = 23 3/4 °C at 11:45 am

Demister
Copper shaly with fine chert 199. But also gray / magenta sh - abundant. + coarse sand

II-24, 1984, NY: Co. Oswego; Trib. (was) of Catfish Creek, 1 mi NW of East Palermo.

Nabungahake
???

? heavy / mud
cultivated (in 1984) is from invasion / natural (clear) swamp country

I-1984: NY: Co. Oswego; Catfish Creek at N of Palermo 2 mi

AT = 24 3/4 °C at
WT = 24 1/4 °C at 1:30 pm

202
dark / coarse sand, small's fony much wood debris

NY: Co. Oswego; Grounds and #28, 1/4 mi S of Palermo
SCAPEL
good's fony / coarse sand

AT = 24 3/4 °C at
WT = 25 3/4 °C at 3:15 pm

Stop #204
TUES, July 24, 1984, NY: Co. Oswego, Little Sandy Creek

Two vias ENA-1984 #30 (31) above

AT = 24 1/4 °C at
WT = 24 1/2 °C at 1:30 pm

about 10 m apart
St. Paul's 13 NOV 07.
E (21) different colored. St. Paul's rock lenses in prob. of stone / gravel

84.3 1/2

Stop #205
TUES, July 24, 1984, NY: Co. Jefferson; Little Sandy Creek at site #193

Two vias ENA-1984 #32 (33) below
Psalms 30 (Non part) l. bit. 30 (Non part) Palms 125 (156) St. Paul's

530 6:15
AT 24 23 3/4 °C
WT 28 3/4 27 3/4

bed rock / coarse at 20 ft
Saw a mound / complex - too big to take!

Stop #206
WED, July 25, 1984, NY: Co. Hamilton; Rock River

Two vias ENA-1984 #34 (35) (36) below
100 yds below outlet of Lake Ontario at site #28 = 3 mi S of Blue Mountain (Tenn.)

AT = 19 3/4 °C at 12:45 pm
WT = 22 7/8 °C at

good coarse sand / stone but cementation!
Not easy to locate stone

Stop #207
WED, July 25, 1984, NY: Co. Hamilton; Hudson R (#37)

Two vias ENA-1984 #37 (38) (40) above
#37 (38) Hudson R #37 - 10' depth + more
E (2) 848207 of OPTM

AT = 21 1/4 °C at
WT = 24 1/4 °C at 20°

thotted in R. was tabs, low
I coarse sand / shaly upper / thin / boulders
26.3, 3 1/2

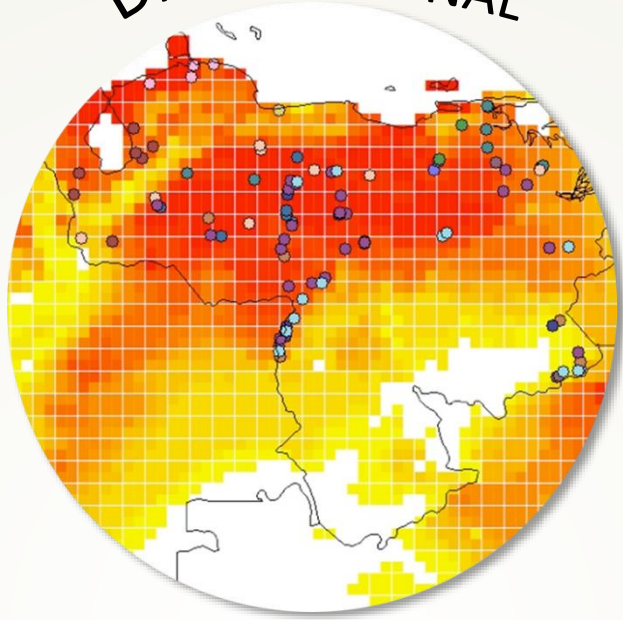
Stop #208
WED, July 25, 1984, NY: S. A. Johnson; New Haven River

Two vias ENA-1984 #39 (40) above
mud - 11 l. bit. - 6
? Phosphatic - 1
? " tab - 1
St. Paul's 9 NOV 07 (26)

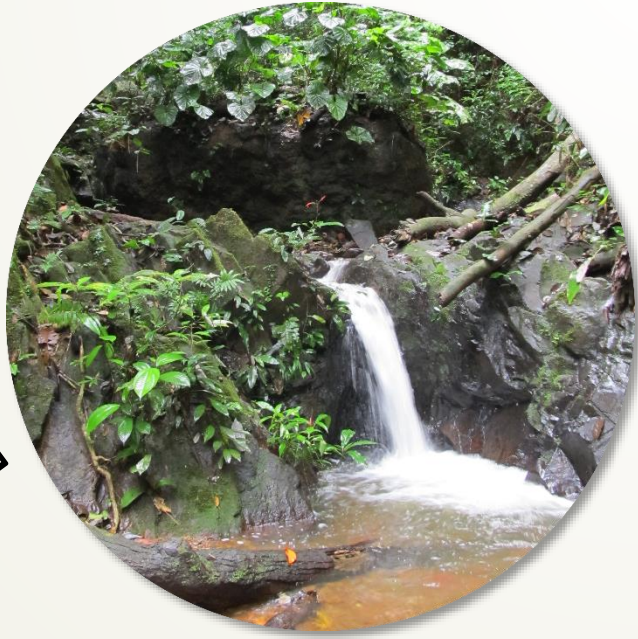
AT = 21 1/2 °C at
WT = 22 1/2 °C at 6:15 pm

Normal gravel bed / coarse / continuous but actually more / shaly / thin / coarse / stones in stream

DISTRIBUTIONAL



ECOLOGICAL



July 24, 1984, NY: Co. Oswego; small tub of lab at site at rd #714, Fruit Valley, AT = 22 1/4 / 0c at WT = 23 9/30 ed +

7/24/84, NY: Co. Oswego; small tub of lab at site at rd #714, Fruit Valley, AT = 22 1/4 / 0c at WT = 23 9/30 ed +
 2) About 3 mi SW of Oswego good sandstone, but for hard rock, shaly, 019.2 022.2

24, 1984, NY: Co. Oswego; Catfish Creek at rd #104B, 1 mi SW of Oswego, AT = 23% / 0c at WT = 23 3/4 / 11.45 am ed +
 (= 1 mi SW of Oswego) Demister

24, 1984, NY: Co. Oswego; Trib. (was) of Catfish Creek, 1 mi NW of East Palermer. ? heavy / mud Nabungtaha
 cultivated / natural (clean) swamp country

1-1984, NY: Co. Oswego; Catfish Creek at N of Palermer, 2 mi AT = 24 3/4 / 0c at WT = 24 1/4 / 1:30 pm ed +

1-1984, NY: Co. Oswego; Catfish Creek at N of Palermer, 2 mi AT = 24 3/4 / 0c at WT = 24 1/4 / 1:30 pm ed +
 202 deep / coarse sand, small's four much wood debris

NY: Co. Oswego; Groundstone at rd #41, and #28, 4 mi SW of Palermer, AT = 24 3/4 / 0c at WT = 25 3/4 / 3:15 pm ed +
 1994200: SCAPED, good's four / coarse sand

NY: Co. Oswego; Groundstone at rd #41, and #28, 4 mi SW of Palermer, AT = 24 3/4 / 0c at WT = 25 3/4 / 3:15 pm ed +
 1994200: SCAPED, good's four / coarse sand

NY: Co. Oswego; Groundstone at rd #41, and #28, 4 mi SW of Palermer, AT = 24 3/4 / 0c at WT = 25 3/4 / 3:15 pm ed +
 1994200: SCAPED, good's four / coarse sand

NY: Co. Oswego; Groundstone at rd #41, and #28, 4 mi SW of Palermer, AT = 24 3/4 / 0c at WT = 25 3/4 / 3:15 pm ed +
 1994200: SCAPED, good's four / coarse sand

COANN TUES, July 24, 1984, NY: Co. Oswego, Little Sandy Creek, AT = 24 1/4 / 0c at WT = 24 1/2 / 4:30 pm ed +
 #30 (31) at Academy St (Street)

TUES, July 24, 1984, NY: Co. Oswego, Little Sandy Creek, AT = 24 1/4 / 0c at WT = 24 1/2 / 4:30 pm ed +
 #30 (31) at Academy St (Street)

TUES, July 24, 1984, NY: Co. Jefferson; Little Sandy Creek at rd #193, AT = 24 / 23 3/4 / 0c WT = 28 3/4 / 27 3/4
 Ellisburg.

TUES, July 24, 1984, NY: Co. Hamilton; Rock River, AT = 19 3/4 / 0c at 12:45 pm WT = 22 7/8 = d +
 100 yds below outlet of Lake Ontario at rd #28 = 3 mi SW of Blue Mountain (town)

WED, July 25, 1984, NY: Co. Hamilton; Rock River, AT = 19 3/4 / 0c at 12:45 pm WT = 22 7/8 = d +
 100 yds below outlet of Lake Ontario at rd #28 = 3 mi SW of Blue Mountain (town)

WED, July 25, 1984, NY: Co. Hamilton; Rock River, AT = 19 3/4 / 0c at 12:45 pm WT = 22 7/8 = d +
 100 yds below outlet of Lake Ontario at rd #28 = 3 mi SW of Blue Mountain (town)

WED, July 25, 1984, NY: Co. Hamilton; Rock River, AT = 19 3/4 / 0c at 12:45 pm WT = 22 7/8 = d +
 100 yds below outlet of Lake Ontario at rd #28 = 3 mi SW of Blue Mountain (town)

WED, July 25, 1984, NY: Co. Hamilton; Rock River, AT = 19 3/4 / 0c at 12:45 pm WT = 22 7/8 = d +
 100 yds below outlet of Lake Ontario at rd #28 = 3 mi SW of Blue Mountain (town)

WED, July 25, 1984, NY: Co. Hamilton; Rock River, AT = 19 3/4 / 0c at 12:45 pm WT = 22 7/8 = d +
 100 yds below outlet of Lake Ontario at rd #28 = 3 mi SW of Blue Mountain (town)

WED, July 25, 1984, NY: Co. Hamilton; Rock River, AT = 19 3/4 / 0c at 12:45 pm WT = 22 7/8 = d +
 100 yds below outlet of Lake Ontario at rd #28 = 3 mi SW of Blue Mountain (town)

COANN TUES, July 24, 1984, NY: Co. Oswego, Little Sandy Creek, AT = 24 1/4 / 0c at WT = 24 1/2 / 4:30 pm ed +
 #30 (31) at Academy St (Street)

TUES, July 24, 1984, NY: Co. Jefferson; Little Sandy Creek at rd #193, AT = 24 / 23 3/4 / 0c WT = 28 3/4 / 27 3/4
 Ellisburg.

TUES, July 24, 1984, NY: Co. Hamilton; Rock River, AT = 19 3/4 / 0c at 12:45 pm WT = 22 7/8 = d +
 100 yds below outlet of Lake Ontario at rd #28 = 3 mi SW of Blue Mountain (town)

WED, July 25, 1984, NY: Co. Hamilton; Rock River, AT = 19 3/4 / 0c at 12:45 pm WT = 22 7/8 = d +
 100 yds below outlet of Lake Ontario at rd #28 = 3 mi SW of Blue Mountain (town)

WED, July 25, 1984, NY: Co. Hamilton; Rock River, AT = 19 3/4 / 0c at 12:45 pm WT = 22 7/8 = d +
 100 yds below outlet of Lake Ontario at rd #28 = 3 mi SW of Blue Mountain (town)

WED, July 25, 1984, NY: Co. Hamilton; Rock River, AT = 19 3/4 / 0c at 12:45 pm WT = 22 7/8 = d +
 100 yds below outlet of Lake Ontario at rd #28 = 3 mi SW of Blue Mountain (town)

WED, July 25, 1984, NY: Co. Hamilton; Rock River, AT = 19 3/4 / 0c at 12:45 pm WT = 22 7/8 = d +
 100 yds below outlet of Lake Ontario at rd #28 = 3 mi SW of Blue Mountain (town)

WED, July 25, 1984, NY: Co. Hamilton; Rock River, AT = 19 3/4 / 0c at 12:45 pm WT = 22 7/8 = d +
 100 yds below outlet of Lake Ontario at rd #28 = 3 mi SW of Blue Mountain (town)

WED, July 25, 1984, NY: Co. Hamilton; Rock River, AT = 19 3/4 / 0c at 12:45 pm WT = 22 7/8 = d +
 100 yds below outlet of Lake Ontario at rd #28 = 3 mi SW of Blue Mountain (town)

WED, July 25, 1984, NY: Co. Hamilton; Rock River, AT = 19 3/4 / 0c at 12:45 pm WT = 22 7/8 = d +
 100 yds below outlet of Lake Ontario at rd #28 = 3 mi SW of Blue Mountain (town)

July 24, 1984. NY: Co. Oswego; small tub of Lakota (shells)
at 10:30 AM, Fruit Vally,

AT = 22 1/4 / 00 at
WT = 23 9/32 ed+

Stop #204
Two vials
ENA-1984
#32
#33

TUES, July 24, 1984 NY: Co. Oswego, Little Sandy Creek
0.3 holes E of Sandy Creek (top)
of Sanderson Rd. 1.7

AT = 24 1/4 / 00 at
WT = 24 1/2 / 300 ed+

Stop #205

TUES., July 24, 1984. NY: Co. Jefferson
Little Sandy Creek at
Ellisburg.

Two vials
ENA-1984
#32
#33

848205

People - 2
l. out. 30 (NON fact)

at least
another vial

big
bed rock / ope

? Peleg
Stenals 125
(158)

Saw a mouse

Stop #206

WED. JUL 25, 1984. NY: Co. Hamilton; Rock River

devel / coarse sand, small's four
much wood chips

AT = 24 3/4 / 00 at
WT = 25 3/4 / 3:15 pm
ed+

Stop #208
Two vials
ENA-1984
#39
#40

848207 of CPTA

thatched a R. was taking here.
I covered up, I. sh. dy. upper rocks / boulders.
263, 3 1/2

NY: Co. Oswego; Grindstone Creek #41,
and #28,
4 miles SW of Pulaski
SCAPEL.
good's four / coarse sand

WED. JUL 25, 1984 NY: S. A. Edison; New Haven River
+ WINE of Middlebury, at River Rd.

AT = 21 1/2 / 00 at
WT = 22 1/2 / 6:15 pm
ed+

848208
all
Municipal gravel bed co. continued
but naturally worn / flatter / with
no stores in stream

84.3 1/2

530	6:15
AT 24	23 3/4
WT 28 3/4	27 3/4

19 3/4 / 00 at 12:45 pm
= 22 7/8 = d+

#37	#38
270	215
AT = 24 1/4	30



RIFFLE BEETLES

600,000 SPECIMENS



***Stenelmis* spp.**



***Stenelmis* spp.**

GENUS | ACCEPTED

Stenelmis Dufour, 1835

Published in: Ann. Sci. Nat. [2] (Zool.), 3, 158.

OVERVIEW

12,035 OCCURRENCES

184 SPECIES

301 OCCURRENCE RECORDS WITH IMAGES

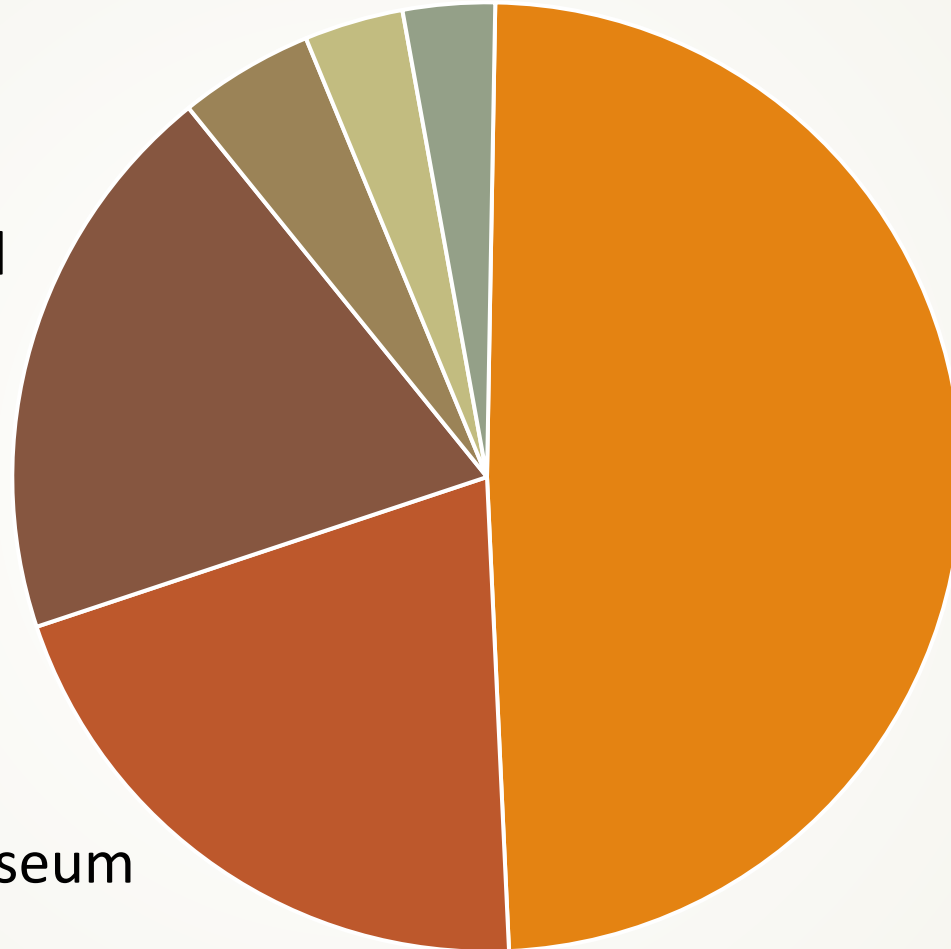
[SEE GALLERY](#)

4,437 GEOREFERENCED RECORDS



Snow Entomological
Collection

Sam Noble Museum



Field Museum

Acknowledgements

Digitization team –

Melissa Sadir

Allie Stone

Ella Jacobs

Robin Delapena

Mandy Davidson

Cassidy Keys

Anonymous donor who funded this project

The Field Museum

InvertEBase project

IDigBio and Entomological Collections Network



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Science Visiting Scholarships

Visiting Scholarships provide opportunities for scientists who wish to use The Field Museum's collections. Funds are earmarked for travel and for subsistence while visitors are conducting their research.

Online Application

If you have a problem with the online application system that is not addressed by their [help page](#), please [email us](#).

- **Applications open:** November 1, 2017, 12:01am CST
- **Application deadline:** December 1, 2017, 11:59pm CST
- **Letters of reference deadline:** December 1, 2017
- **Applicant awards announced:** January 2018
- **Awardee accept/decline deadline:** January 25, 2018
- **Earliest start date:** February 20, 2018

Applications for Visiting Scholarships are considered once a year. The annual deadline is December 1st. Proposals reviewed by the December 1st panel can be funded no sooner than the third week of the following February. Foreign scholars should allow appropriate time for visa considerations, and factor American taxes, visa expenses, and the cost of travel to and from the Museum into their proposed budget.

Sponsorship

Endorsed by a Field Museum sponsor. Applications without endorsements received by



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