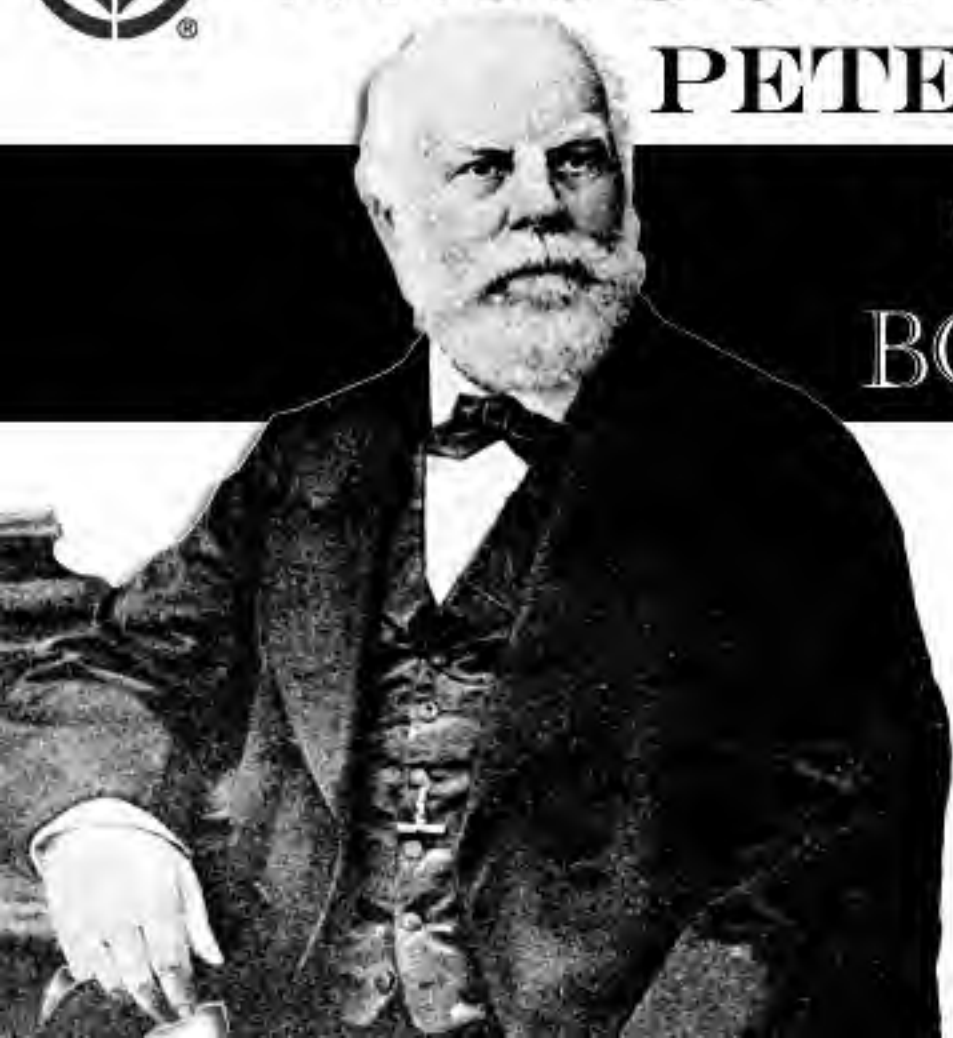




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BOTANICAL NOTEBOOKS

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Quercus agrifolia
Californ

Q. Emoryi
Arizona

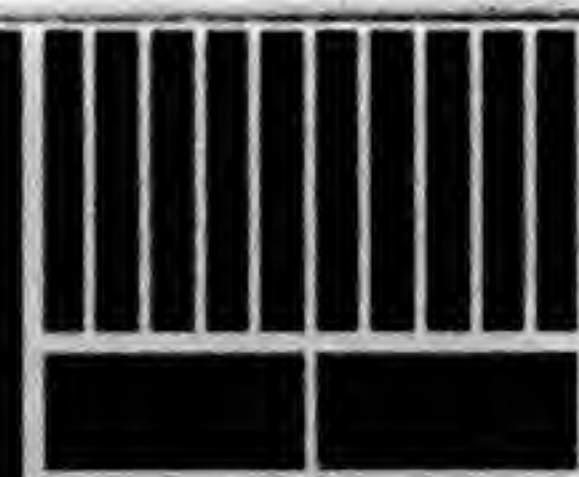
Q. prinus

S. Carolina

Febr 20 1880



x10



0 1 2 3 4 5 6 7 8 9 10

cm

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6238

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APOTHECARY.

No. 2600 Locle Ave., S. W. Cor. Jefferson Ave.

ST. LOUIS, MO.

R

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GEORGE ENGELMANN PAPERS



0 1 2 3 4 5 6 7 8 9 10

cm

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Quercus Catesbaei
Wright, Dr Wood

Nov 14 1822



x 10

cupule
as long as
stipes of Cotyledons



x 10



upper free part

lower attached part

abrupt ovules
about 3 lines below tip



0 1 2 3 4 5 6 7 8 9 10

cm

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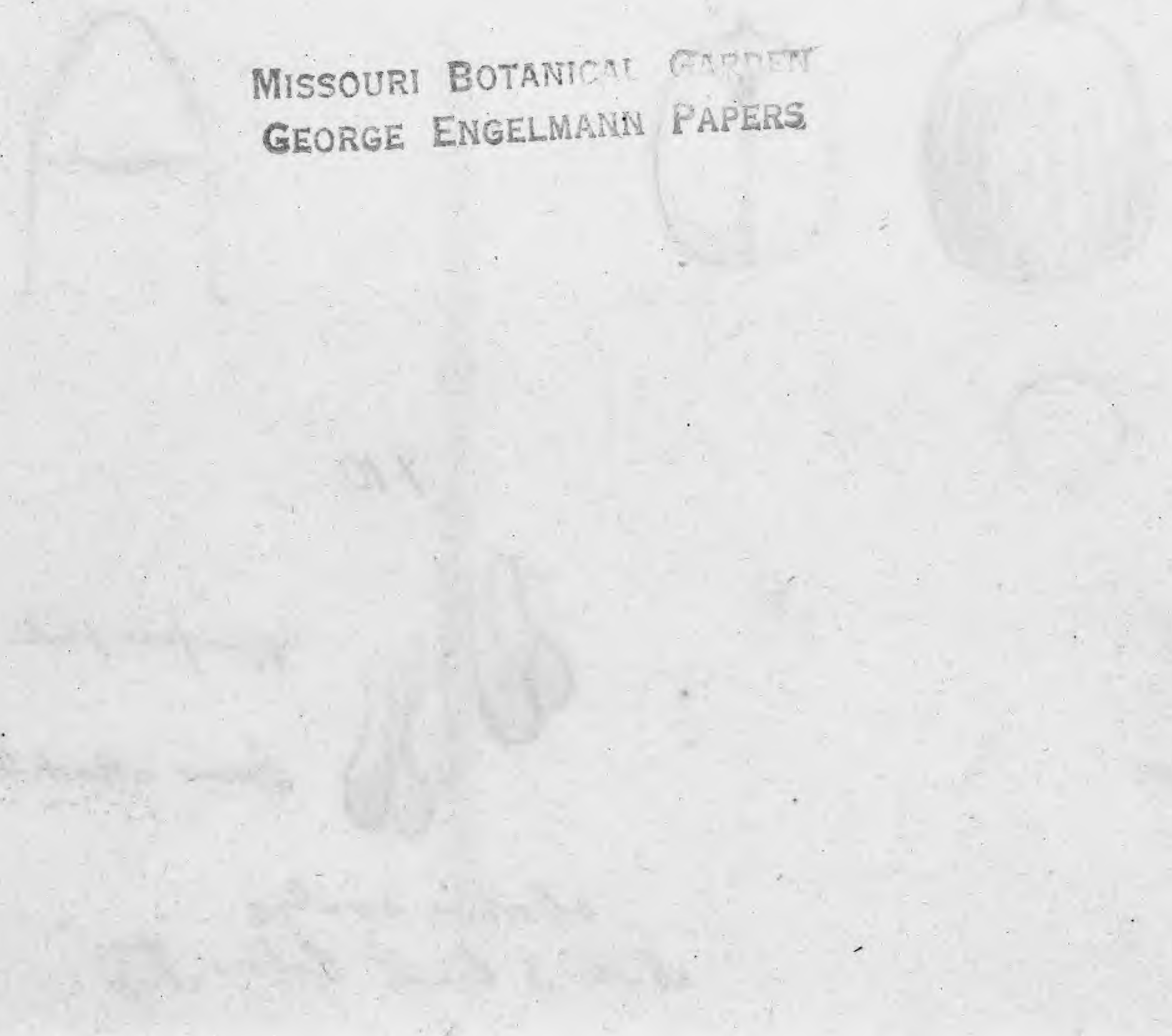
6239

Leitch & Corlies

DRUGGISTS

South-west
Corner Fifth and Market
Streets

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0 1 2 3 4 5 6 7 8 9 10

cm

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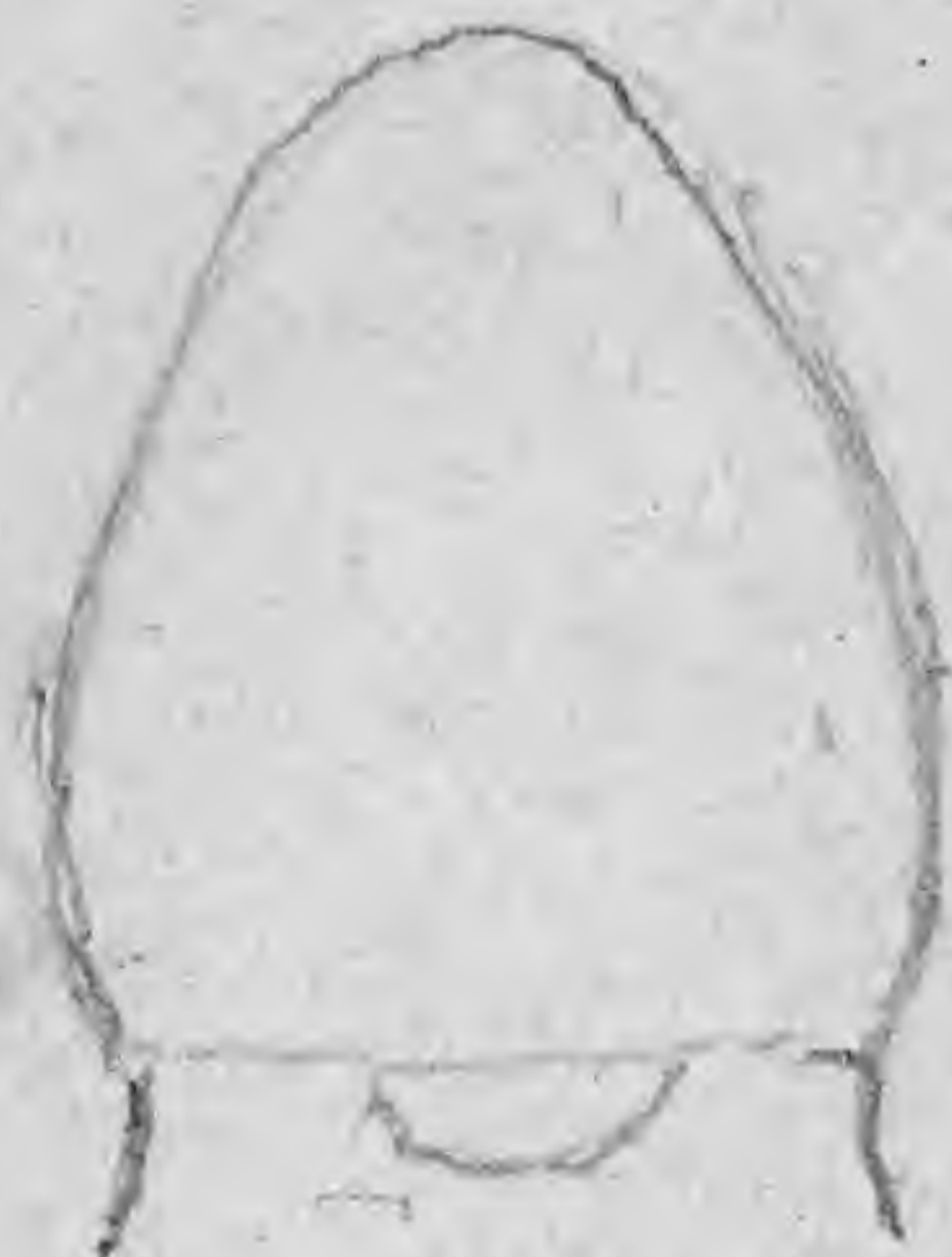
Quercus chrysolepis

Nov 22 1882

Ornith Oct 1882

acorn

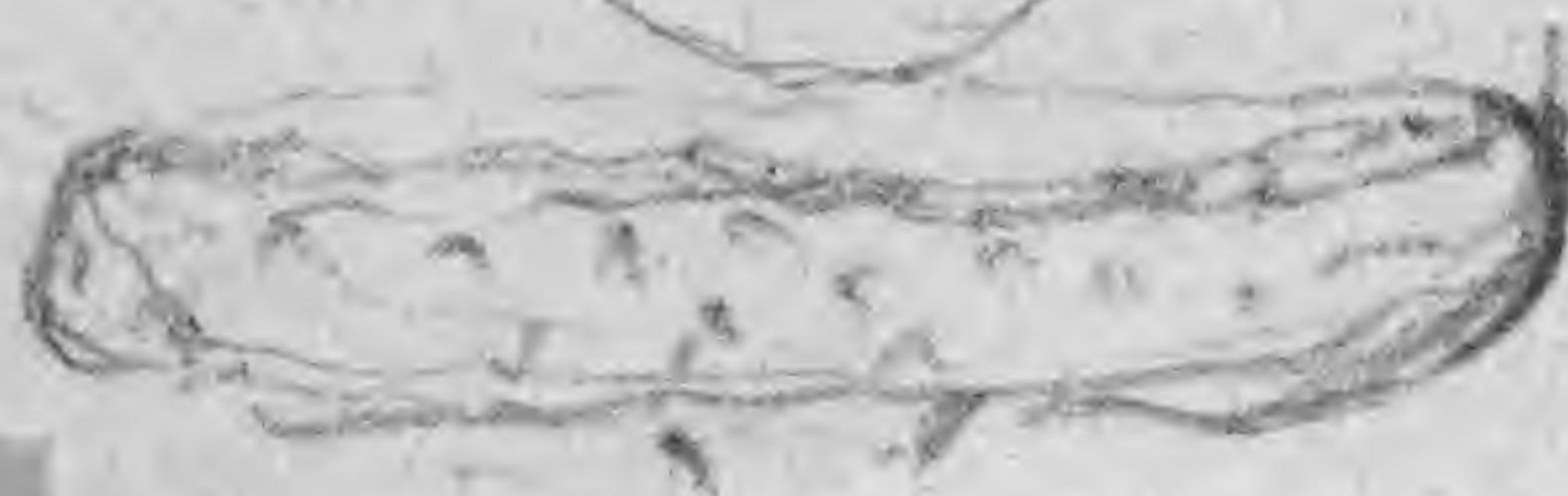
embryo



x10

stipes of Cotyledons
extremely short

4 abortive ovules
near top



cup



0 1 2 3 4 5 6 7 8 9 10

cm

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0 1 2 3 4 5 6 7 8 9 10

cm

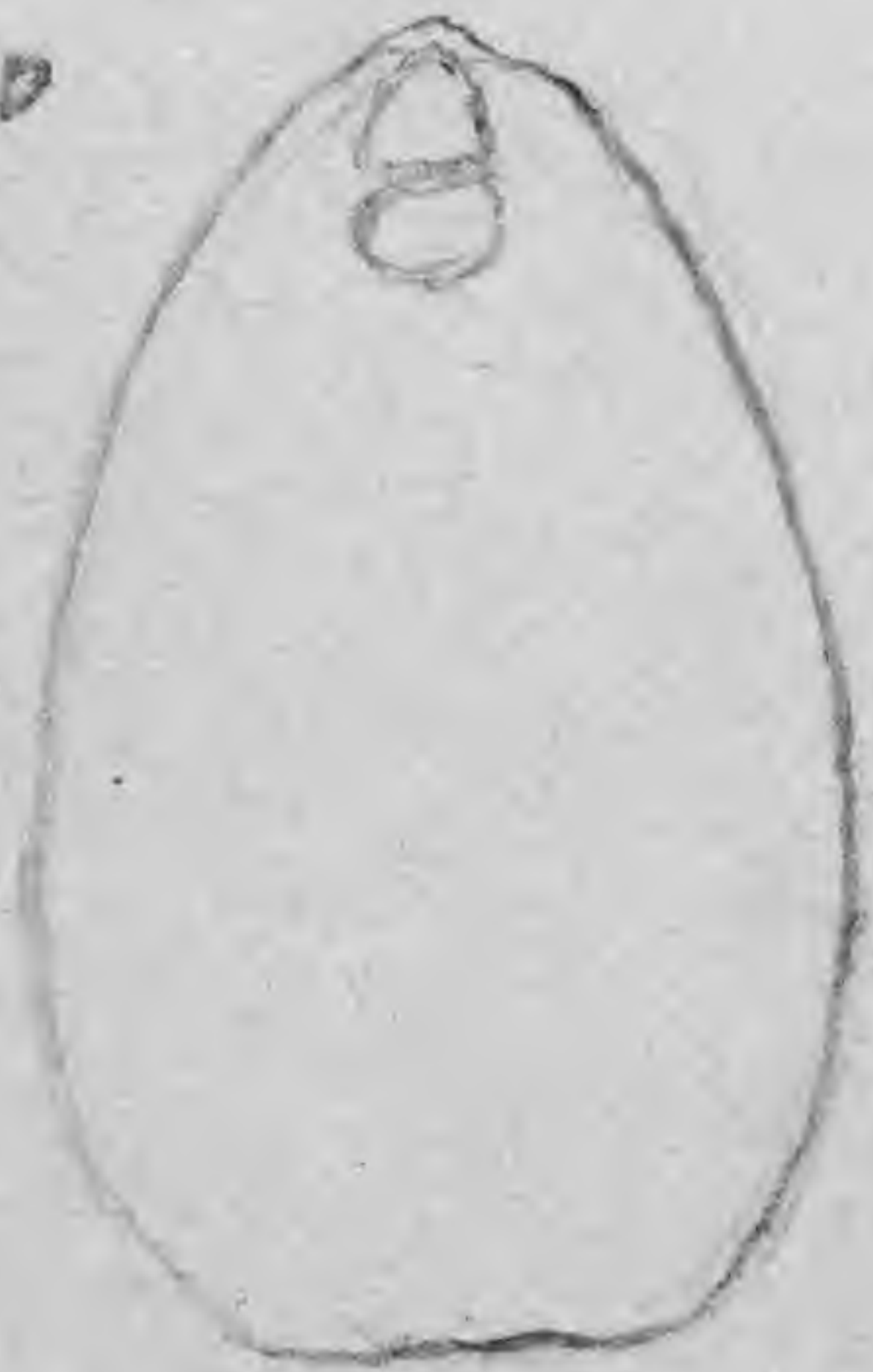
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Q. chrysolepis var. *cruciformula*
San Bernardino, California J. Parry

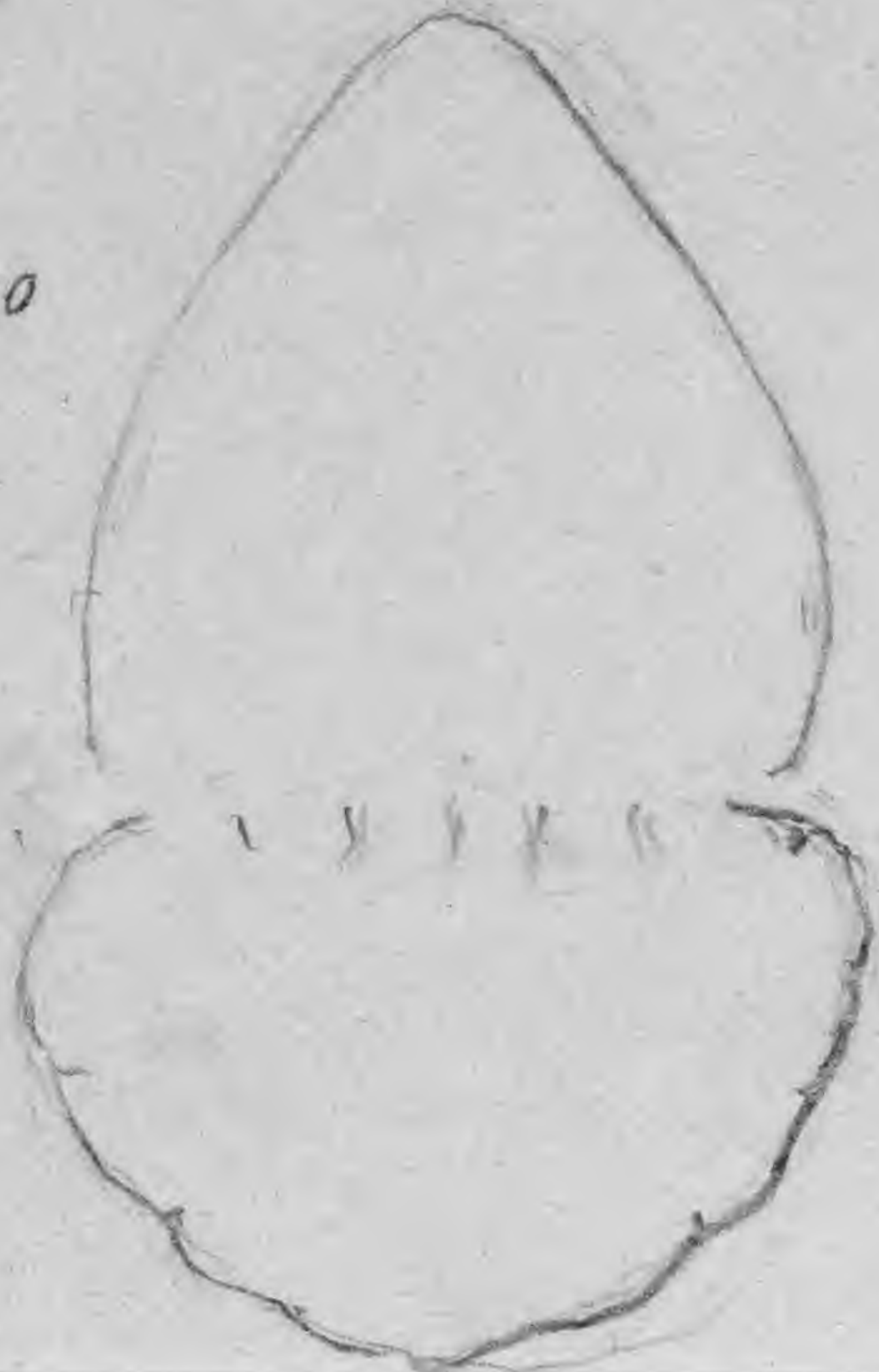
Febr 20
1880



Febr 22
1880



x 10



0 1 2 3 4 5 6 7 8 9 10

cm

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cm

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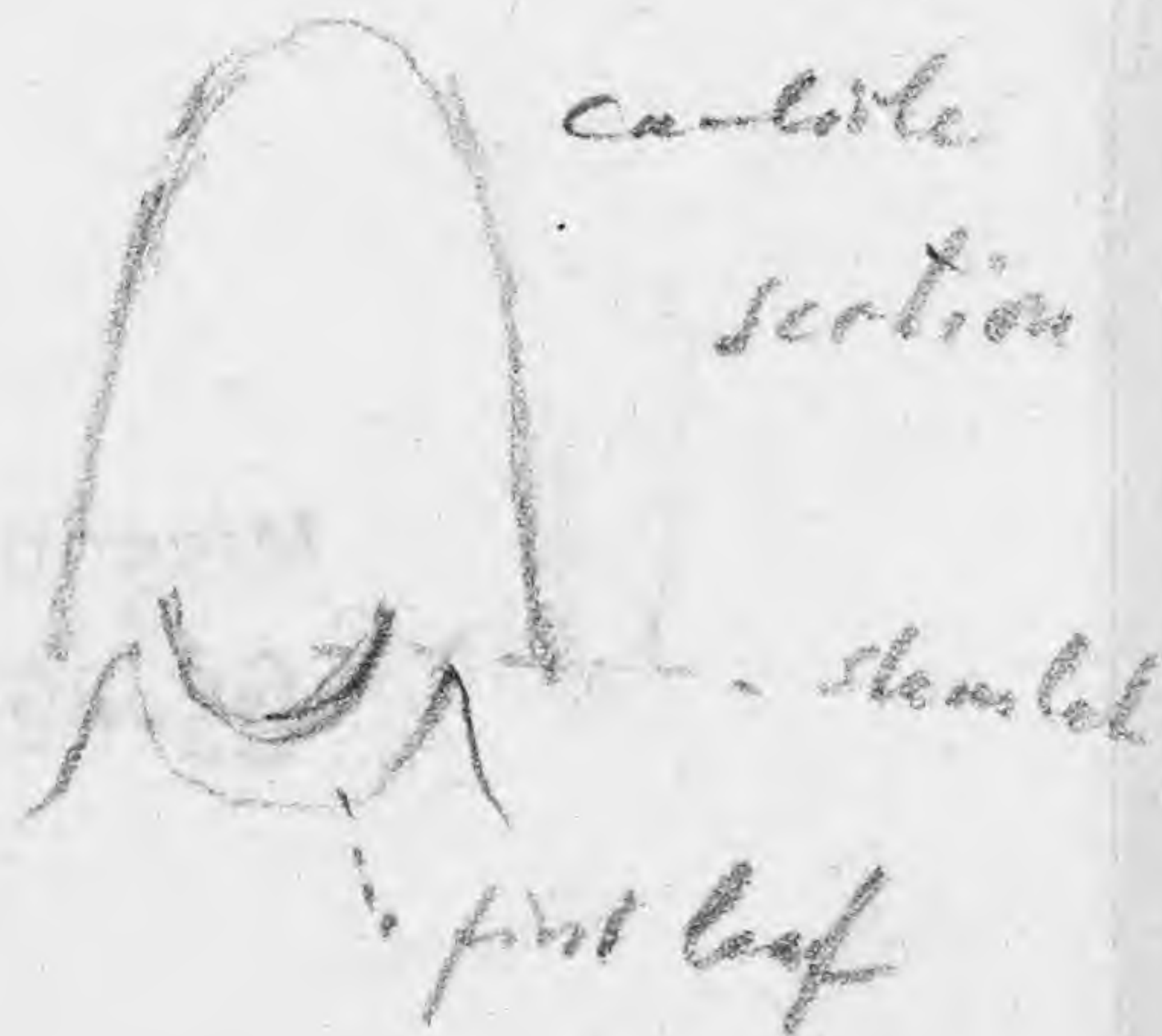
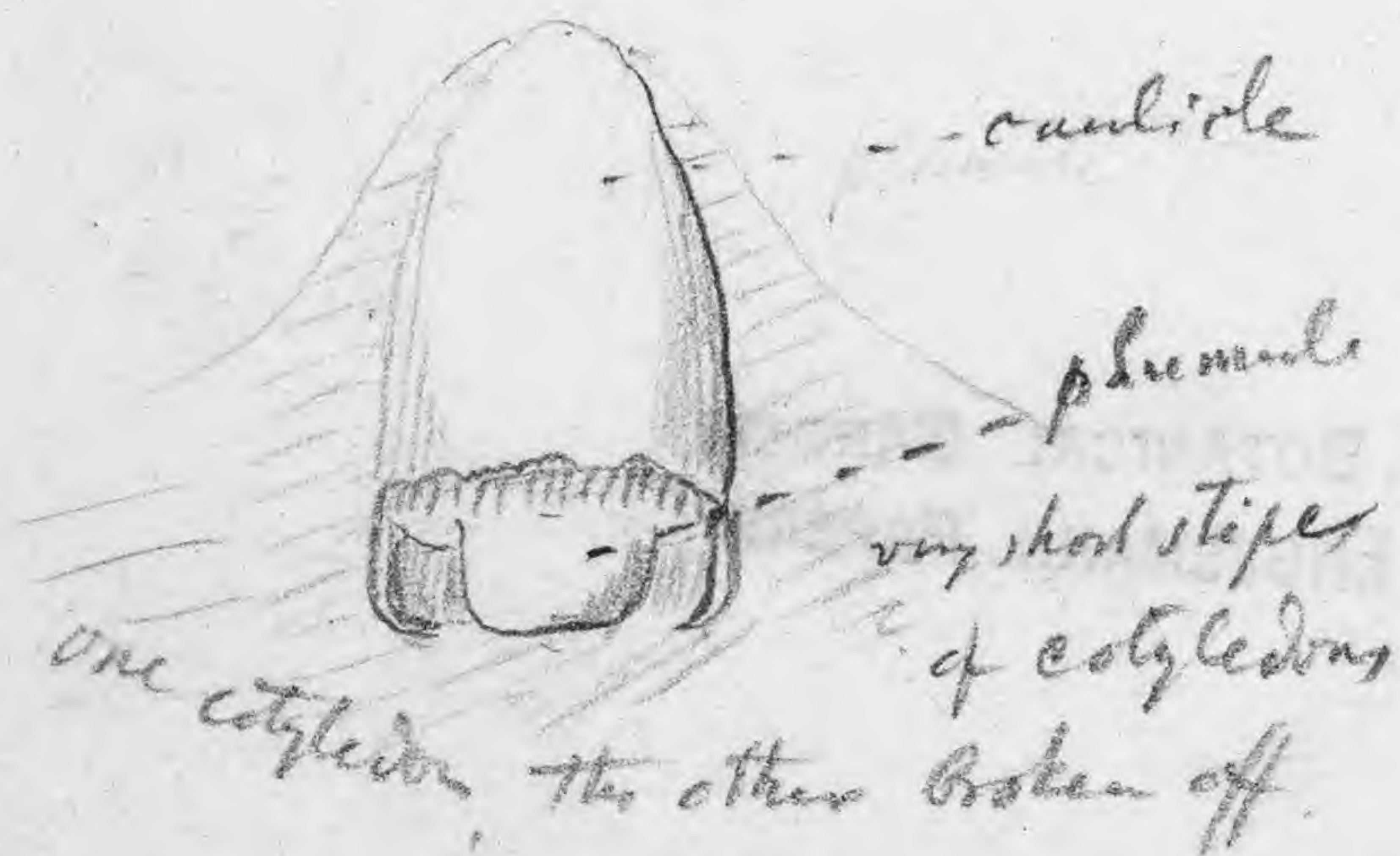
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Quercus coriacea!

Jan 31 1880

Massachusetts

x10

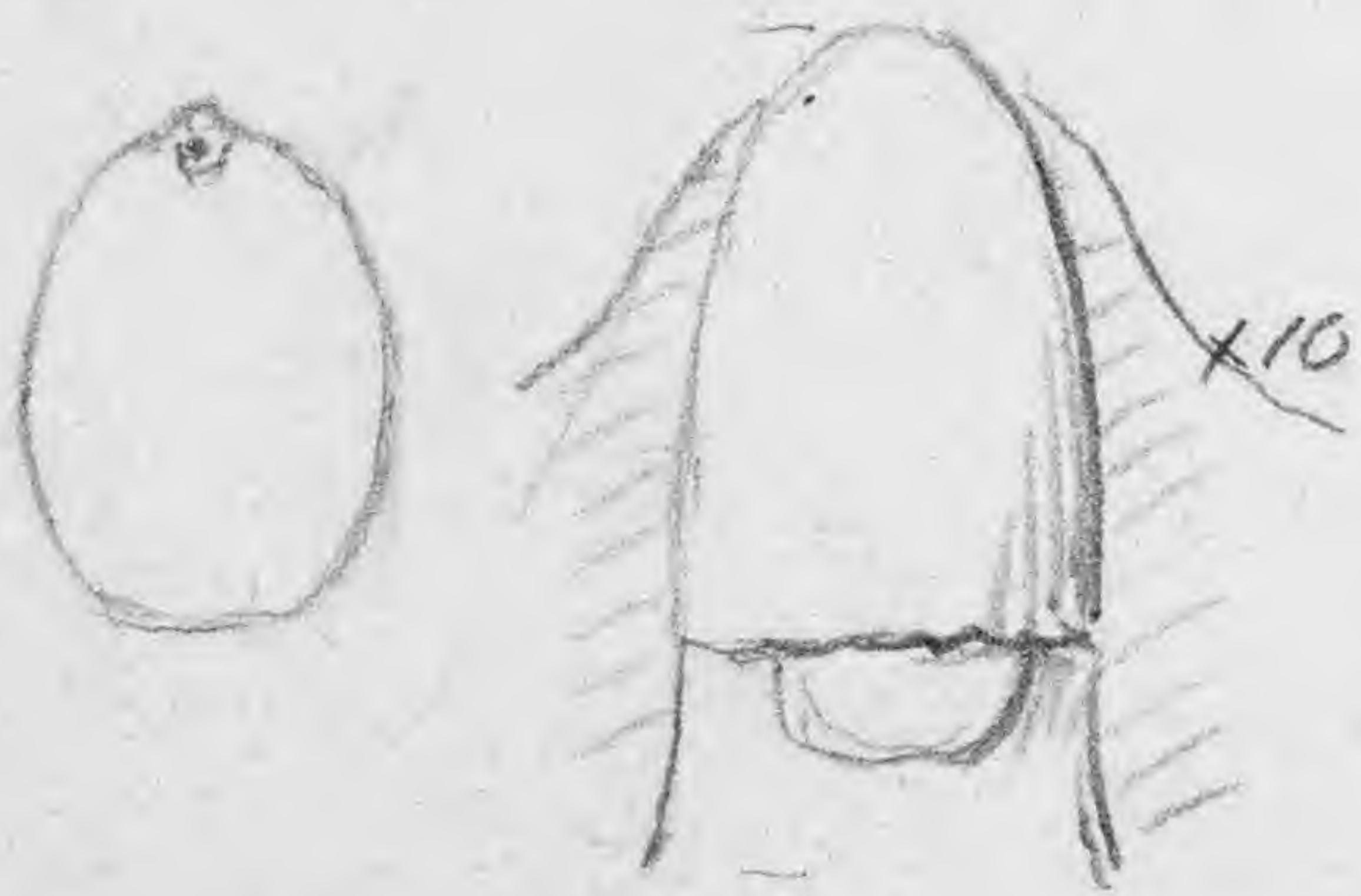


base of cotyledon not covering
candle completely

Febr 20 1880

Q. coriacea

Staring Rock, LaSalle 1878



0 1 2 3 4 5 6 7 8 9 10

cm

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ALEX. LEITCH
APOTHECARY & PHARMACEUTIST
COR. 4TH & OLIVE STS. ST. LOUIS.

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0 1 2 3 4 5 6 7 8 9 10

cm

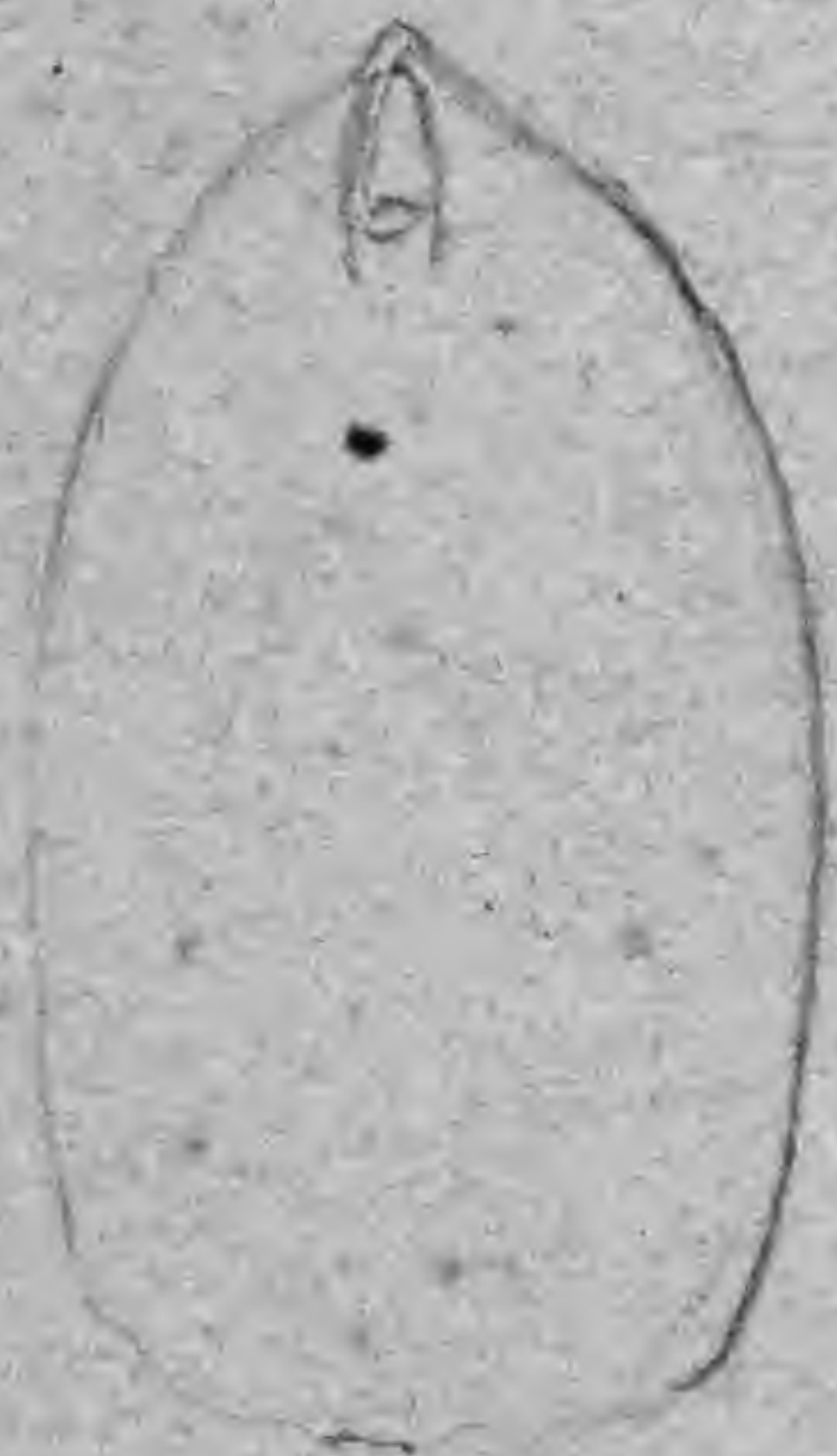
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Quercus densiflora
Calif

Febr 22
1880



x 10



possible!
this plumbe
color



0 1 2 3 4 5 6 7 8 9 10

cm

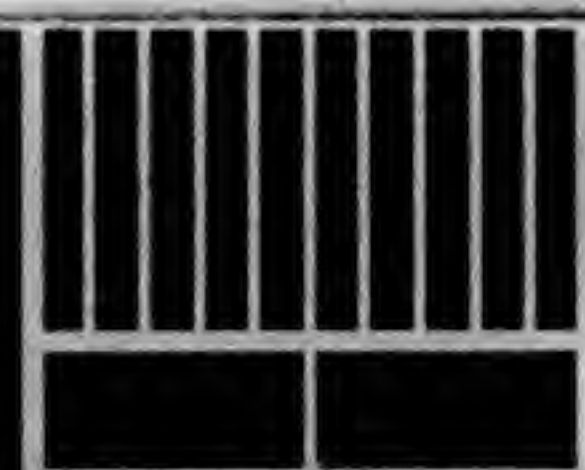
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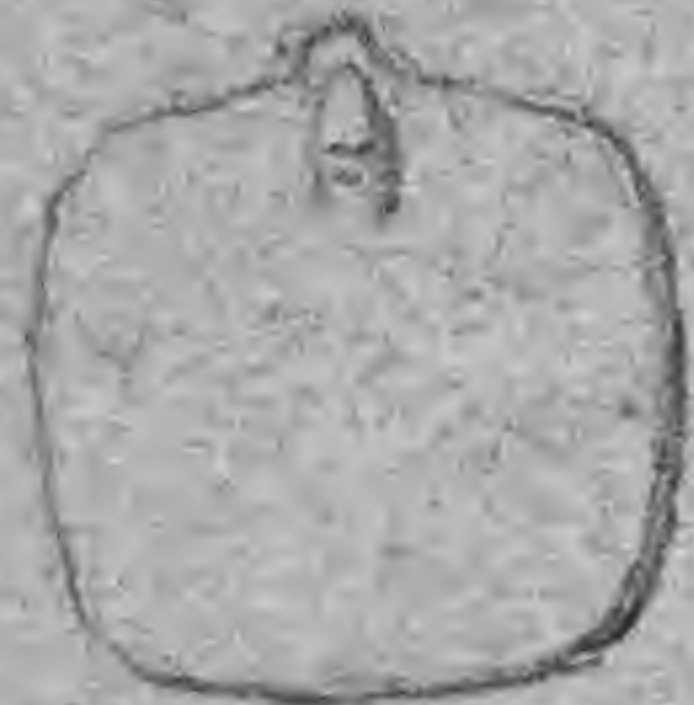
cm

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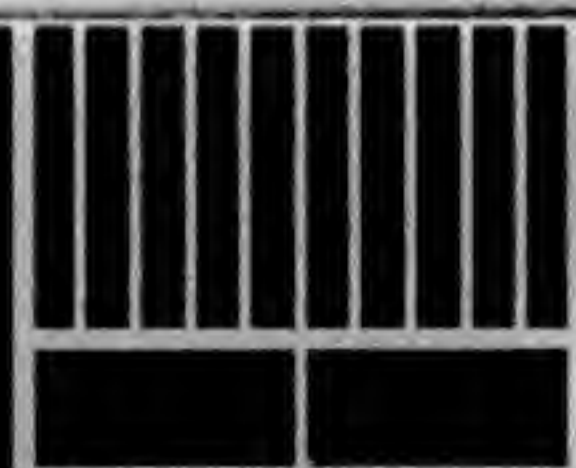
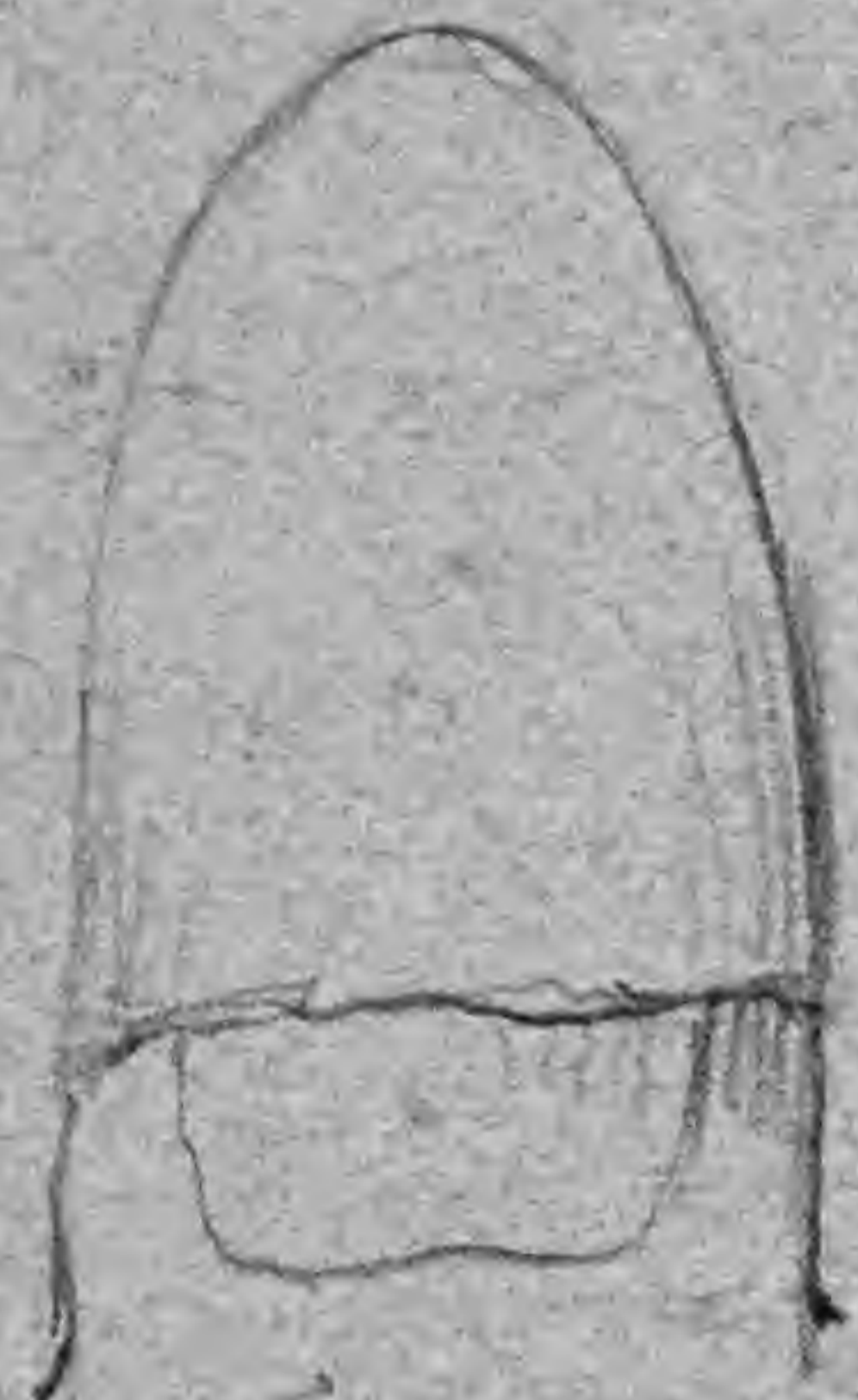


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g. heterophylla
Wilmington
Del
Febr 22 1830



x 10



0

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2

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10

cm

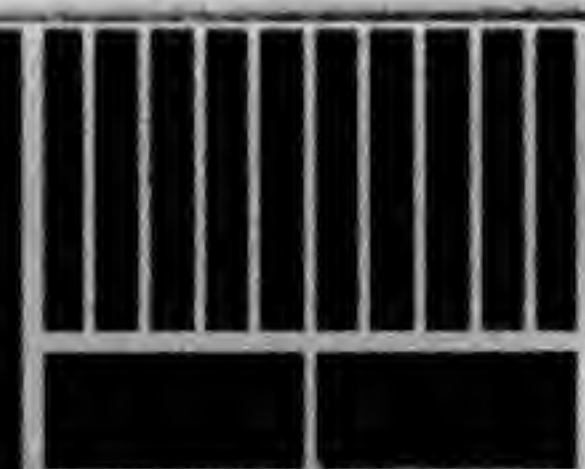
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cm

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Quercus Emoryi

Nov 1 1882

Lower California, south of Boundary Overthrust Oct 82

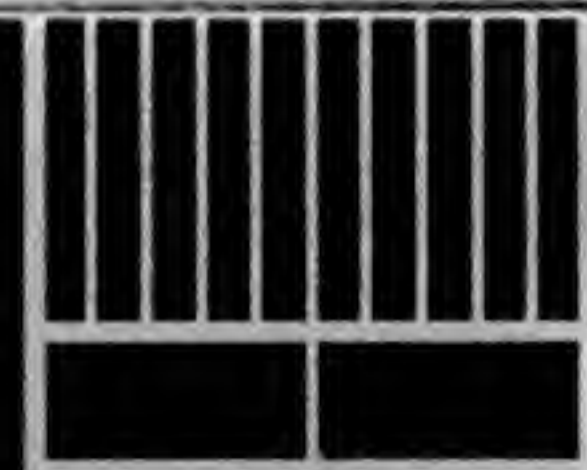


ovules basilar
1 ovule high up
on the side



x 10

capsule plumula
and style of Cotyled.



0 1 2 3 4 5 6 7 8 9 10

cm

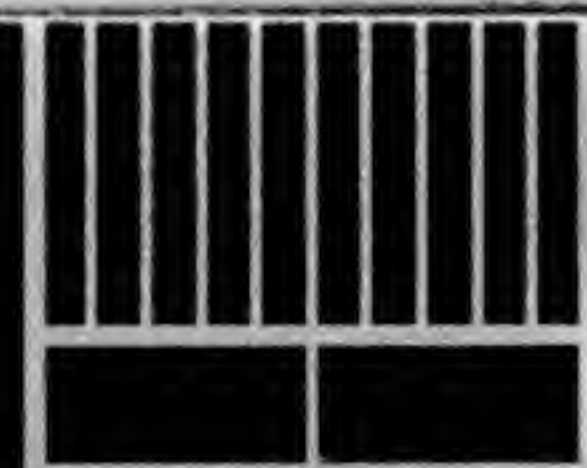
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0 1 2 3 4 5 6 7 8 9 10

cm

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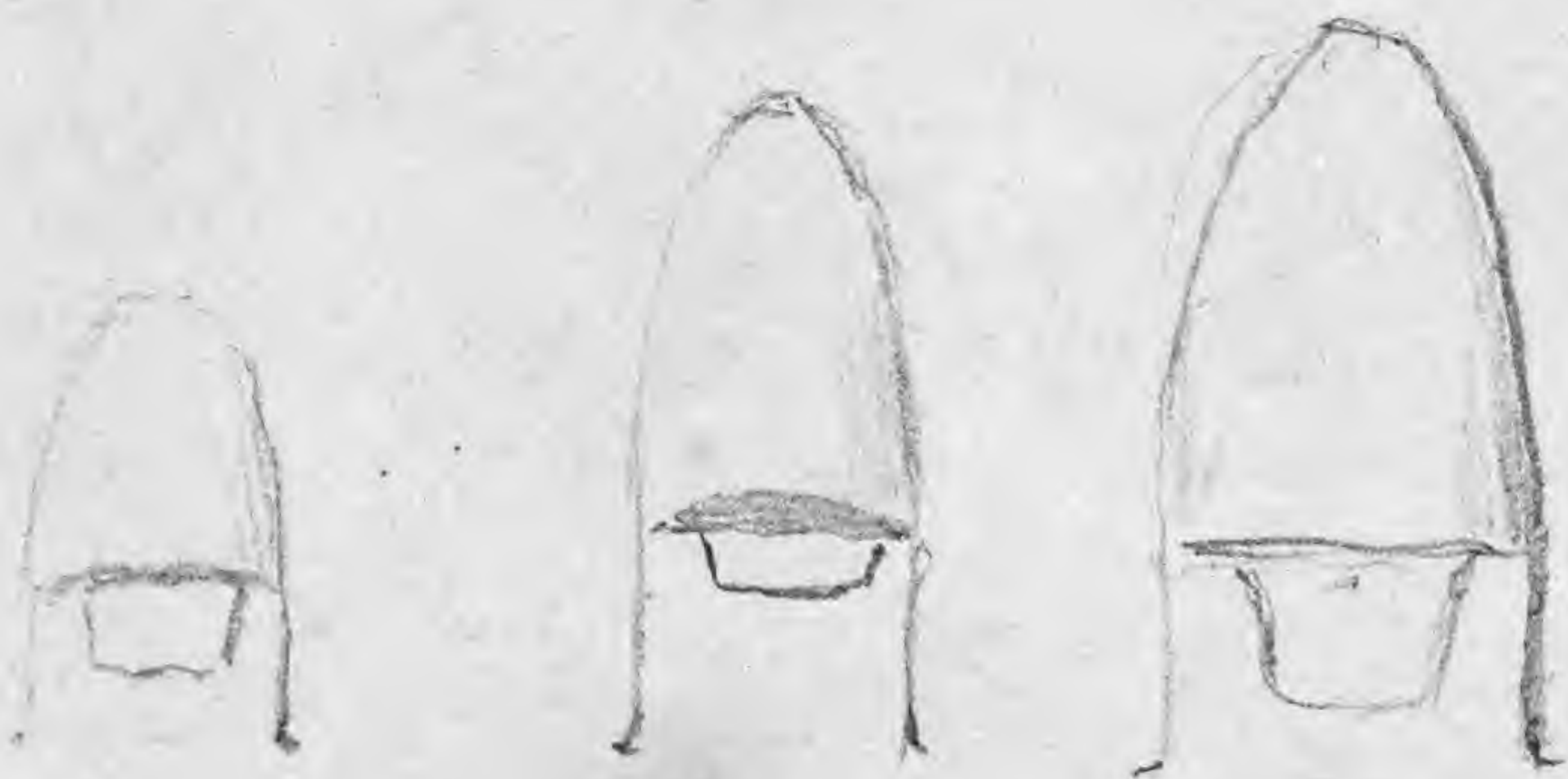
Quercus hypoleuca

Arizona, C. G. Bigelow 1881

Oct 16 1881



○ acorn
of acorn



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0 1 2 3 4 5 6 7 8 9 10

cm

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Leitch & Corlies

CORRIGANS

South West
Corner Fifth
and Market
Streets

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0 1 2 3 4 5 6 7 8 9 10

cm

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MISSOURI
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GARDEN

Febr 20 1820

Quercus nigra
St Louis

Q. imbricaria
St Louis

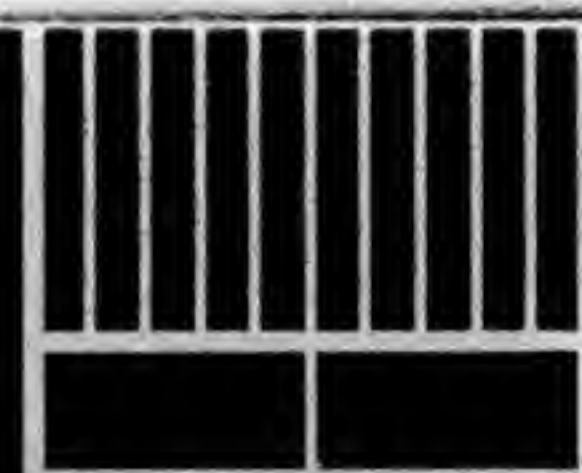
Q. ilicifolia
New Jersey



x 10



x 10



0

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cm

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GARDEN

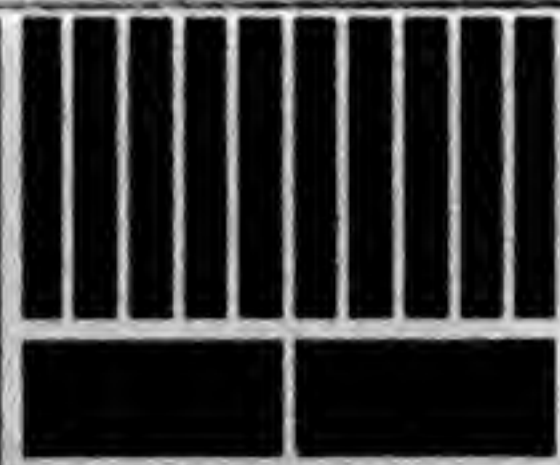
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cm

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Quercus laevis
at Clark Co
Ludwig's plantation Ill.

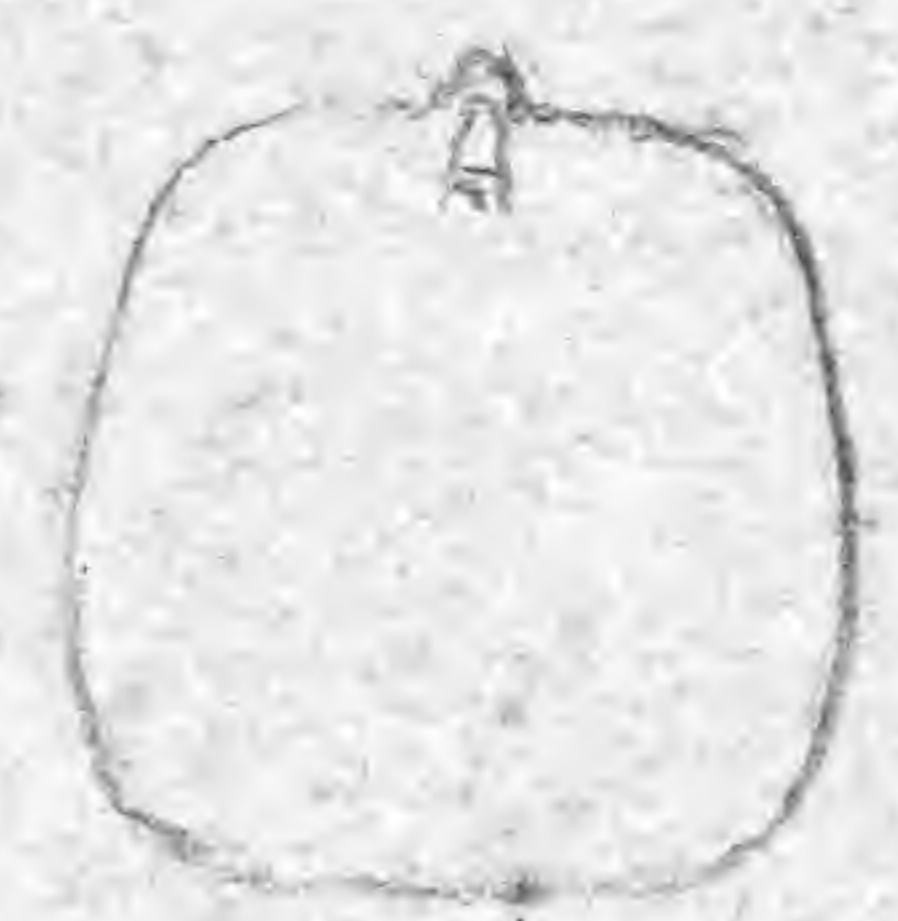


Q. laevis
Congressional garden
Washington



Febr 22 1880

Q. sinuata, South Carolina



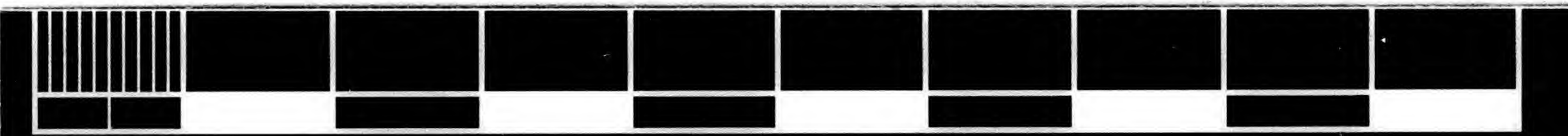
Cotyledons
somewhat adhering

Febr 22 1880

x 10



x 10



0 1 2 3 4 5 6 7 8 9 10

cm

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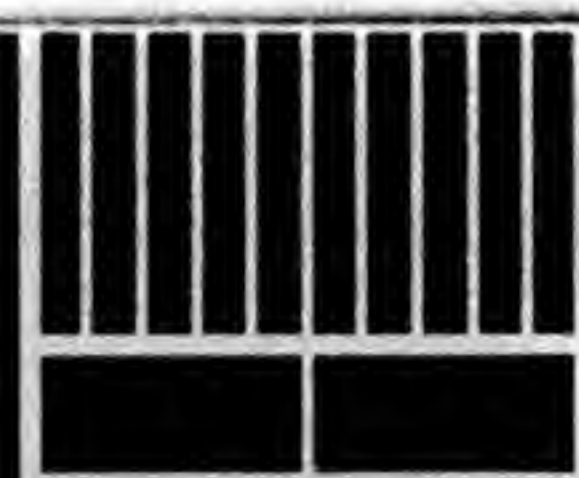
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0 1 2 3 4 5 6 7 8 9 10

cm

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Q. macrocarpa

St Louis

Febr 20 1880

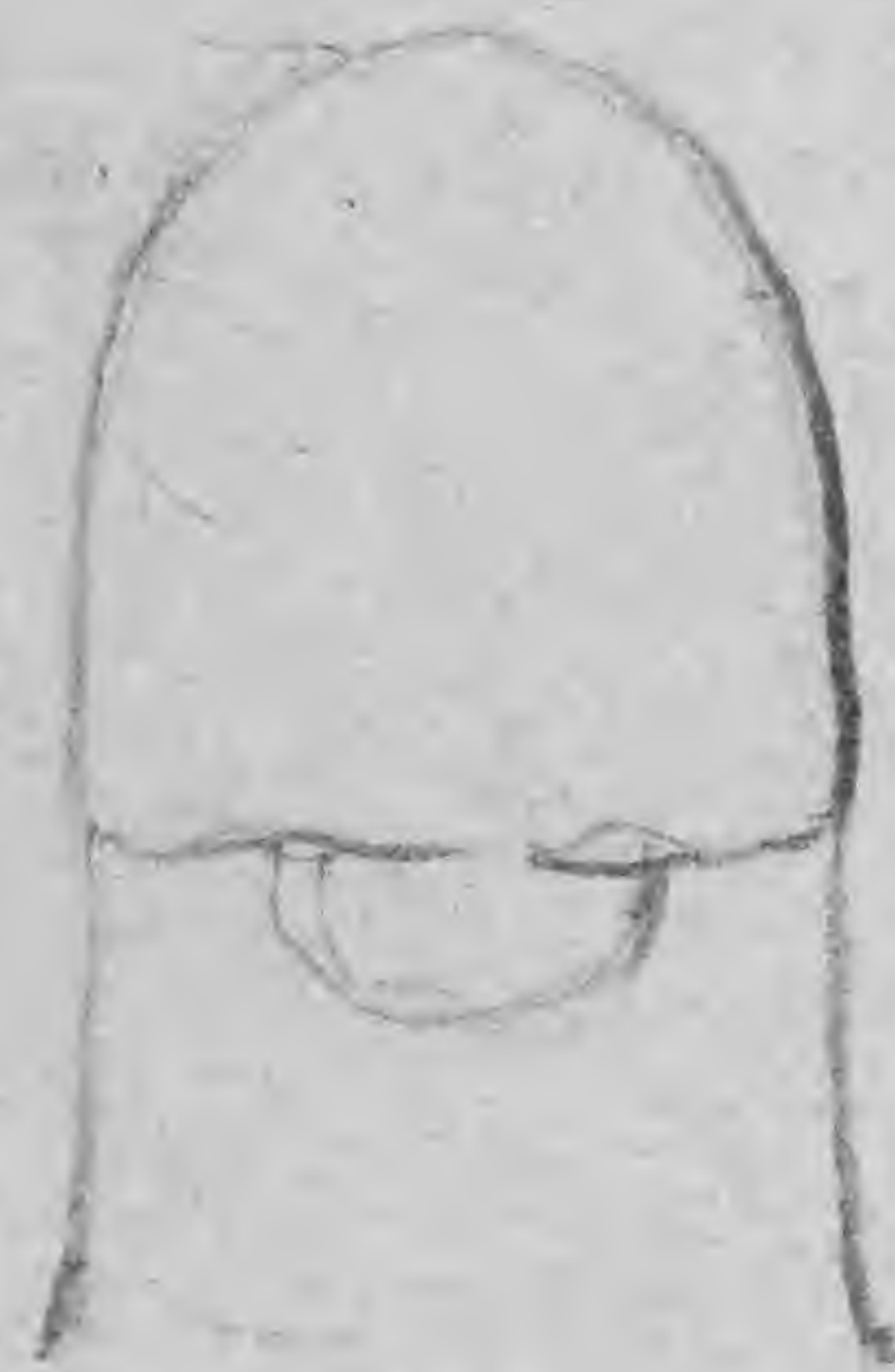
Q. macrocarpa

Bebb No 3

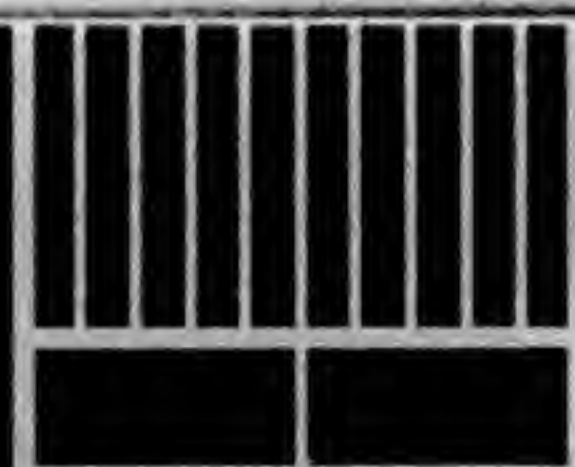


The only white oak with short
stripes of cotyledons

x10



x10



0 1 2 3 4 5 6 7 8 9 10

cm

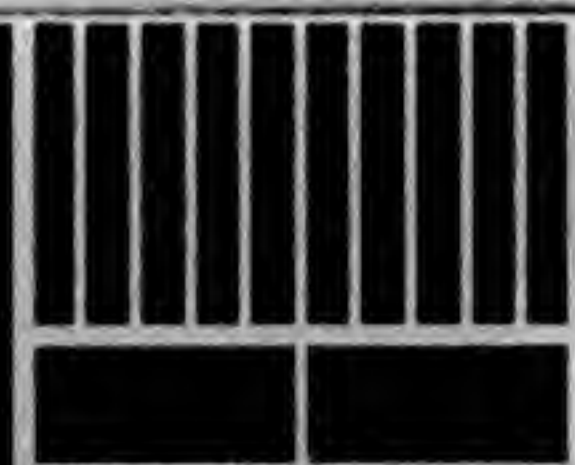
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0 1 2 3 4 5 6 7 8 9 10

cm

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GARDEN

Quercus Palustris
South of boundary Orontt in Oct 1882

Nov 1st 1882



position of 4 of
the 5 abortive ovules



no ovules
seen



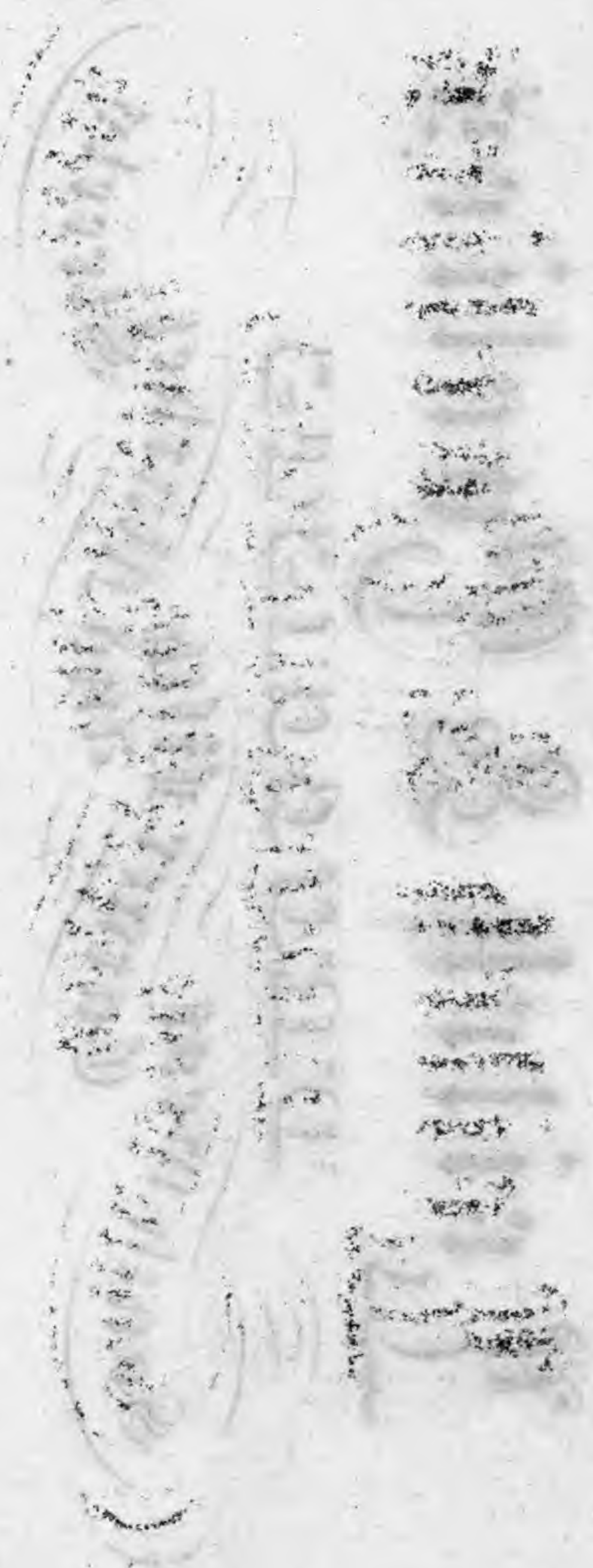
abortive
ovule
x10



bundles of vessels

cup densely
tomentose
inside

part of
attachment



0 1 2 3 4 5 6 7 8 9 10

cm

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GARDEN

6250

Leitch & Corlies

DRUGGISTS

South-west
Corner Fifth
and Market
Streets

MISSOURI BOTANICAL GARDEN
GEORGE ENGELMANN PAPERS



0 1 2 3 4 5 6 7 8 9 10

cm

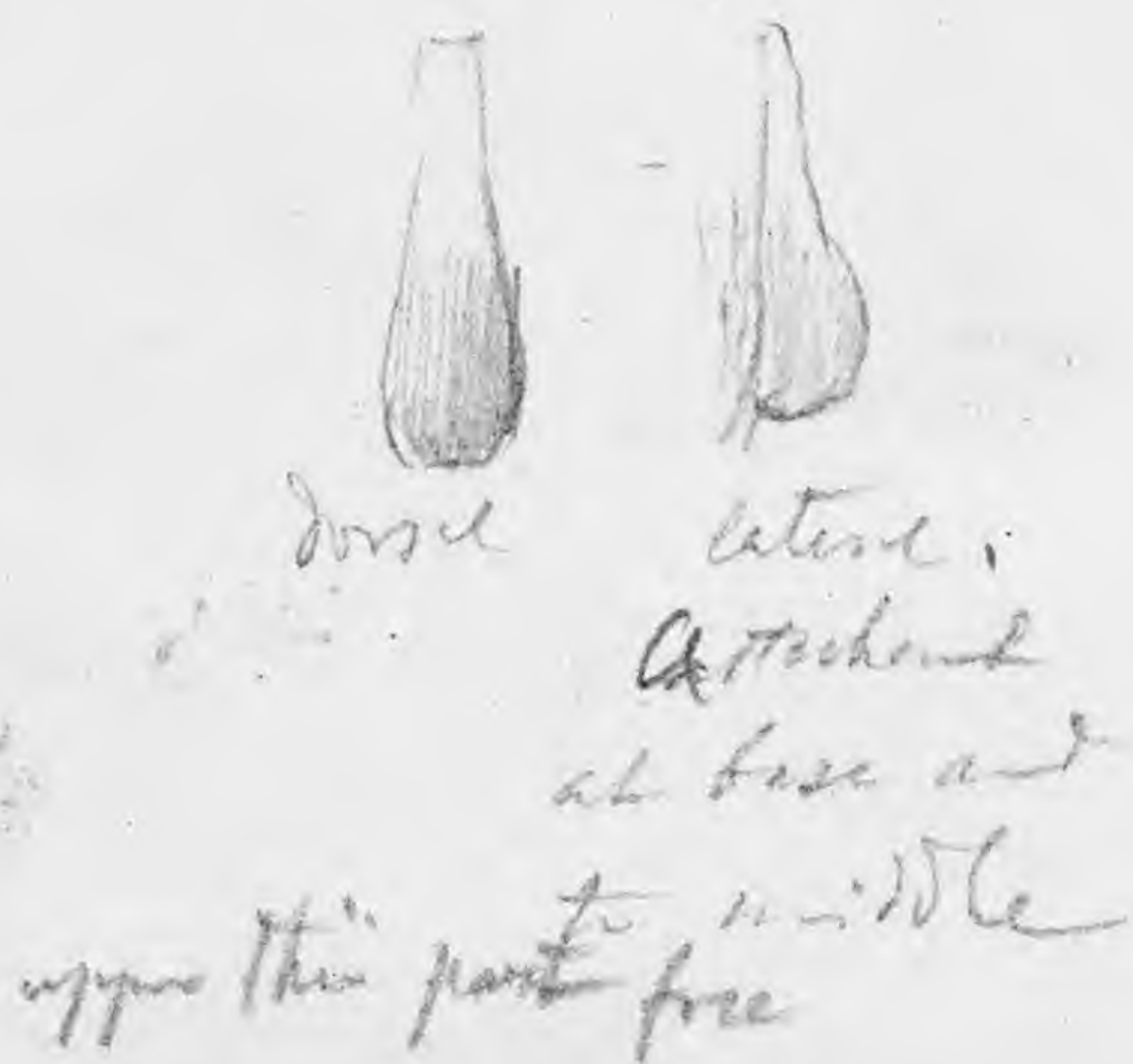
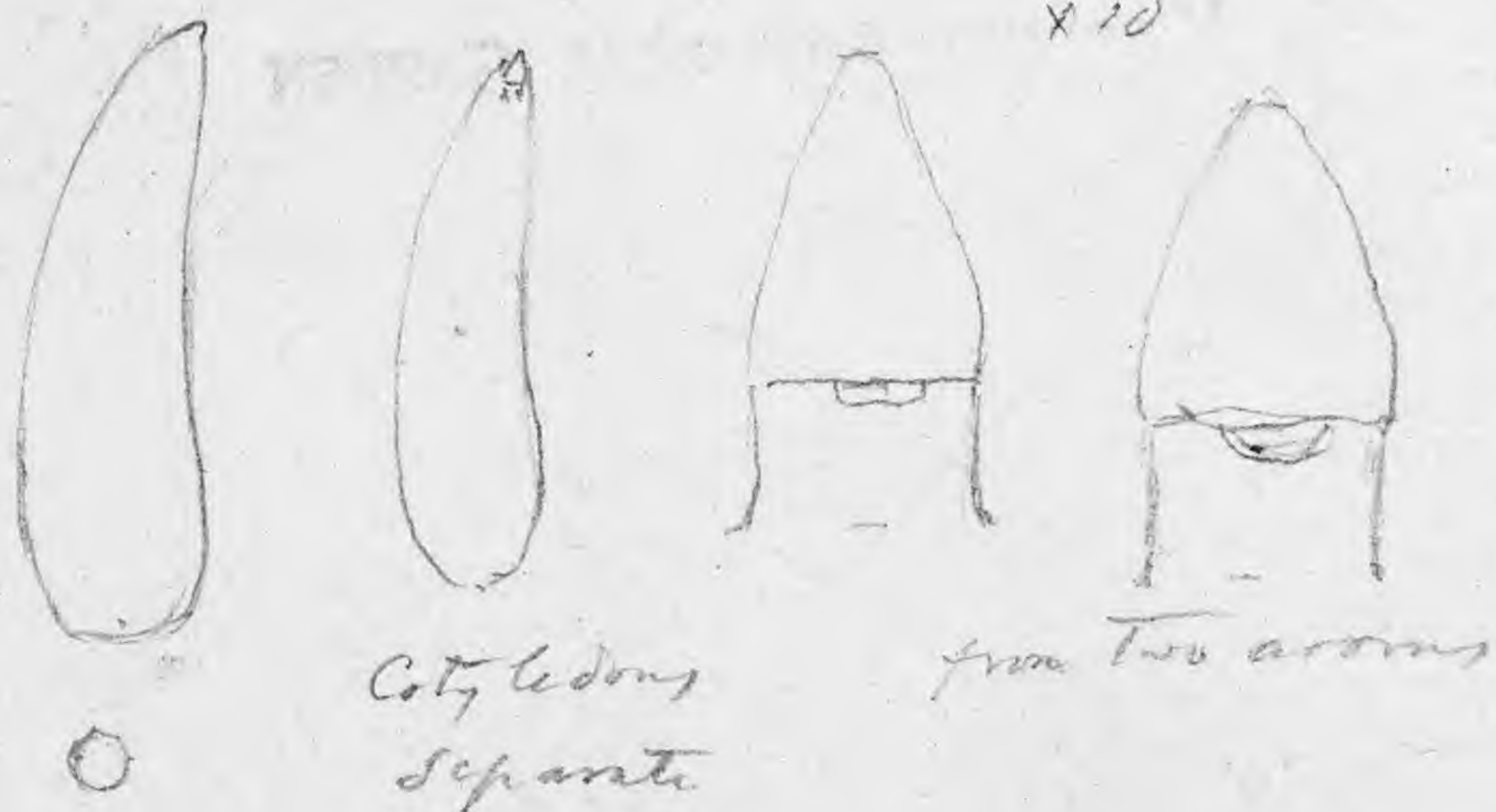
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GARDEN

Quercus pungens? *undulata* var?
Mohave Desert, Pringle Sept 1882

Nov 20 1882



Cotyledons separate
and thin slice short —
Therefore form of *undulata*

MISSOURI BOTANICAL GARDEN
GEORGE ENGELMANN PAPERS
NOV 20 1882



0 1 2 3 4 5 6 7 8 9 10

cm

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GARDEN

6251

Rith & **Co**llie

DRUGGISTS

South-west
Corner Fifth
and Market
Streets

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0 1 2 3 4 5 6 7 8 9 10

cm

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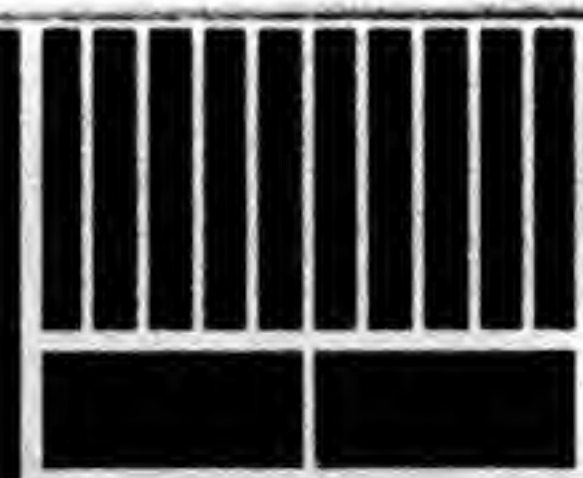
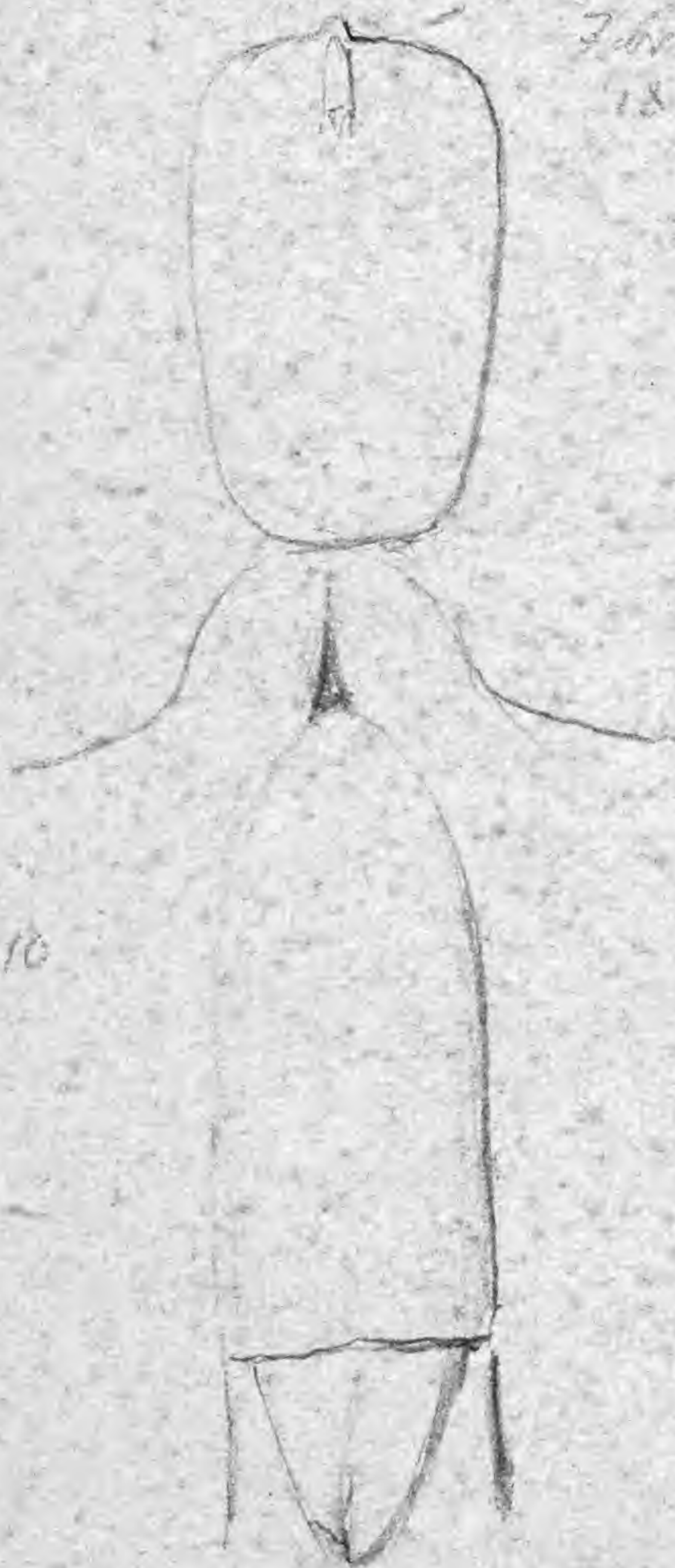
Quercus pedunculata
cult Boston

Genexa

sessiliflora
Carlsruh

Febr 25 1880

Febr 22
1880



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cm

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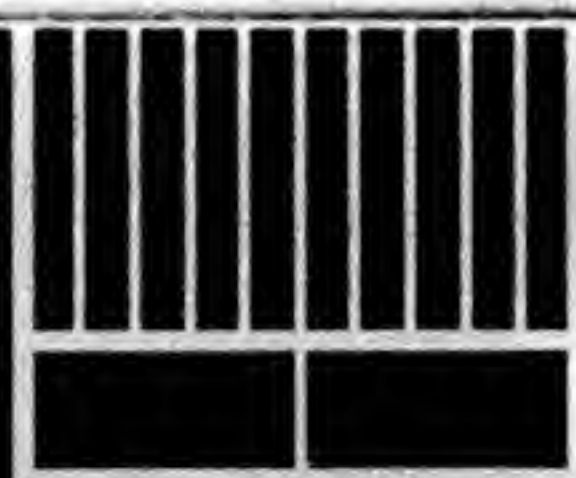
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cm

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Nov 18 1881

Quercus reticulata

Leammon, Mt Graham Arizona 1880



Cotyledons separate



0

1

2

3

4

5

6

7

8

9

10

cm

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6253

Leitch & Corlies

CORRIGANS'S

*South West
Corner Fifth
and Market
Streets*

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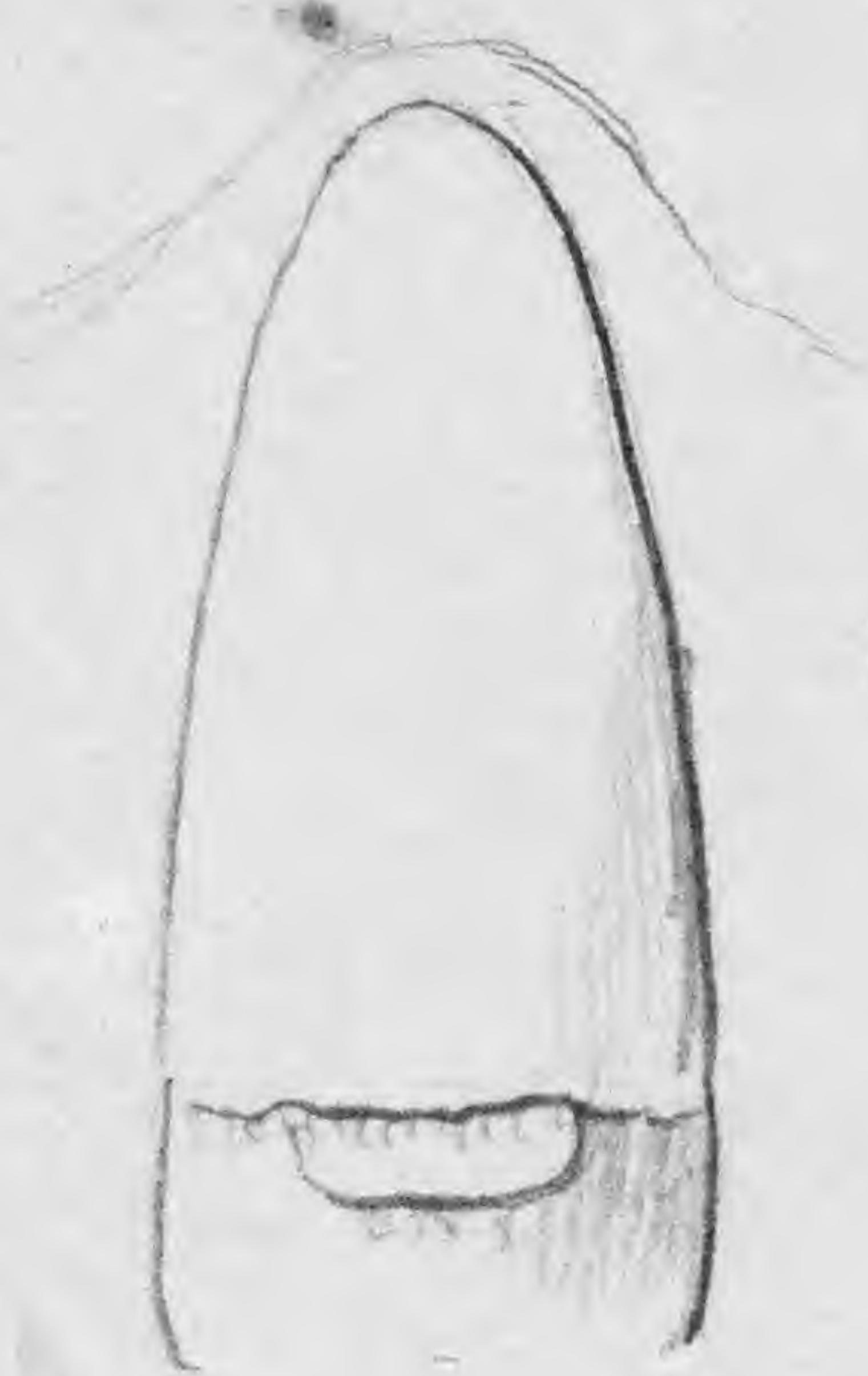
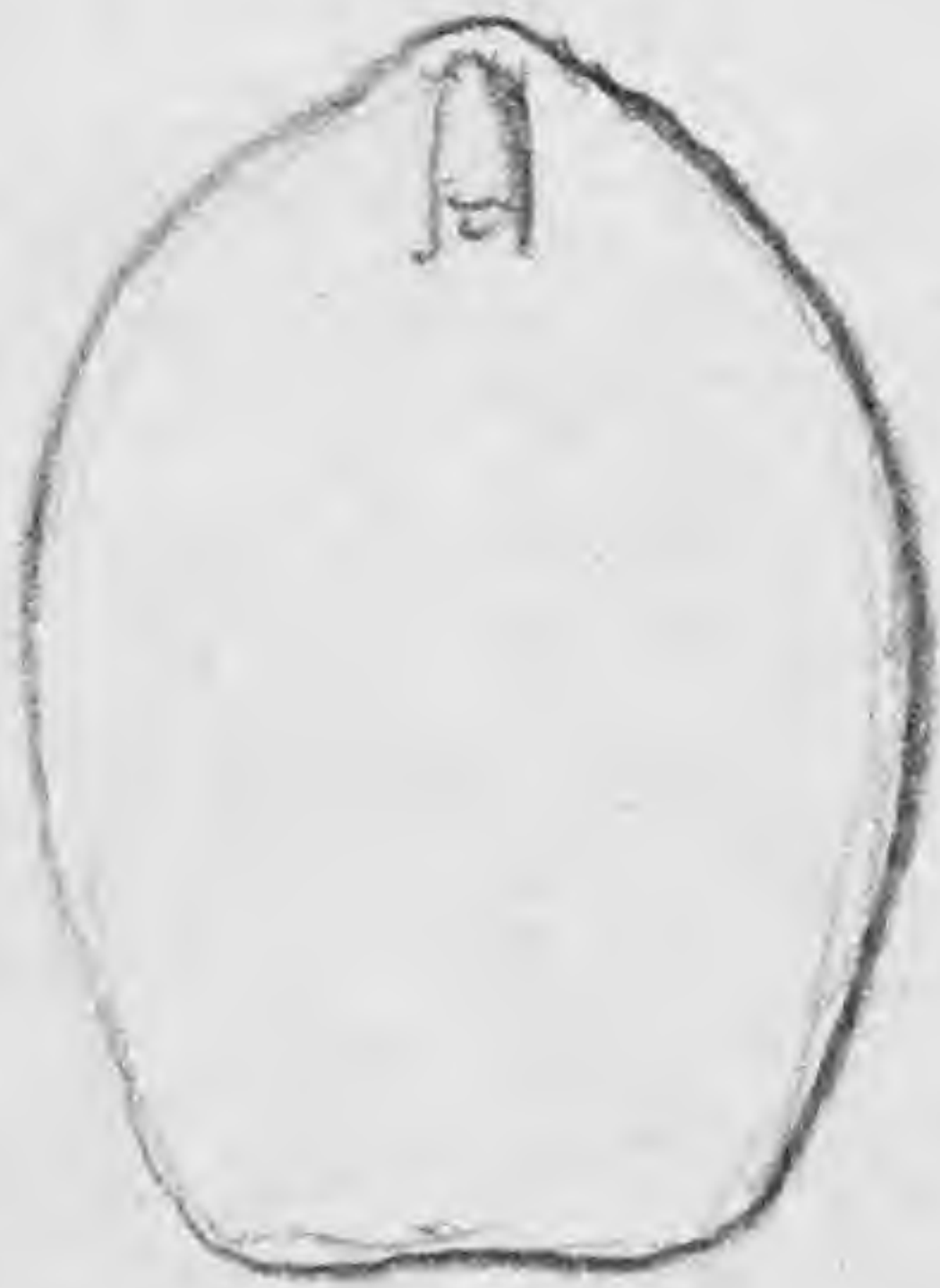


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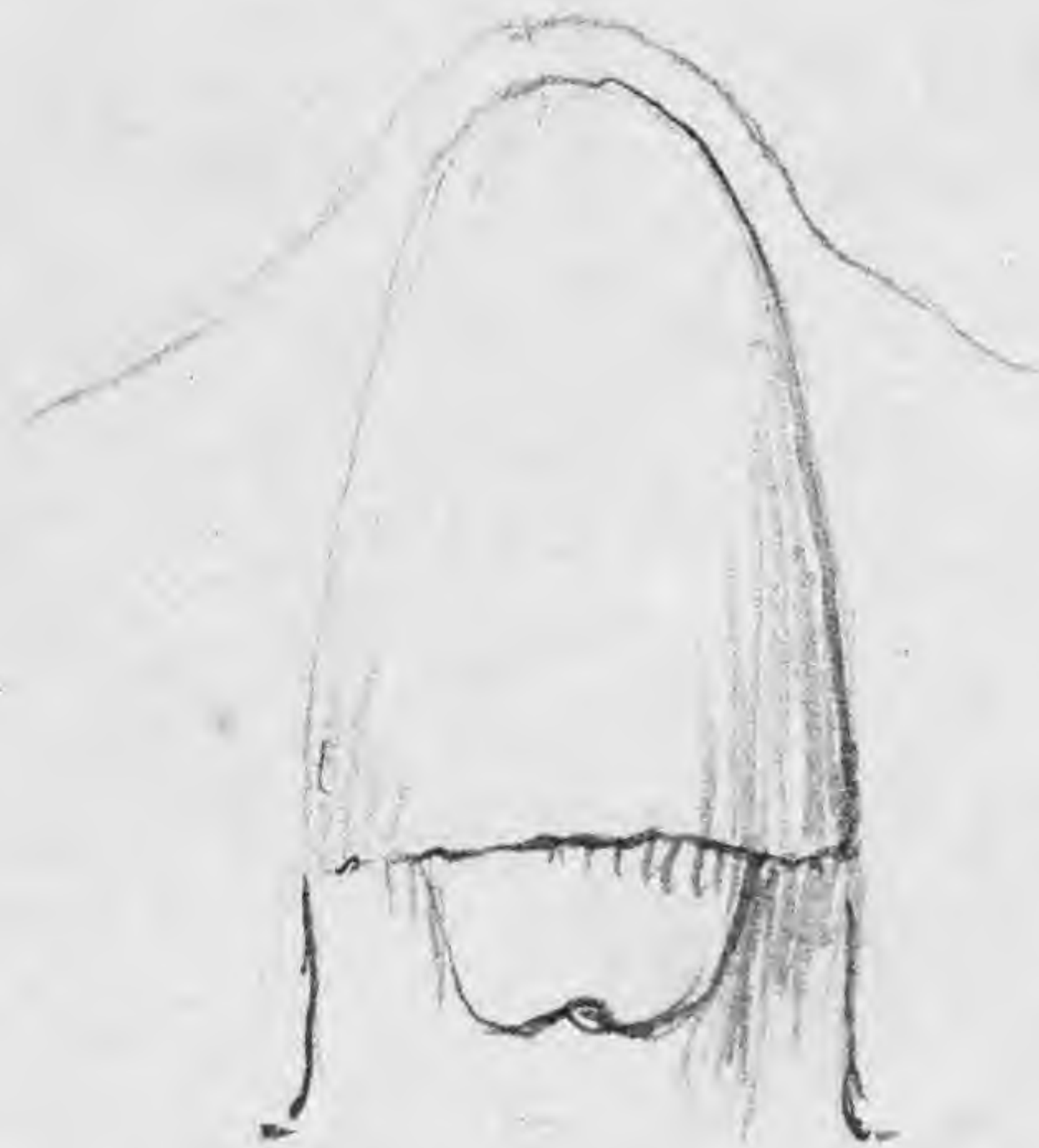
Febr 20 1880

Q. rubra
St Louis

Q. tinctoria
St Louis



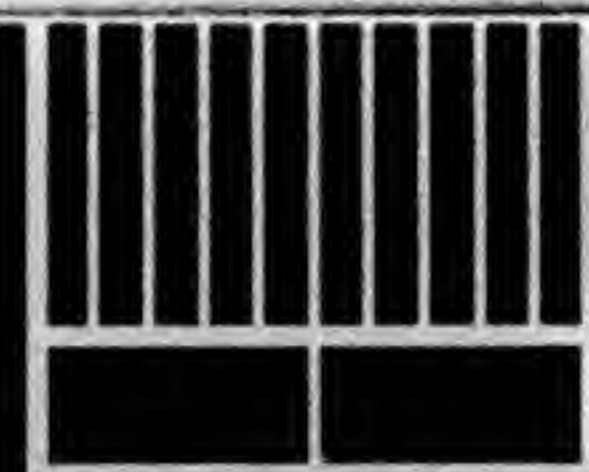
x 10



x 10



x 10



0 1 2 3 4 5 6 7 8 9 10

cm

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6254

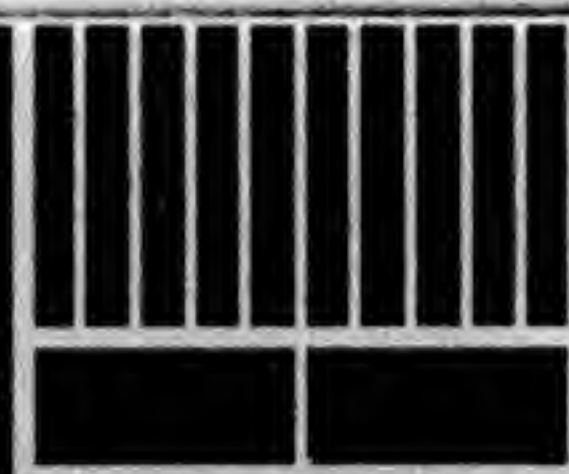
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cm

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Q. undulata

Feb 20 1880

var *Gambelii*
Manitou, Colorado

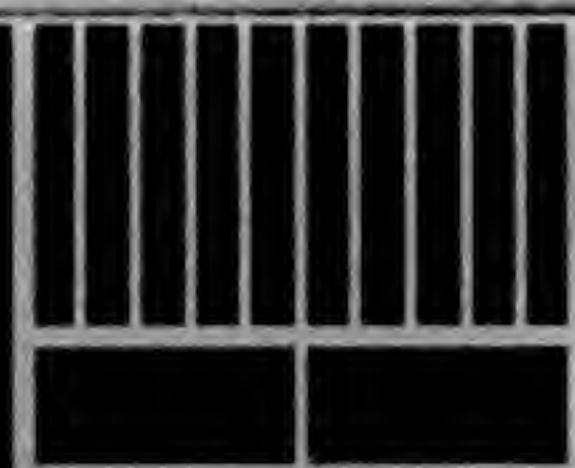
var *Garrisoni*
Colorado



x10



x10



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cm

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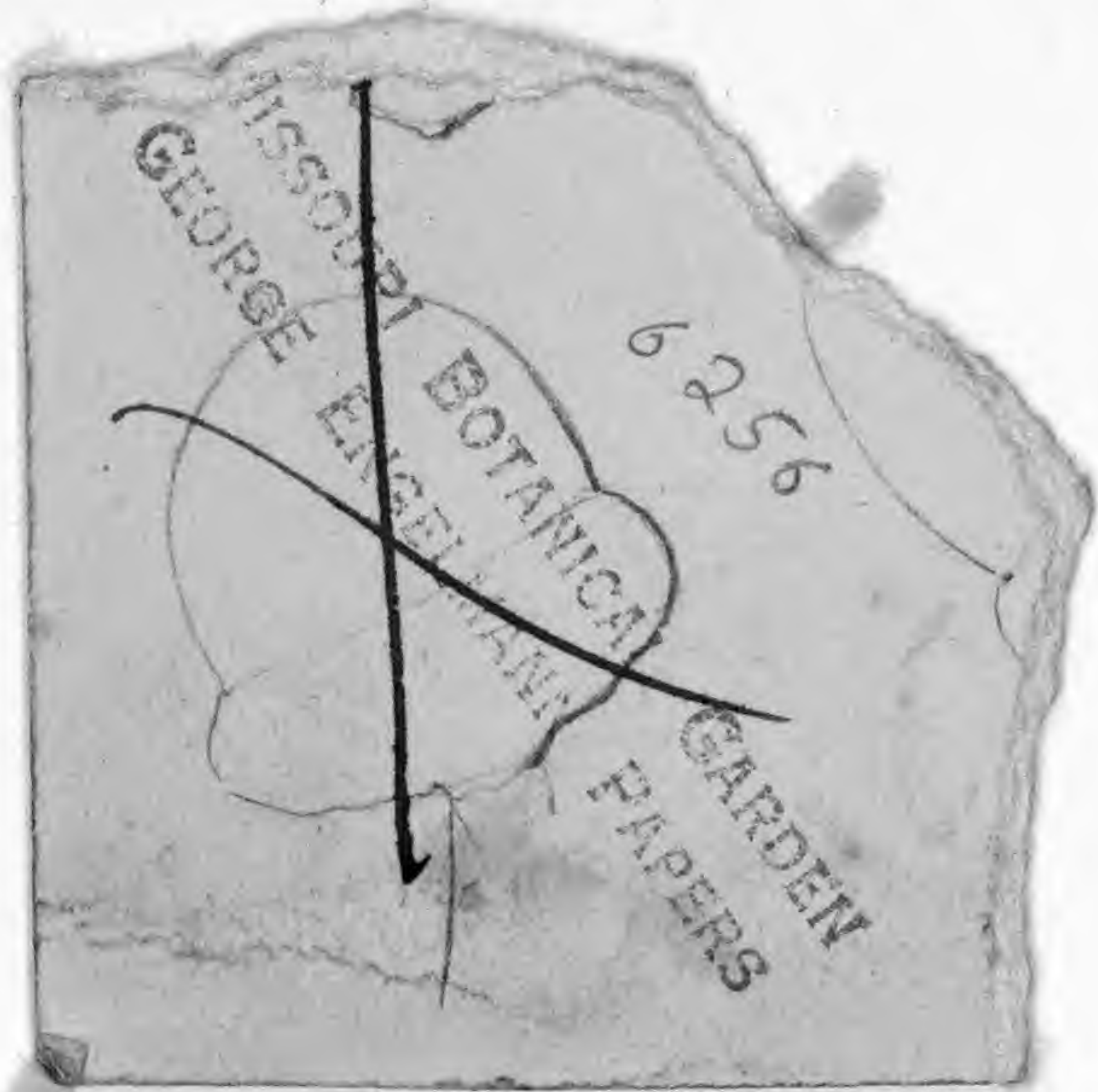
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cm

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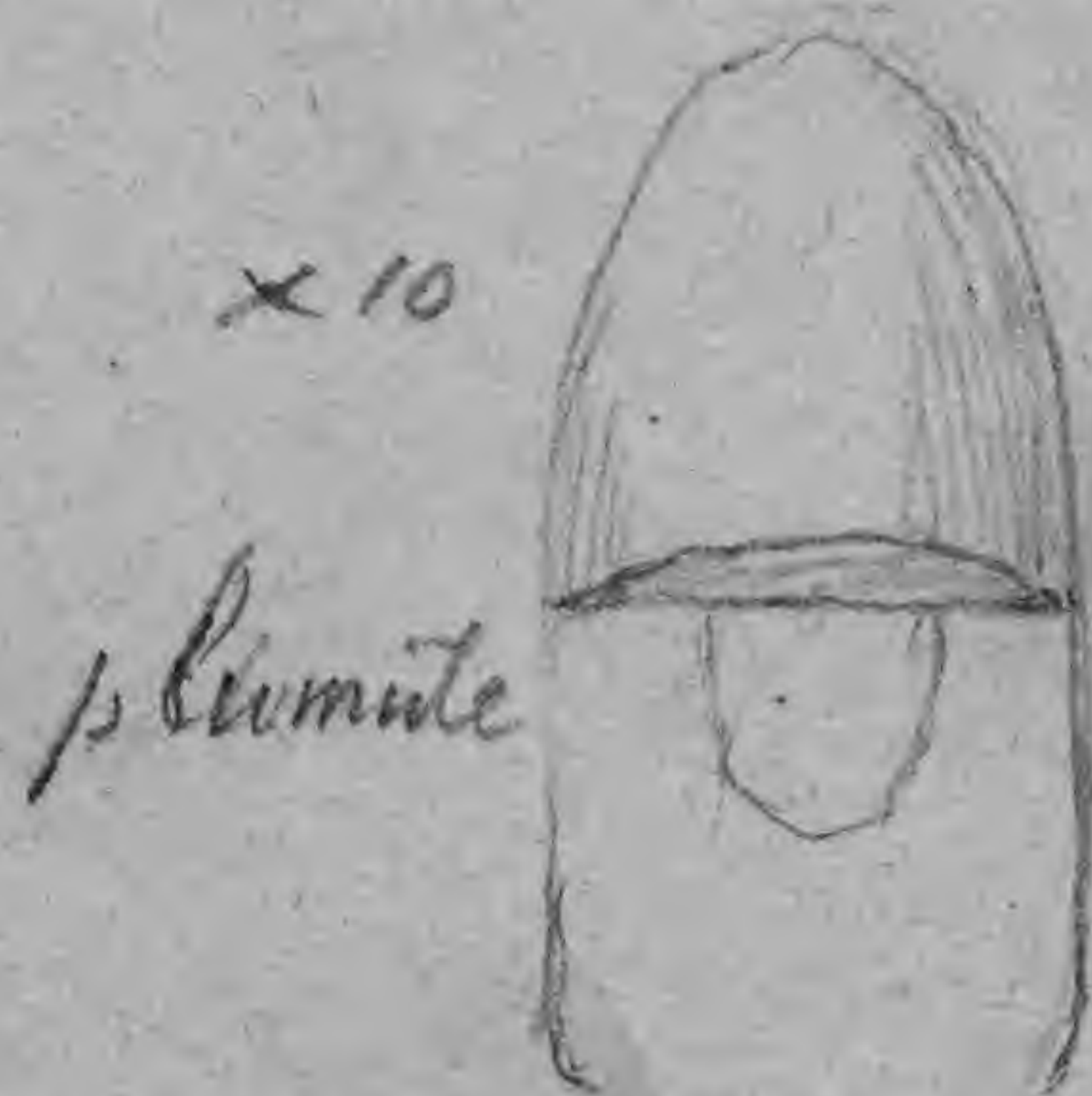
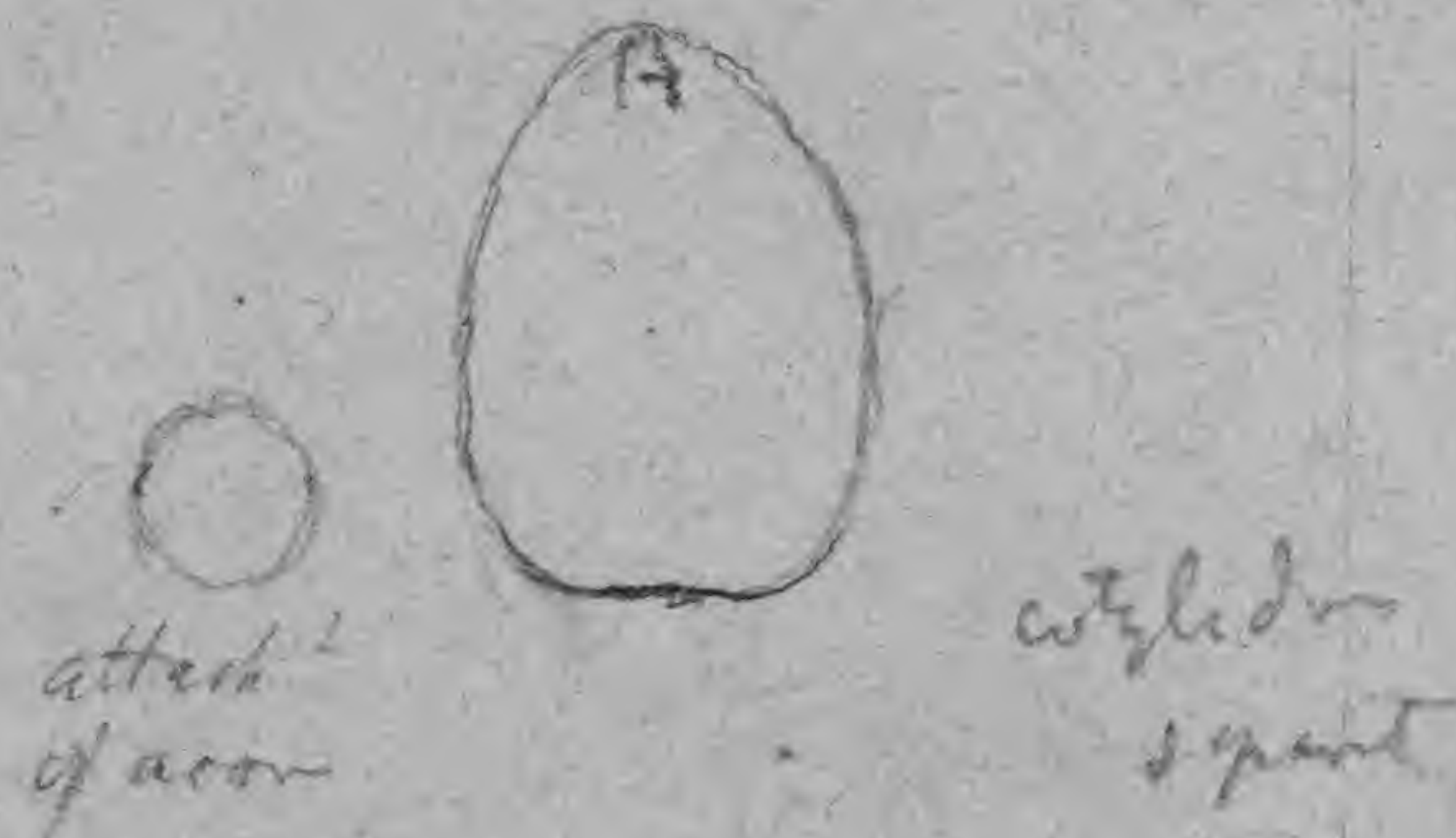
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Oct 16 1881

Quercus undulata
var *Gambelii*
larger, thicker acorn
from Glen Lysie, Cal
Sept 1881



caulicle scarcely
longer than stalks



0 1 2 3 4 5 6 7 8 9 10

cm

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0 1 2 3 4 5 6 7 8 9 10

cm

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Quercus undulata var. *dentata*? April 2 1882
Sand Oak, Dr. Harvard 1881. Llano Estacado
No 51 Texas



x10

Cotyledon separate



deep cup. enclosing

half acorn



0 1 2 3 4 5 6 7 8 9 10

cm

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J. M. Kirkrick & Co. Cor. Main & Vine.

COR. FIFTH & MARKET STREETS,
 ST. LOUIS, MO.
JONES & LETTICH
 DRUGGISTS



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cm

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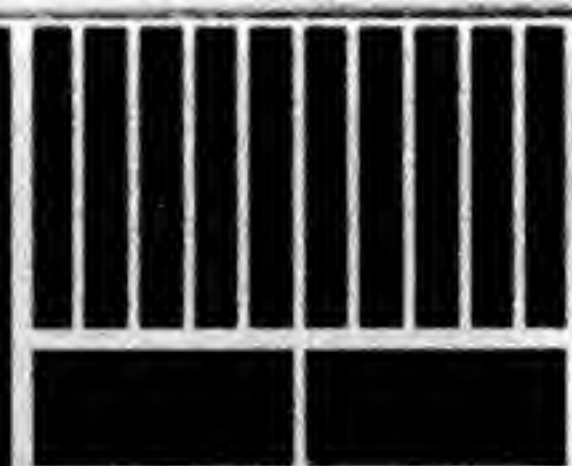
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Q. undulata
var *peruviana*
Canyon of the Arkansas
S.E. 1874

Febr 22 1
1870



Y 10



0 1 2 3 4 5 6 7 8 9 10

cm

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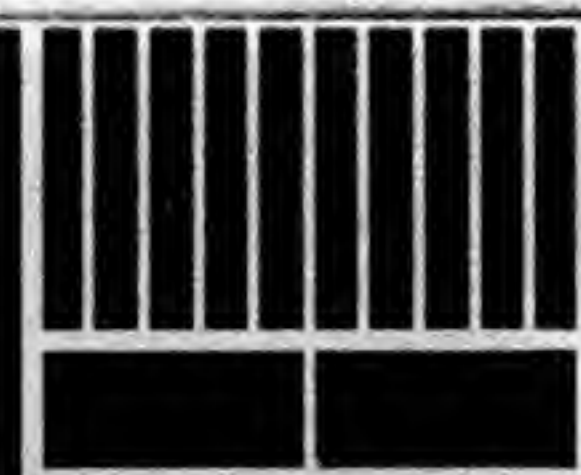
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cm

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Melanobalanos
stripit. capit. brevibr.

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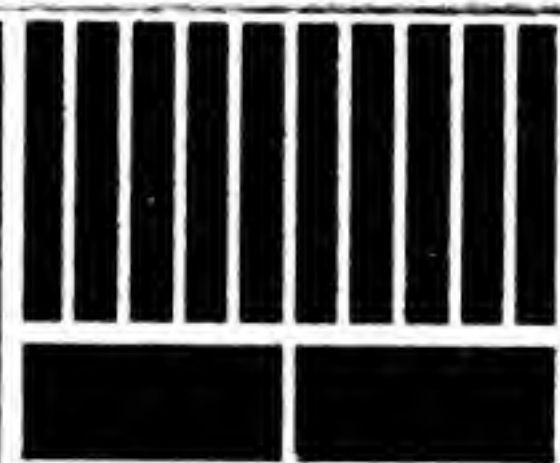
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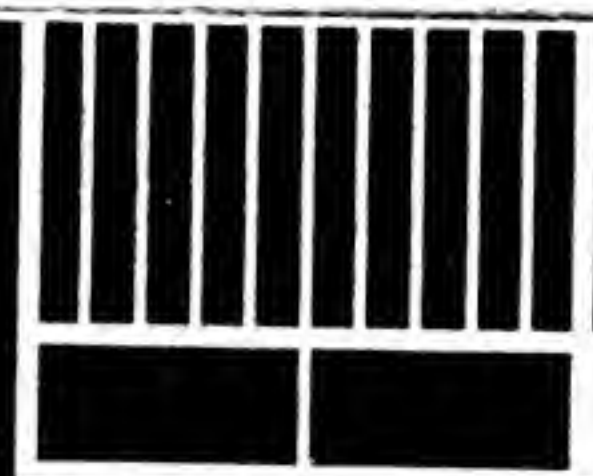
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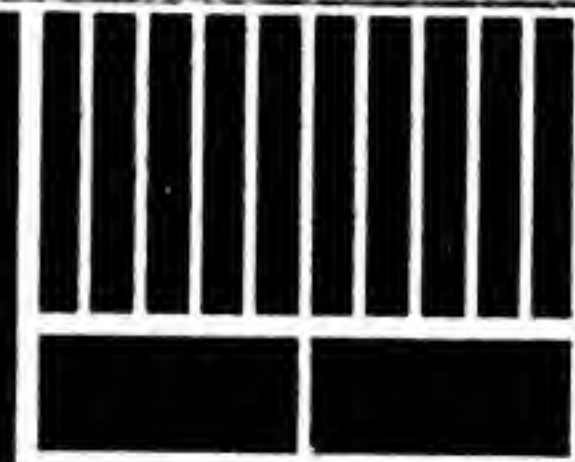
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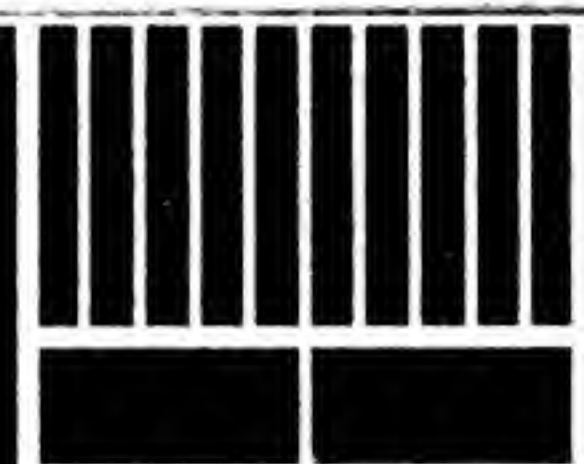
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