



MISSOURI BOTANICAL GARDEN  
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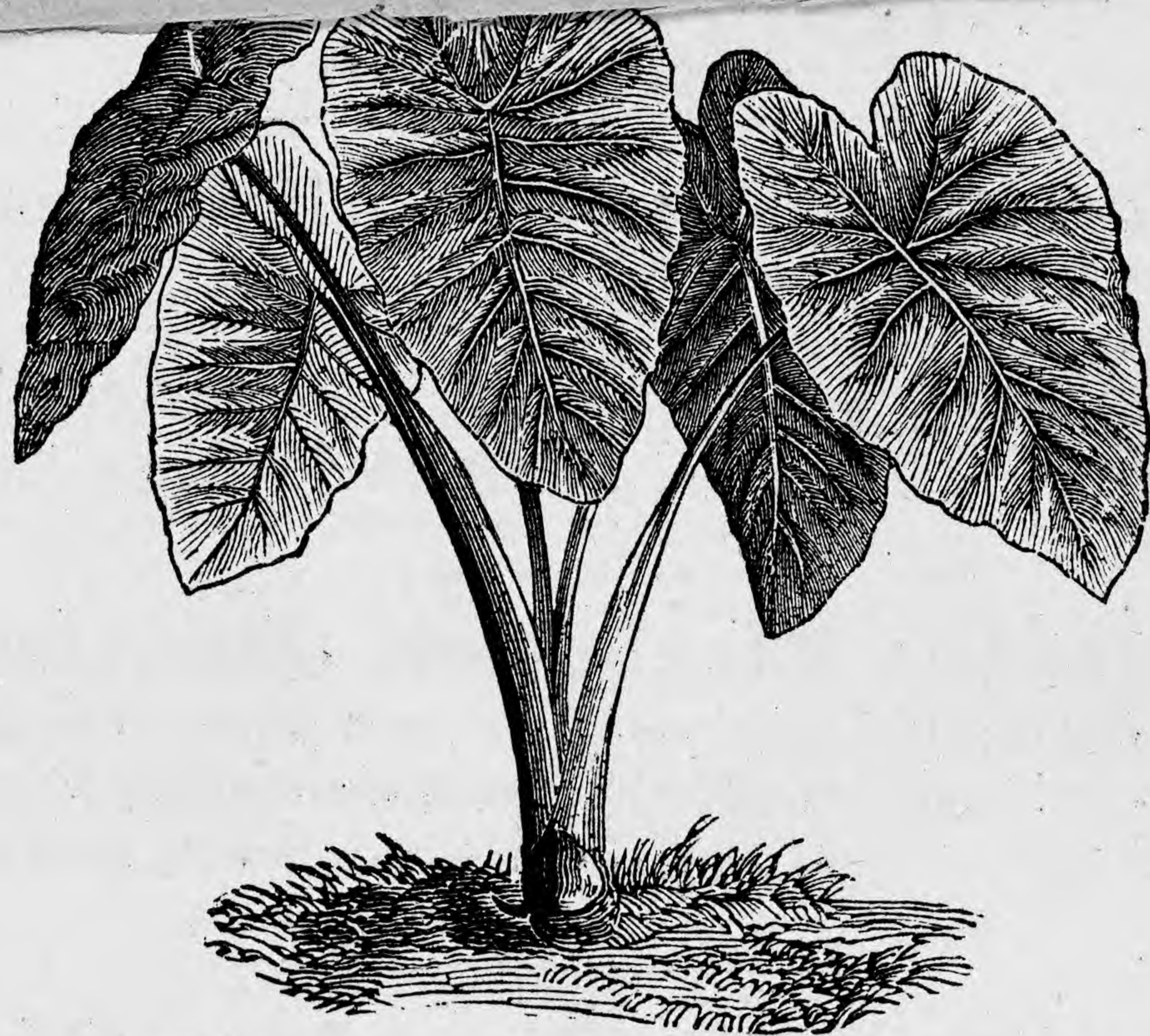


GEORGE ENGELMANN  
BOTANICAL NOTEBOOKS

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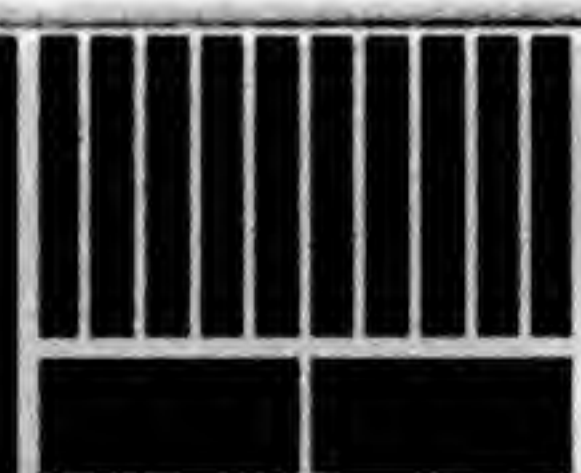




## **Caladium Esculentum,**

THIS 's one of the most beautiful of ornamental foliage plants, and thrives well planted out in a moist place during summer.

Price, \$1.00 each, \$9.00 per dozen.



0  
cm

1

2

3

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8

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10

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GARDEN



13079



brut. exserte

*A. pectinatus*

### **Ranunculus Asiaticus.**

THIS is one of the most valuable of the *Ranunculus*, flowering a long time during the season, and enduring the heat of summer better. It is more vigorous in growth than the other varieties. Flowers very double, from pure white to brilliant crimson.

Price, dry roots, early in the spring, 15 cents each, \$1.50 per dozen; started in pots, 25 cents each.

### **Boussingaultia Baselloides. (Madeira Vine.)**

THE Madeira or Mignonette Vine is one of the finest plants for rapidly covering arbors, trellis work, &c. The leaves are dark glossy green, flowers feathery white; very fragrant.

Price, extra large roots, 10 cents each, 75 cents per dozen; good roots, 5 cents each, 50 cents per dozen.

### **Miscellaneous Running Plants.**

THESE are all well adapted for covering arbors or trellis work. The tubers should be taken up after the first frost, and kept in dry sand during winter.

*Dioscorea Discolor*, pretty variegated foliage plant, growing about 10 feet high, 50 cents each.



0 1 2 3 4 5 6 7 8 9 10

cm

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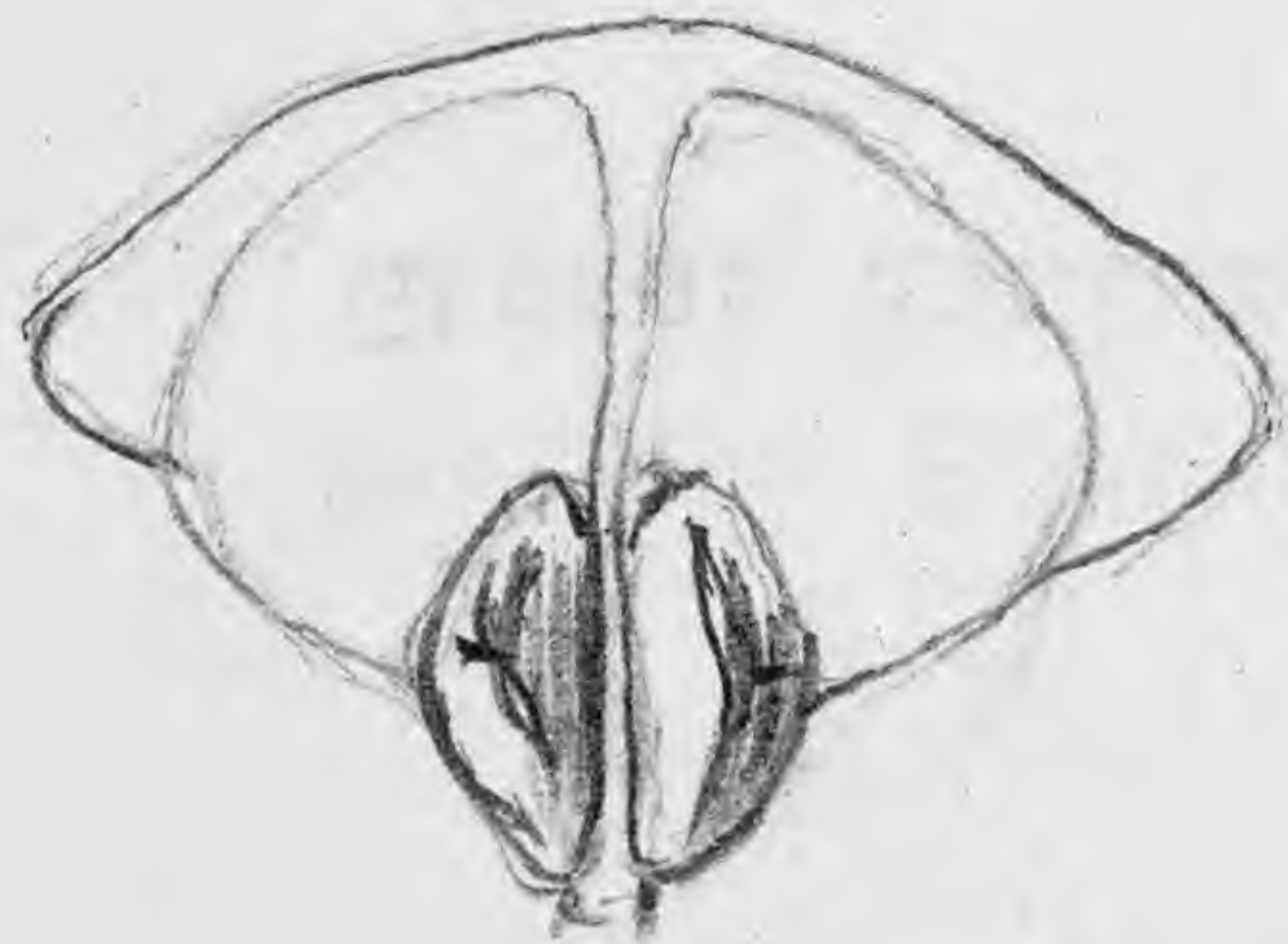
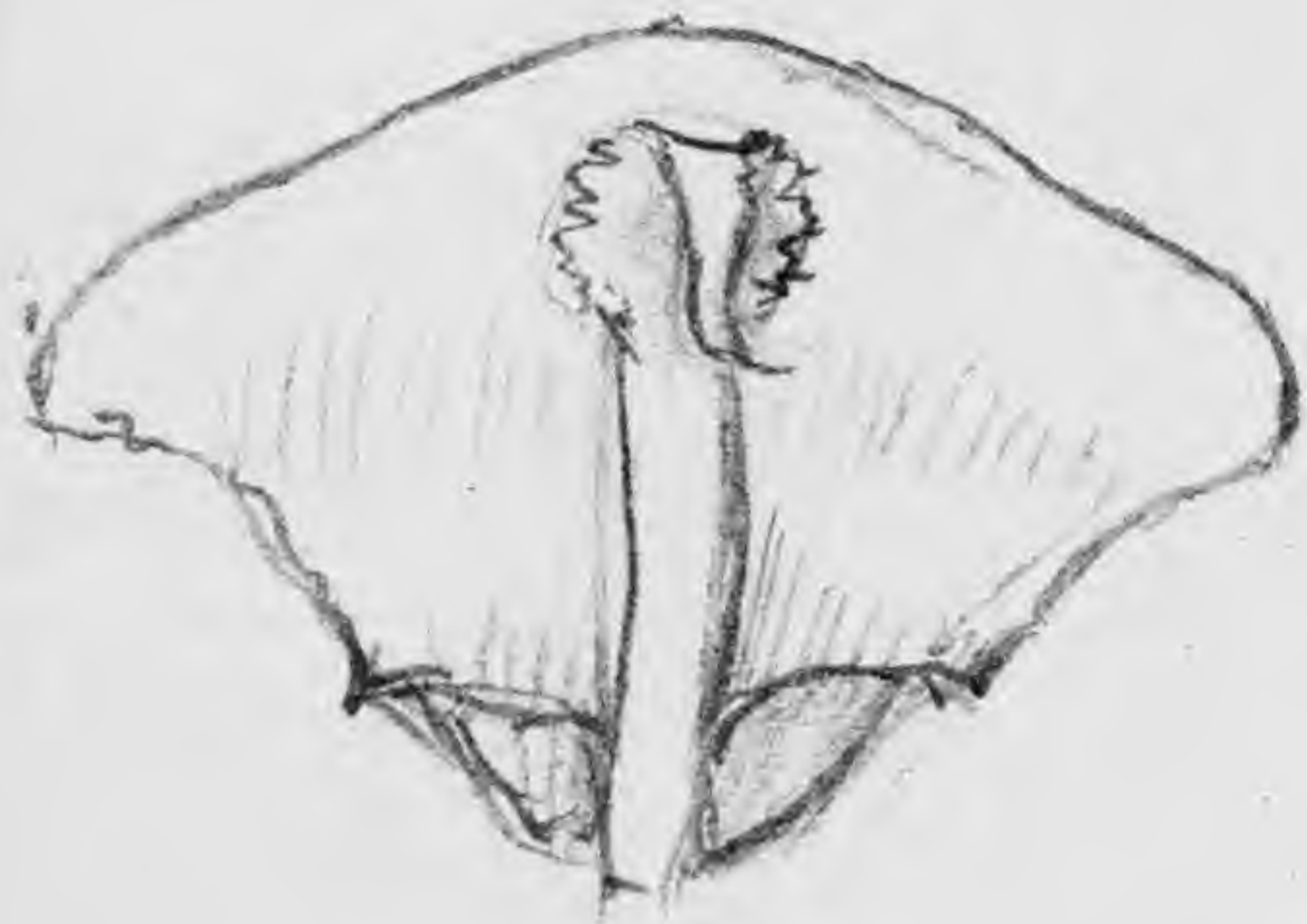


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*Abies pectinata* DC  
Germany

Nov 1862

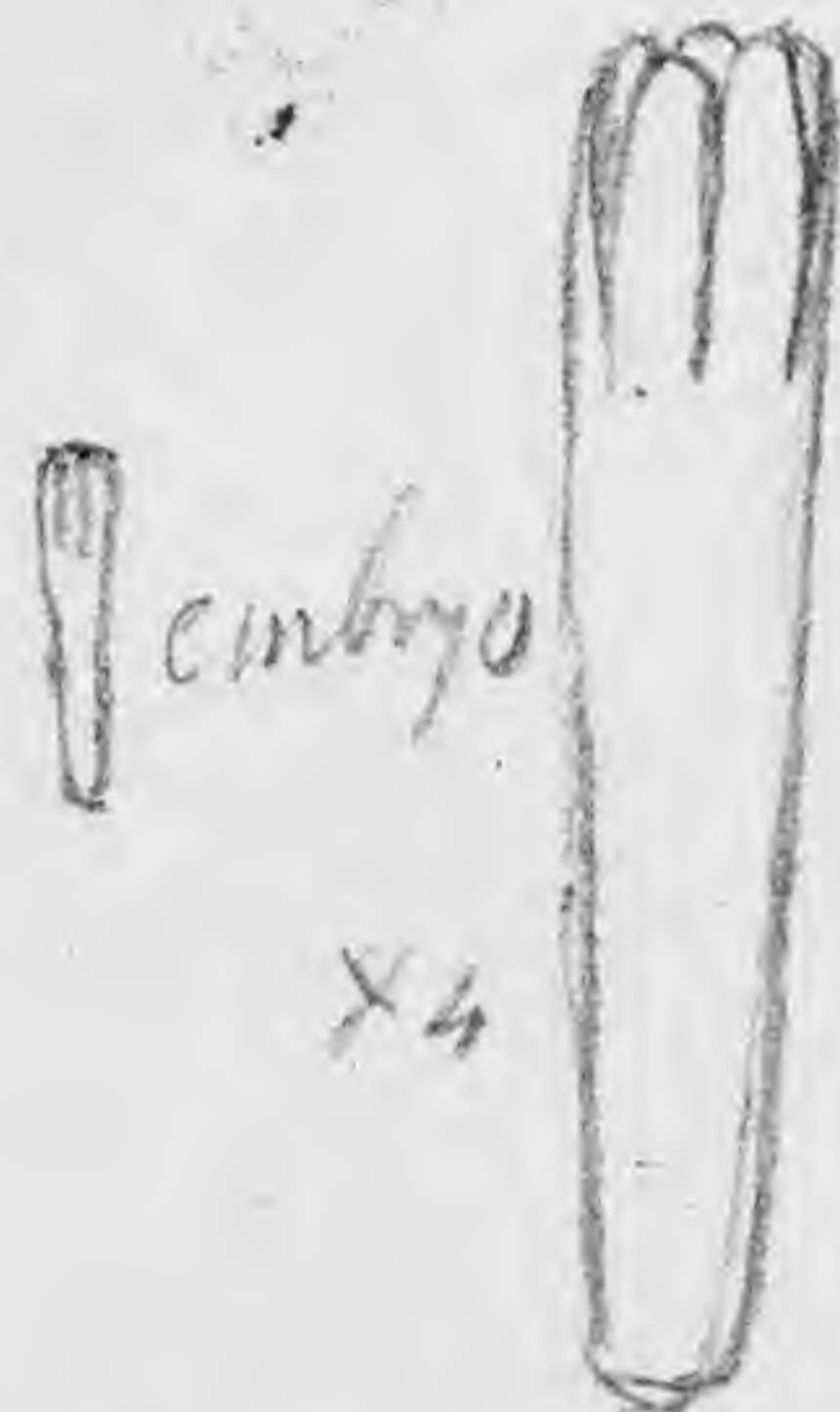


side toward  
supporting  
scale

upper side



seed detached  
with small wing



5 obtuse  
cotyledons



0

1

2

3

4

5

6

7

8

9

10

cm

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*Abies pectinata*

Oct 4. 1870

cultivated & from Richl

x2



scale, copied  
from Loudon



Thuringerwald  
16 May 1869 germinating

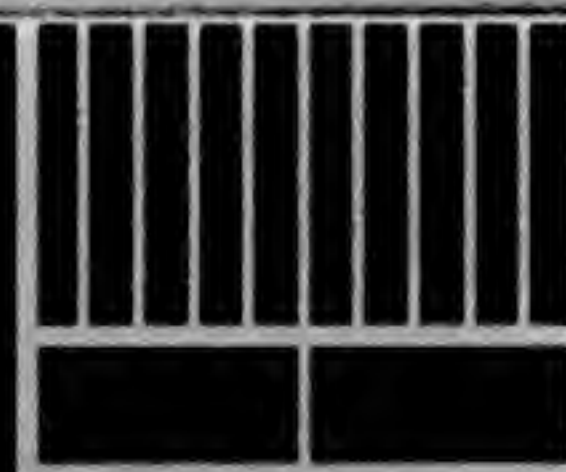
12<sup>mm</sup> x 5/12

5 or 6 cotyledons

rank 3 or 4



x2



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cm

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*Abies pectinata*

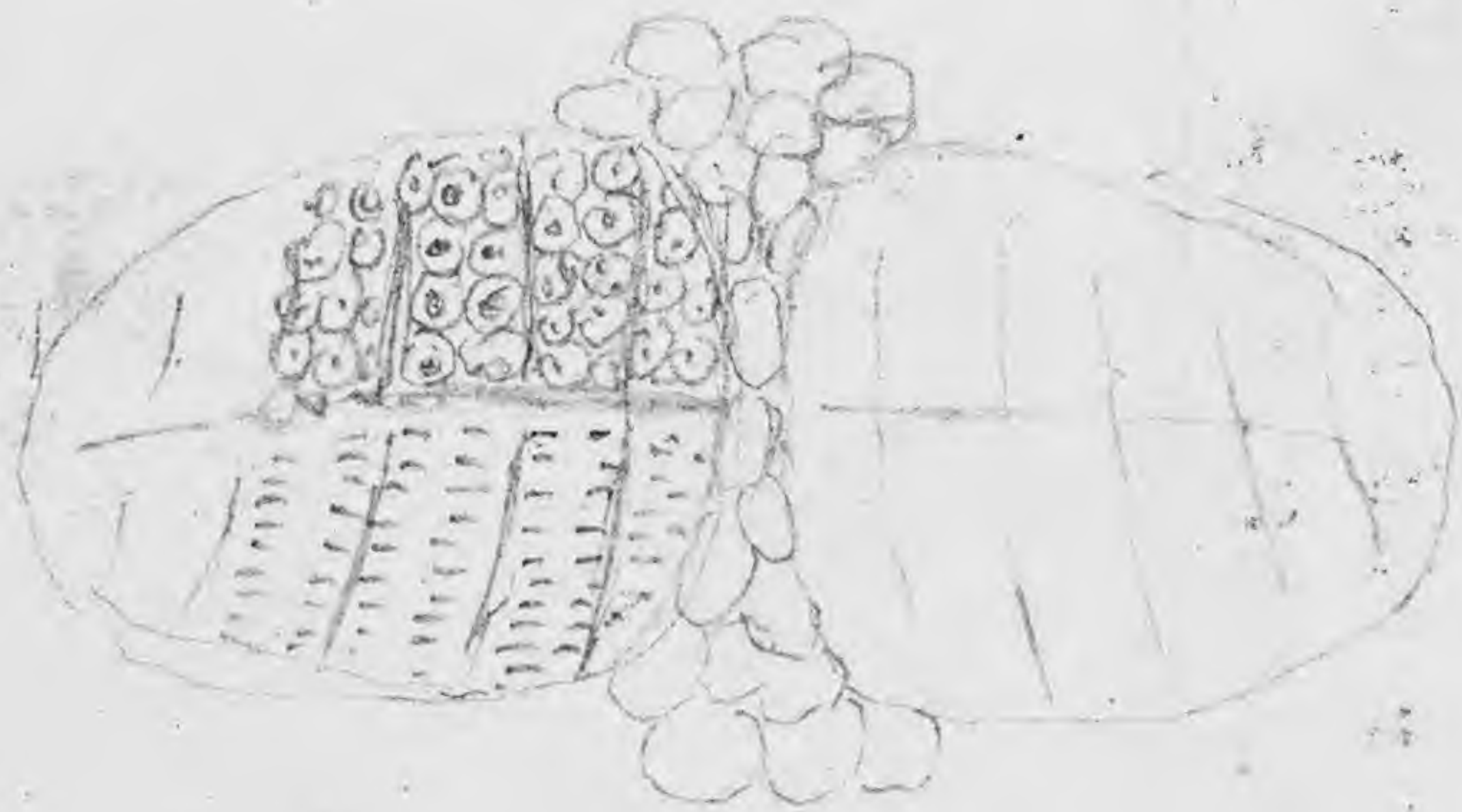
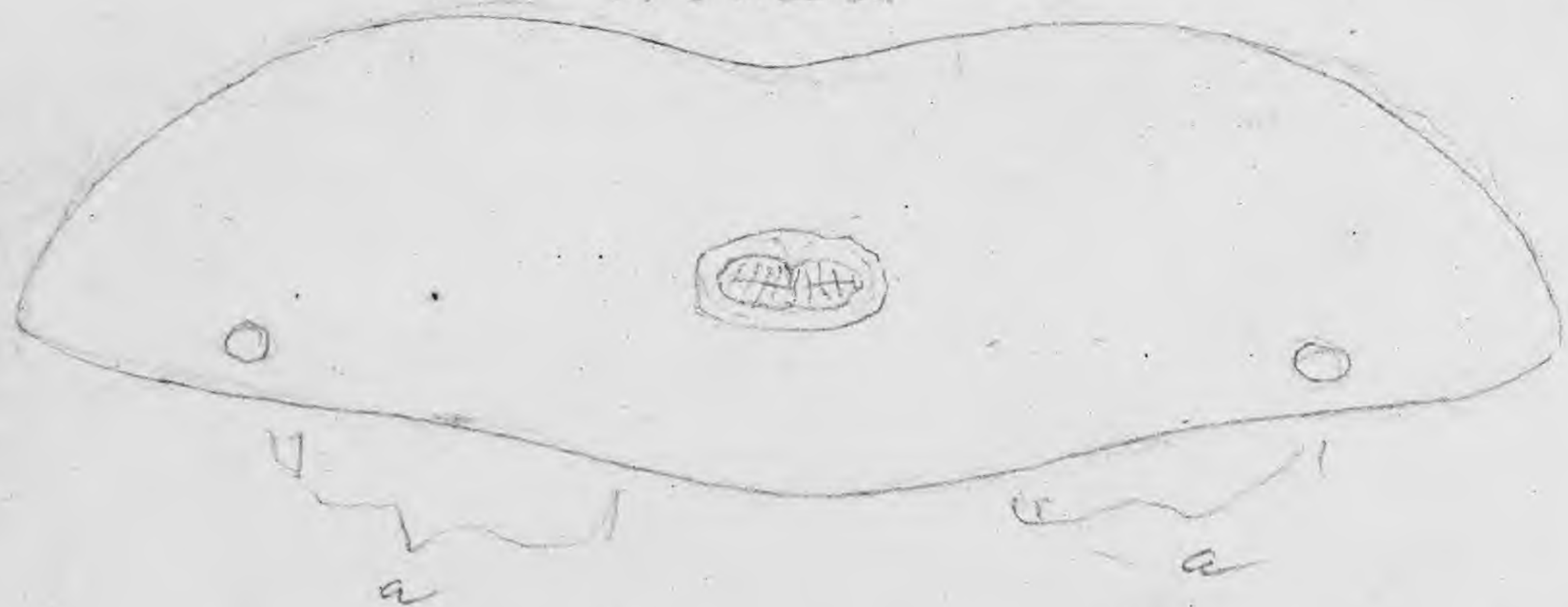
August 1 1871

x 30

no stomata

H.B. Missour

sections of different forms of leaves  
stomata on two broad white  
bands (aa) on lower side



0 1 2 3 4 5 6 7 8 9 10

cm

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Deutsche Apotheke.

HENRY DIERS,  
APOTHECARY,

South East Corner Fifth and Fiddle Streets,

ST. LOUIS. MO.

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18082



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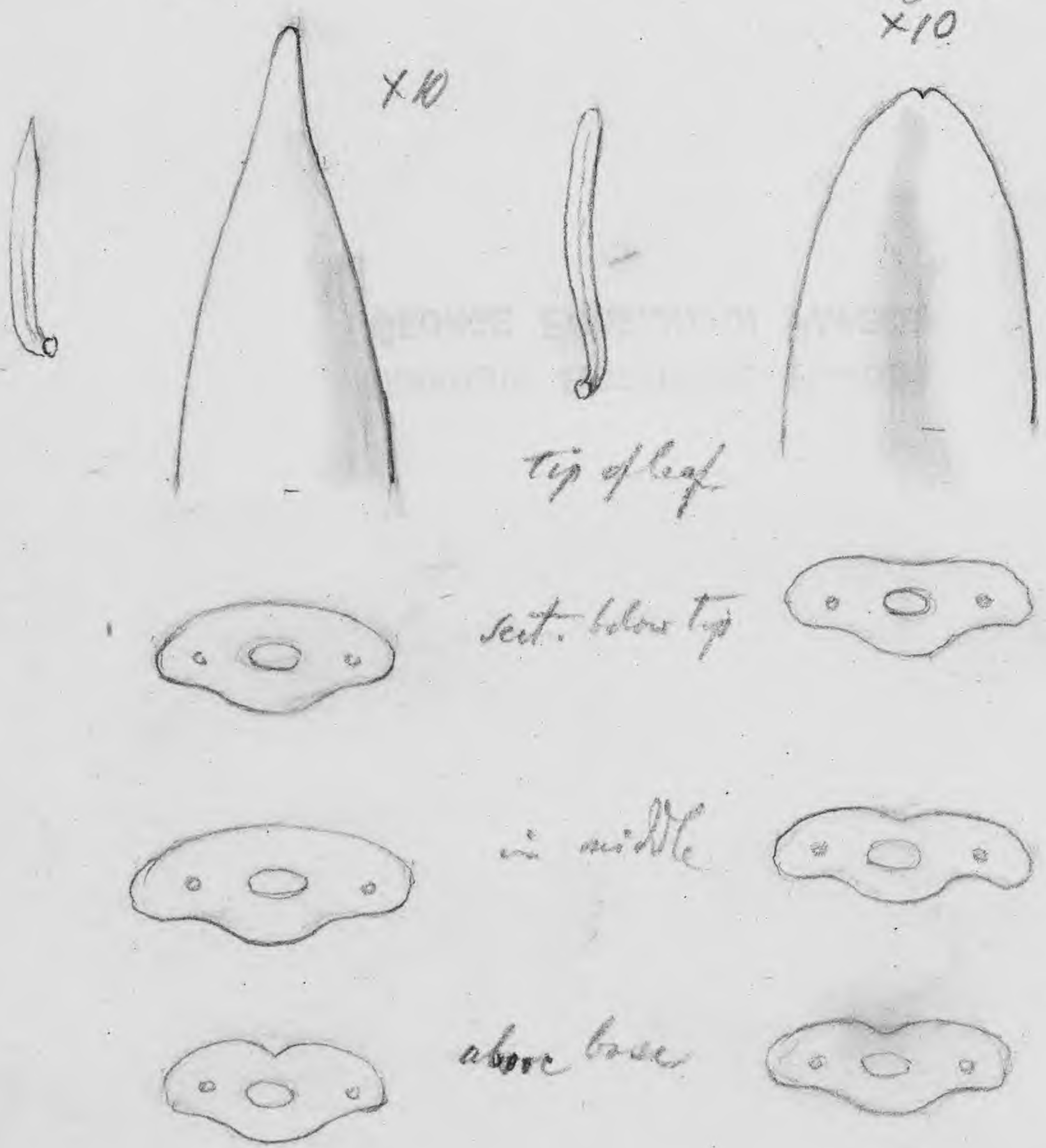
*Abies pectinata*

April 18 1872

leaves from a fertile branch, Tripstein, Thuringia

J. E. June 1869

most leaves acute



some stomata on upper side

HERBARIUM OF THE  
 UNIVERSITY OF CALIFORNIA  
 J. E. RAVENEL & SONS  
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 1001 G STREET  
 SAN FRANCISCO  
 CALIFORNIA



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MISSOURI  
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1872

Wright & Corlies

DRUGGISTS

South-west  
Corner Fifth  
and Market  
Streets

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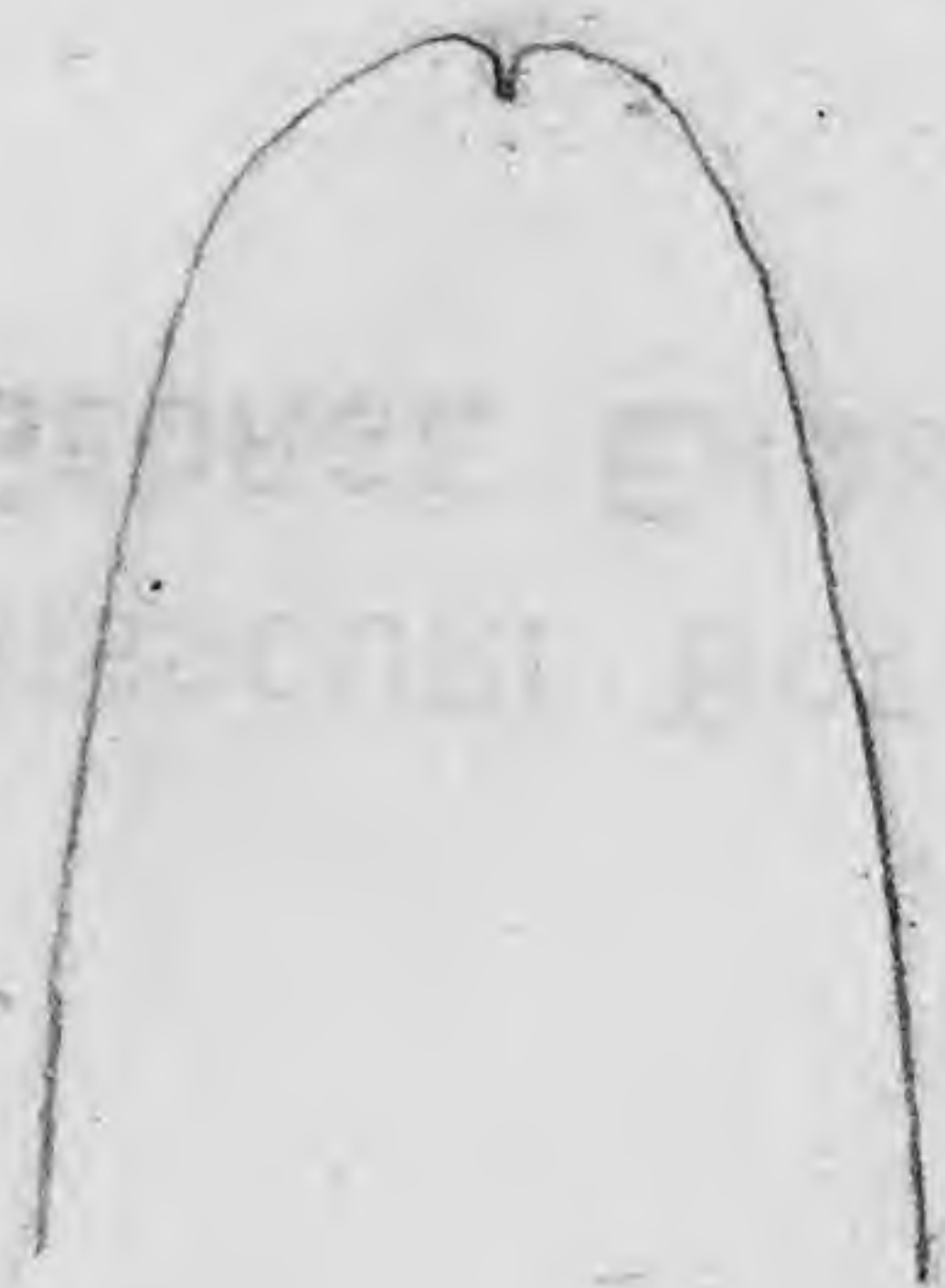
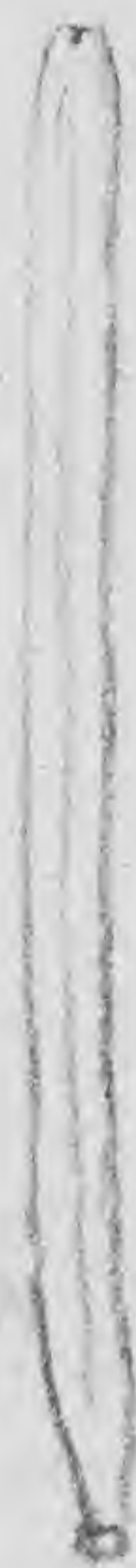
*Abies pectinata*

April 18 1872

Baden Baden 1868

x10

no stomata on upper side



tip of leaf



section near tip



middle



near base

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Leitch & Corlies

DRUGGISTS

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*Abies pectinata*

Oct 7 1875

Germany

no stomata

x 30



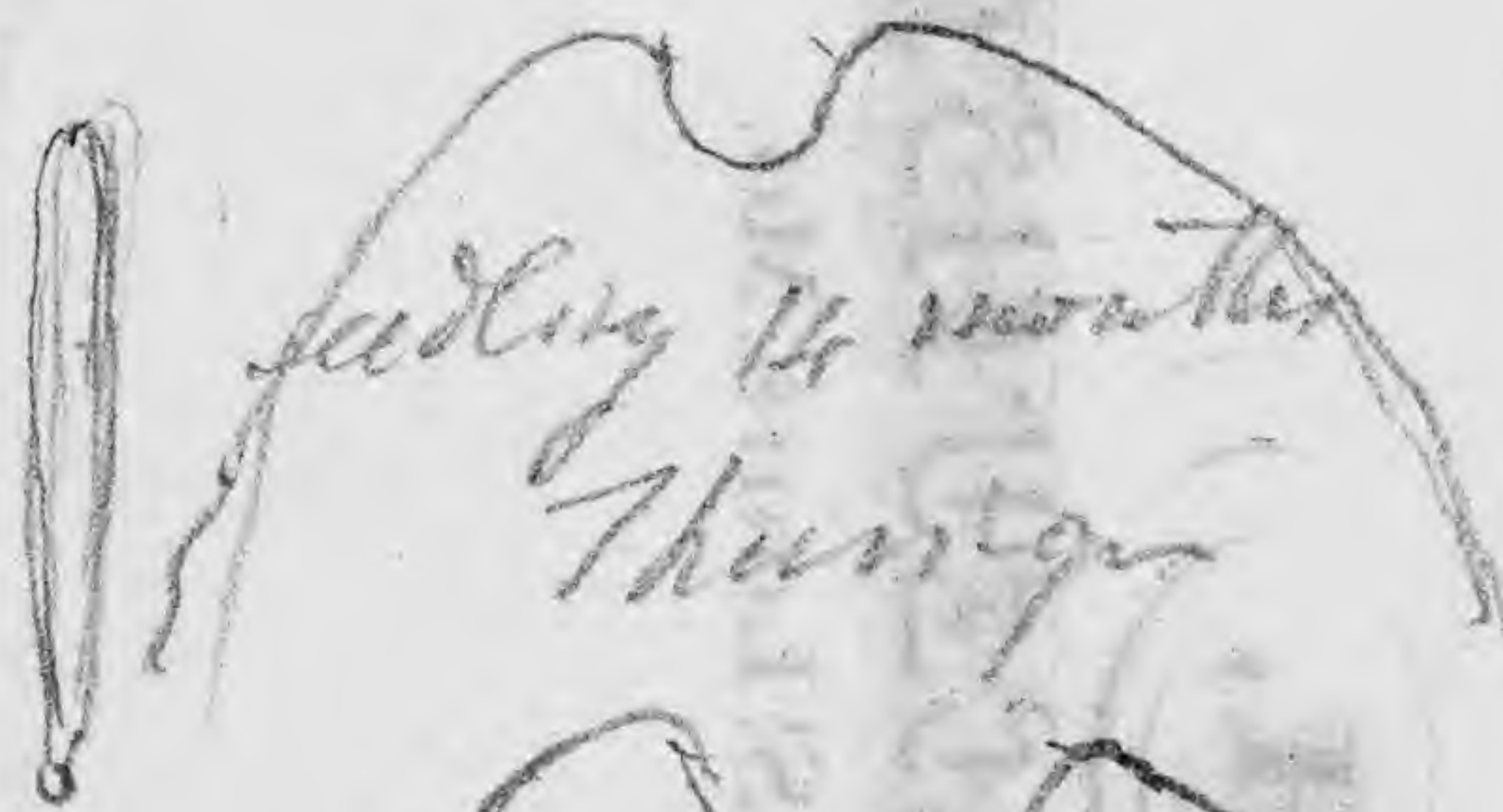
2 white bands already only trace of ducts distinct

no stomata

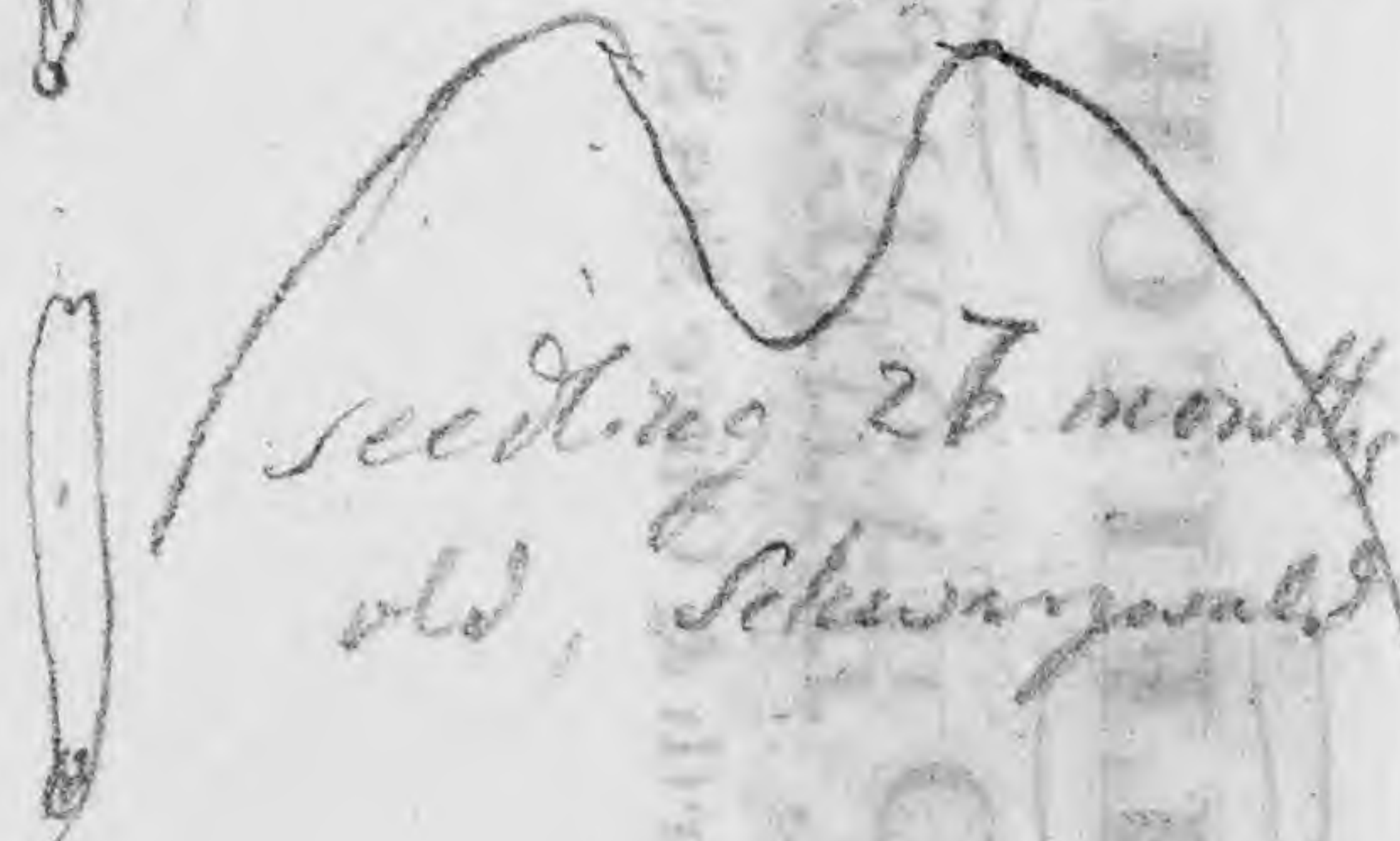


only trace of ducts

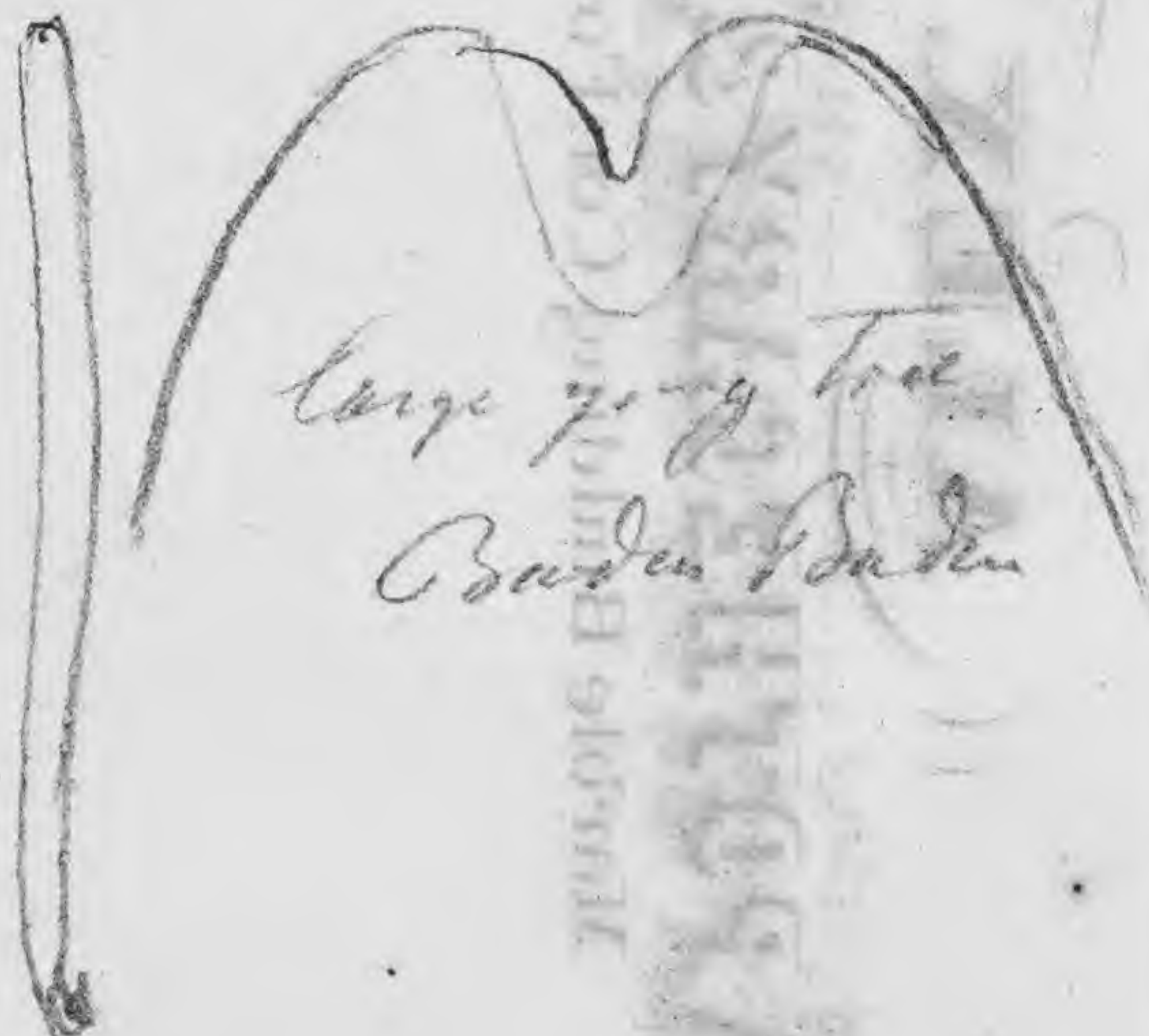
no stomata



seedling 14 months  
Thuringia



seedling 26 months  
old, Schwarzwald



large young tree  
Baden Baden



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cm

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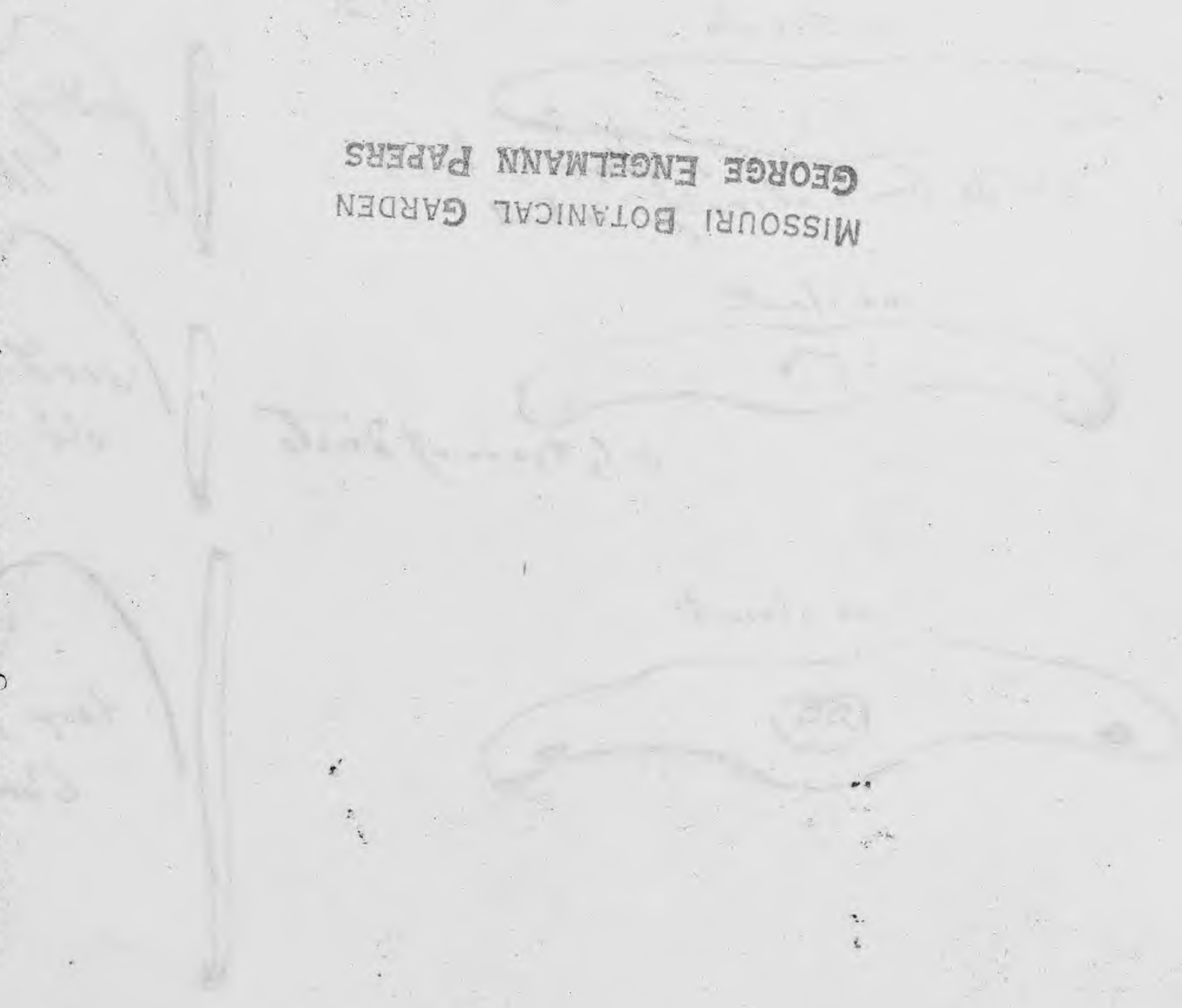
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*Abies pectinata* July 2<sup>d</sup> 74  
Theriac - 1869

$\frac{40-42}{280} = 0.14-0.15 \text{ mm}$  Pollen

ГЛАВНЫЙ & БОТаниЧЕСКИЙ  
САДЪ И БИОТЪПЪ  
ВЪ С. ПЕТЕРБУРГѢ  
ВЪ С. НУБВИЗОНѢ



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**D**ruggist & **H**pothecary

*508 Leffingwell Avenue,*

**R. C. HARRISON,**

13086



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Christ

*Abies pectinata* (now named by some *A. alba*)  
only on fertile branches acutish or acute leaved  
but some south european forms have  
all the leaves thin! more or less.

*A. apollinis*,

*A. Regis-Australis*

*A. Pinsapo*

*A. Cephalonica*

and must be considered climatic varieties



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cm

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DINGELSTEDT & CO.  
Forwarding & Custom House  
AGENCY.

OFFICE, 27 WILLIAM ST.,

New York, Apr 5 1876

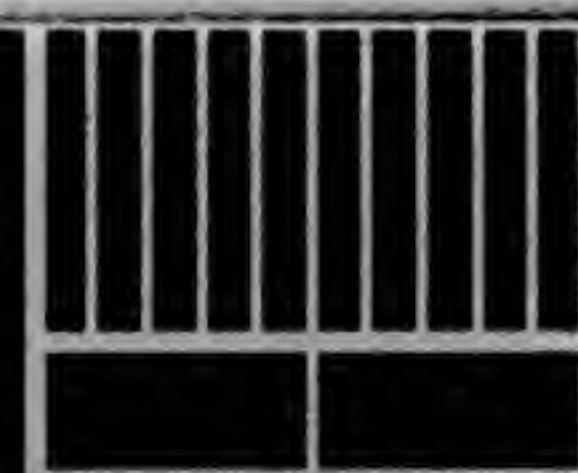
Established 1852.

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H. G. Engelmann  
3003 Locust St  
St Louis Mo

13087

Dear Sir,  
The package arrived in good  
order, and was shipped to Haage & Schmidt  
by the steamer *Cimbria* sailing tomorrow



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cm

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*Alnus pectinata*

Feb 25 77

Missouri Bot garden

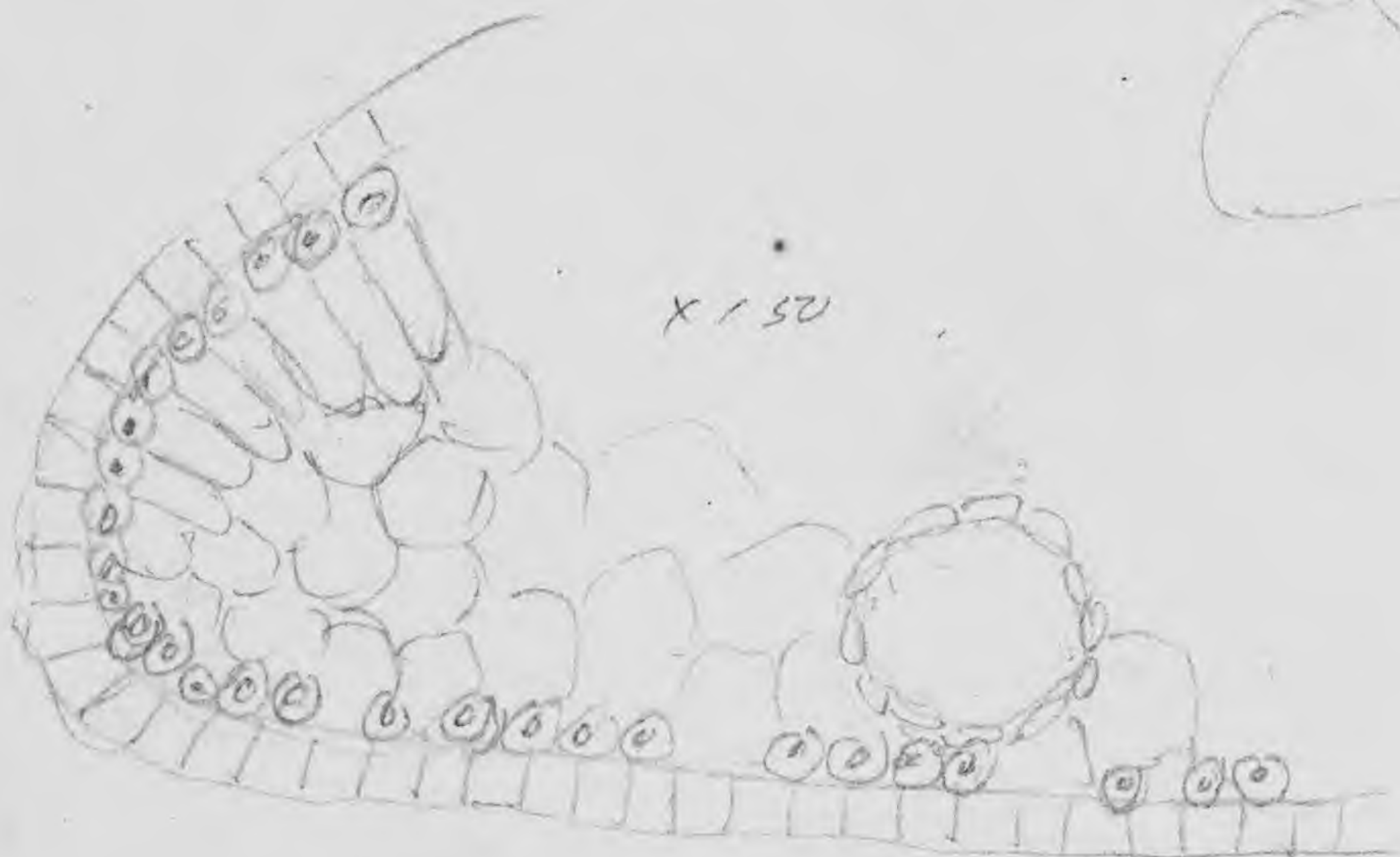
x150 upper groove



x150 Kell



very large dark green  
palisade cells



x150

8-10 series of stomata  
in each band

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GEORGE ENGELMANN PAPERS  
No. 101  
No. 102  
No. 103  
No. 104  
No. 105  
No. 106  
No. 107  
No. 108  
No. 109  
No. 110



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Deutsche Apotheke.

— G E O . U D E ,

A u s t r i a n A p o t h e k e r

No. 3610 North 10th Street,  
Between Mallinckrodt and Salisbury, ST. LOUIS, MO.

No. .... 187

For .....

Rp.

SS ORI BOTANICAL GARDEN  
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*Alnus pectinata*

Oct 8 1875

Thuringia May 1869

x30

line of stomata towards tip



leaves of male  
branch

scattered stomata



leaves of female  
branch

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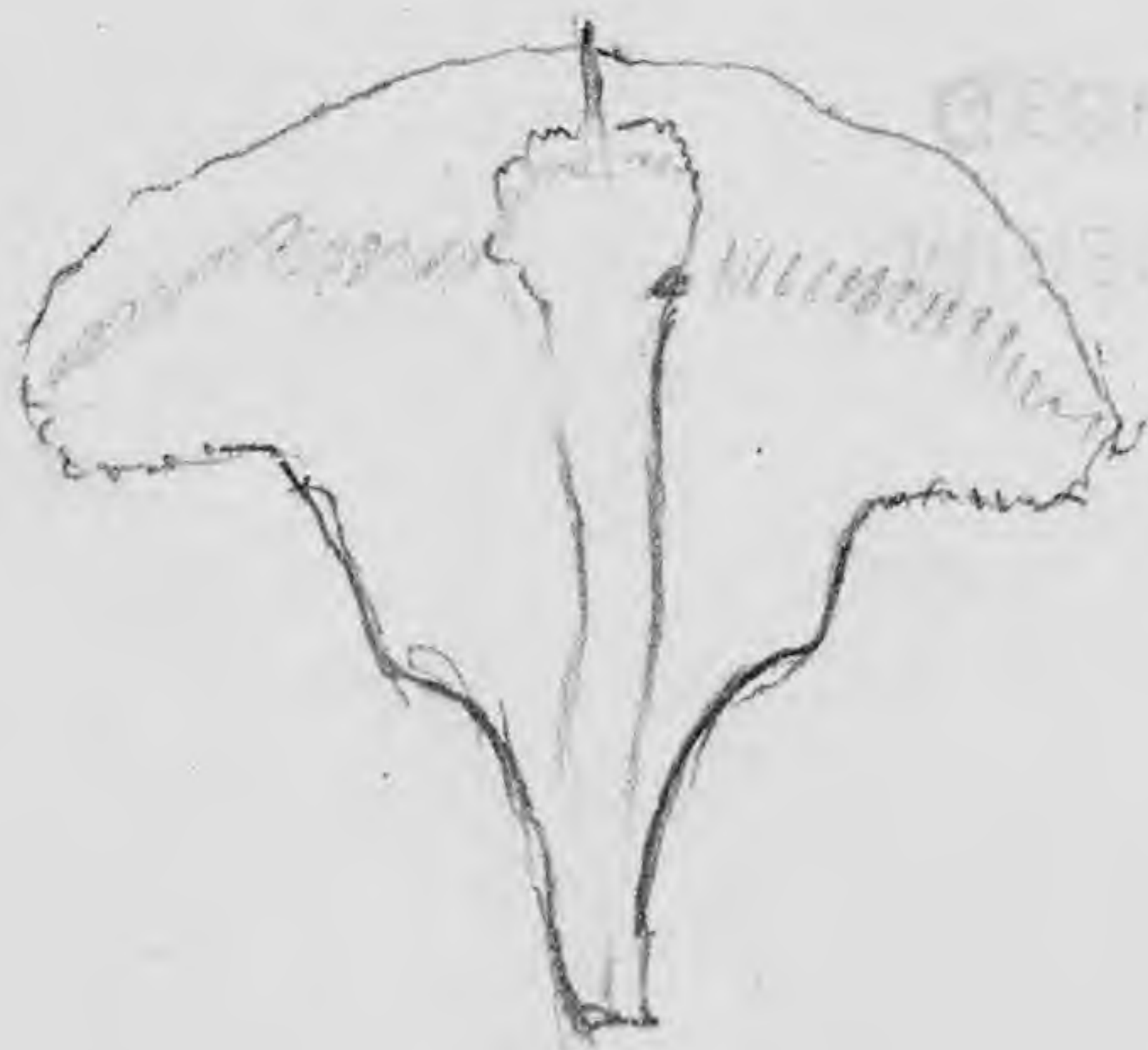


wrongly :

"Pinus Pinsapo"

Oct 4 1870

Hort Bot Neapol 1868, Decemb

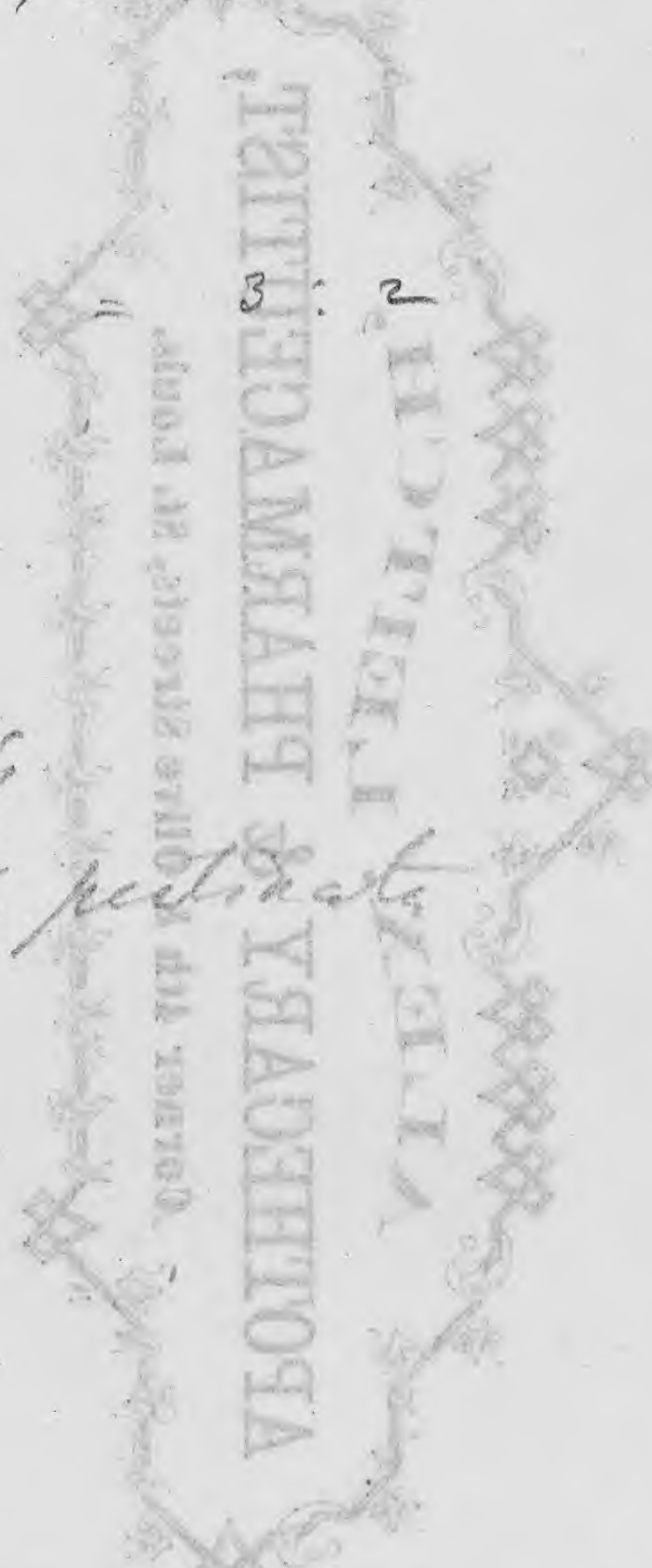


30 : 20 mm



scale of young cone of Hort bot Neapol  
May 1868

This is  
= *A. pectinata*



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1850  
13090

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*Abies Pinsapo*

Oct 7 1870

*hispanica*



very young cone, Spain, Bourgeau 451



female cone soon after flowering,  
Spain, Boissier

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MISSOURI BOTANICAL GARDEN  
GEORGE ENGELMANN PAPERS  
COLLECTED BY G. ENGELMANN IN 1846  
ABIES HISPANA & ABIES PINSAPA  
BY G. ENGELMANN  
1846

1870



0 1 2 3 4 5 6 7 8 9 10

cm

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Abies Piceae

April 14 1871

H. Bot. Mus. April 12

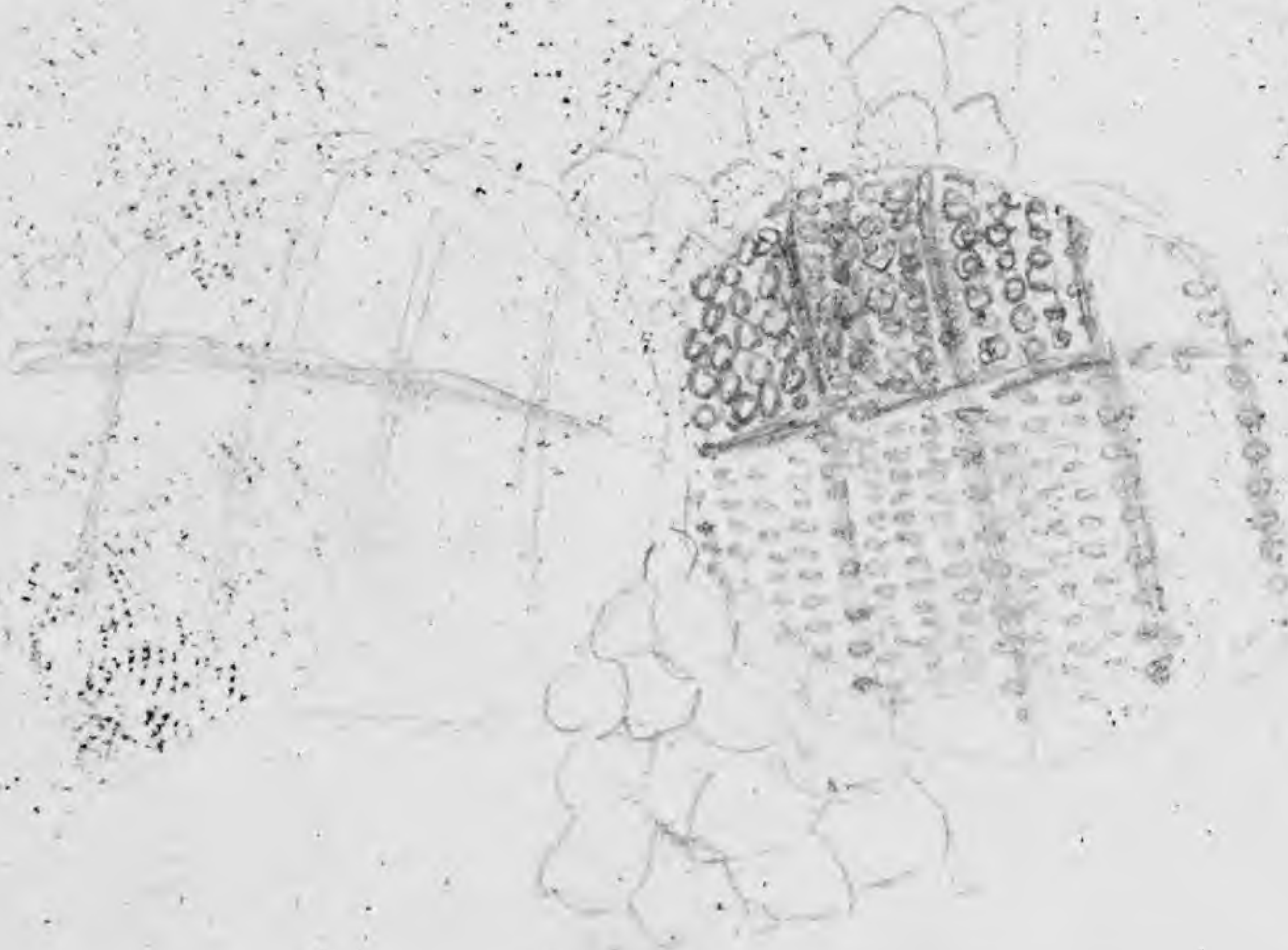
x 30



sect of diffr  
leaf

x 30

x 30



x 150



0 1 2 3 4 5 6 7 8 9 10

cm

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**Leitch & Corlies**

**CORRIGANS**

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0 1 2 3 4 5 6 7 8 9 10

cm

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*Abies Apollinis*

Octob 5 1870



incomplete scale, (near base of cone?)  
very convex

26 : 14 = 3 <sup>3</sup>/<sub>4</sub> : 2



immature  
or undeveloped

АБОТНЕОДЪЪ ѿ БНАВНВОДНО  
ГЕНЕРАЛЪ ГЕНЕРАЛЪ  
ГЕНЕРАЛЪ ГЕНЕРАЛЪ



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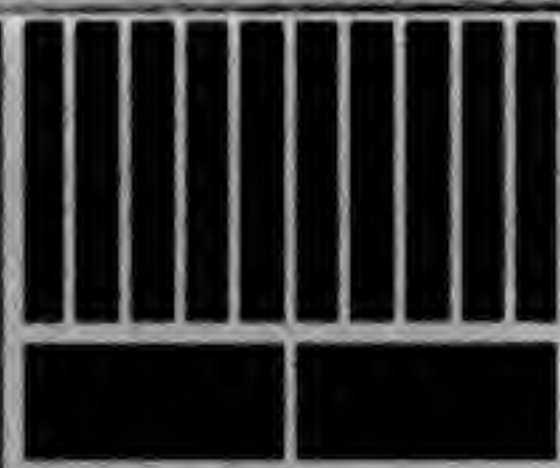
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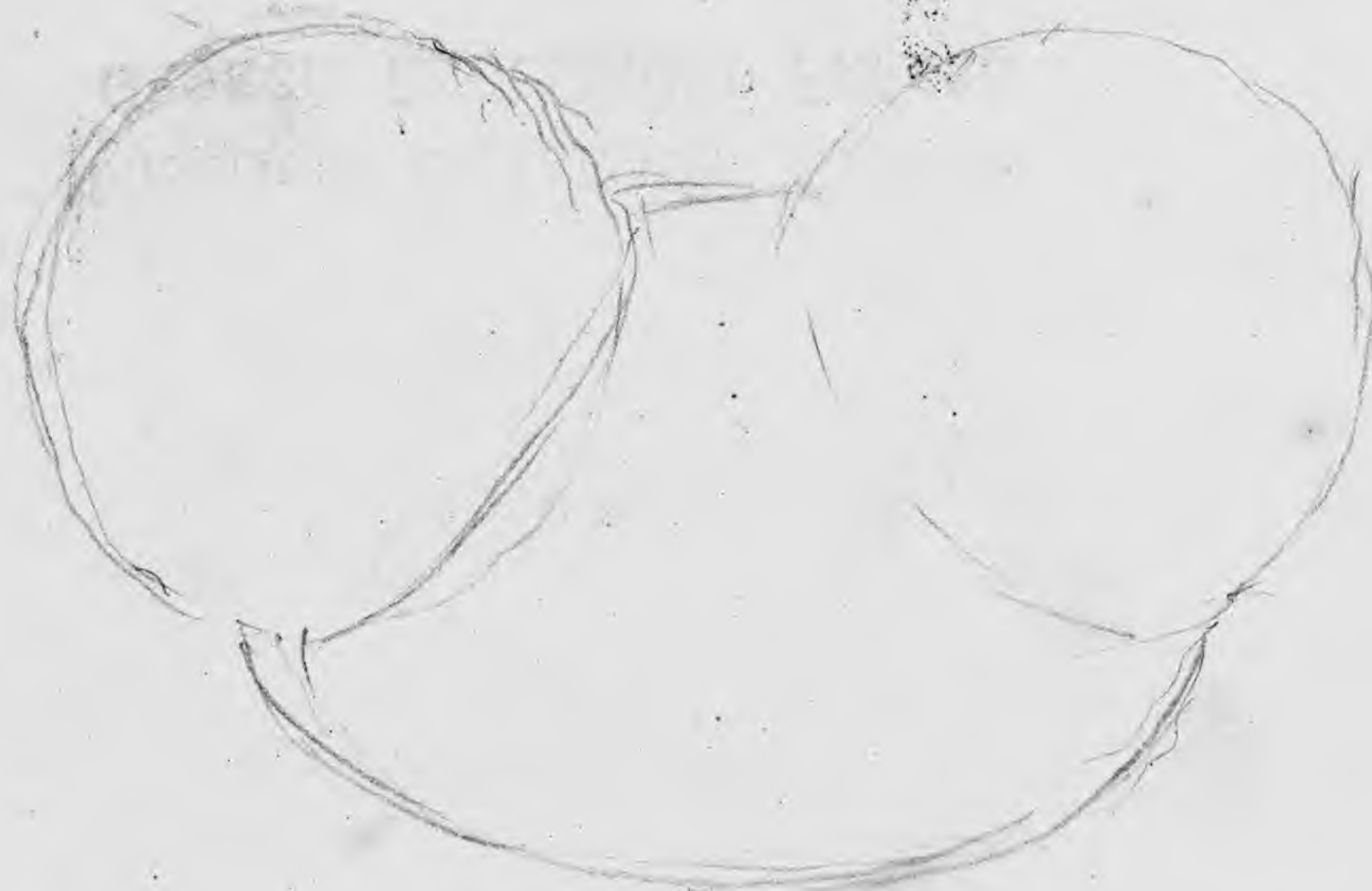


*Abies Apollinis* July 7 1865  
Africa, Heldreich Herb. Grac. no. 604. (ex Hb. Casson)

small  
ament  
nut size



5 lines  
9-10 mm long  
without stipe



$$\frac{26 - 29.6}{415} = 0.063 - 0.072 \text{ lin}$$

$$\frac{55 - 62}{415} = 0.132 - 0.149$$



anther x 10



0 1 2 3 4 5 6 7 8 9 10

cm

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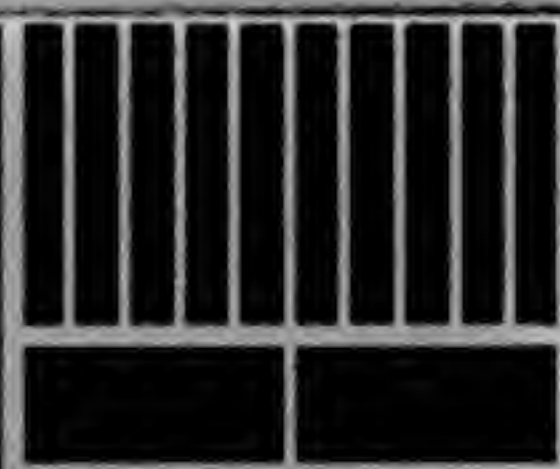


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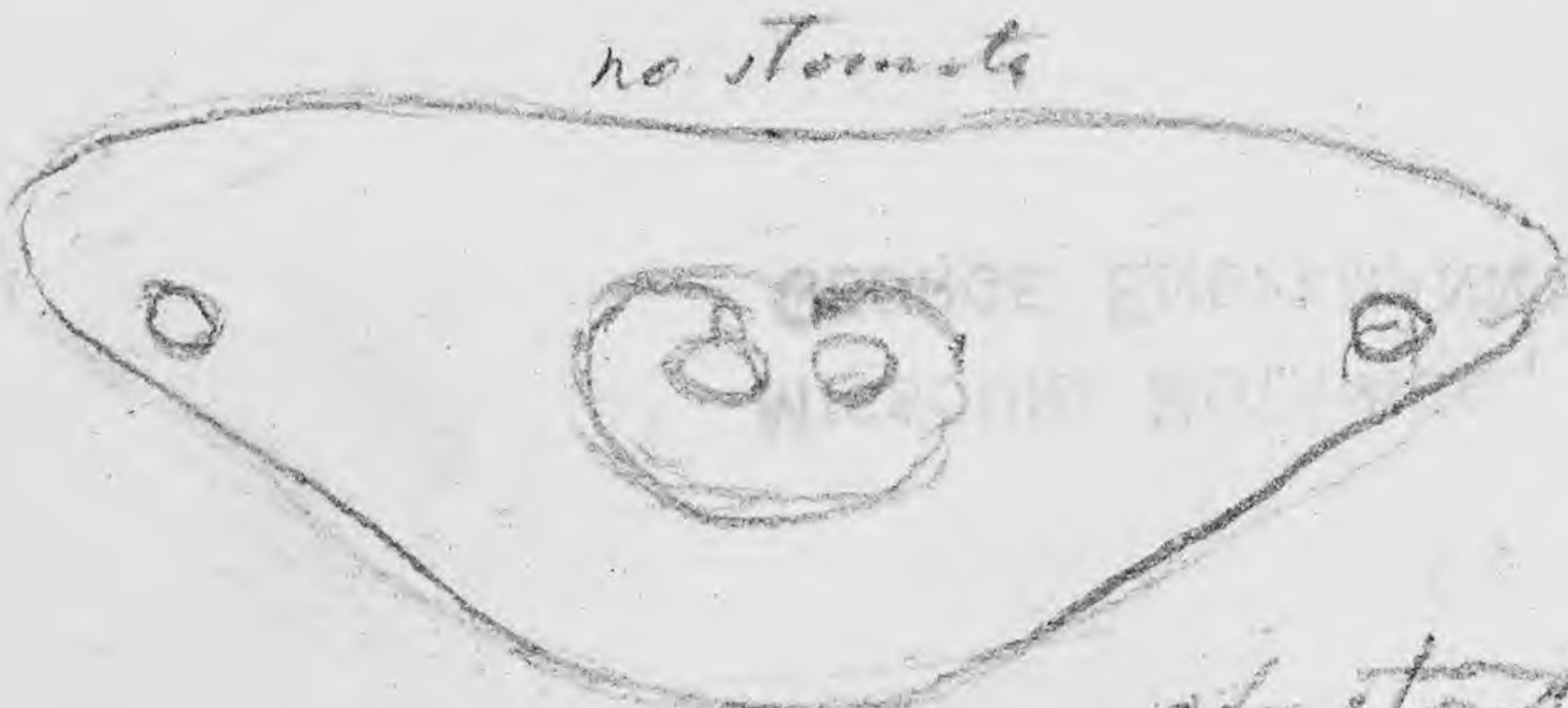
*Abies Cephalonia Loud.*

Octob 6 1875

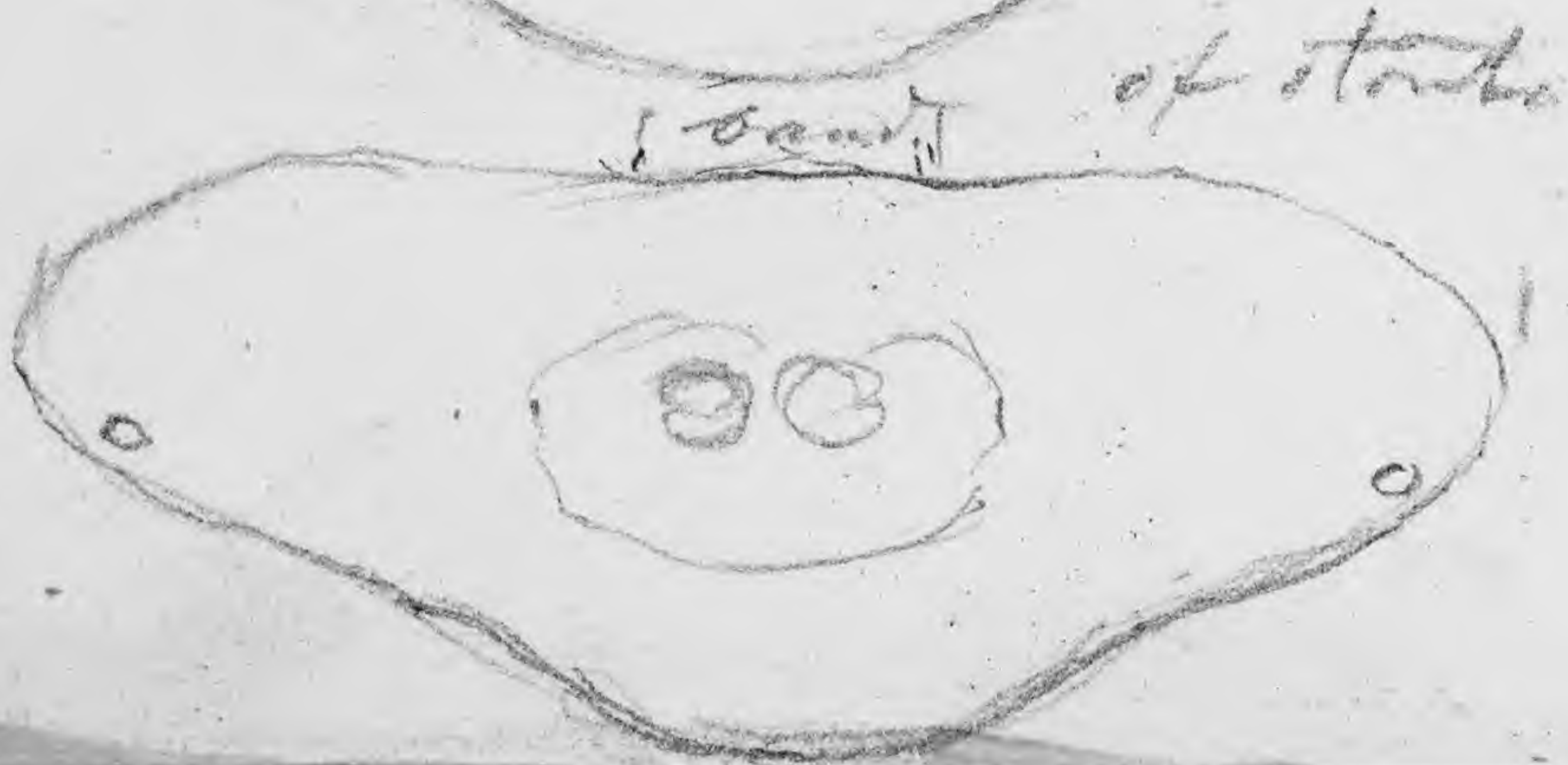


x30

Dropmore Park 1869



Villa Demidoff 1868  
Florence

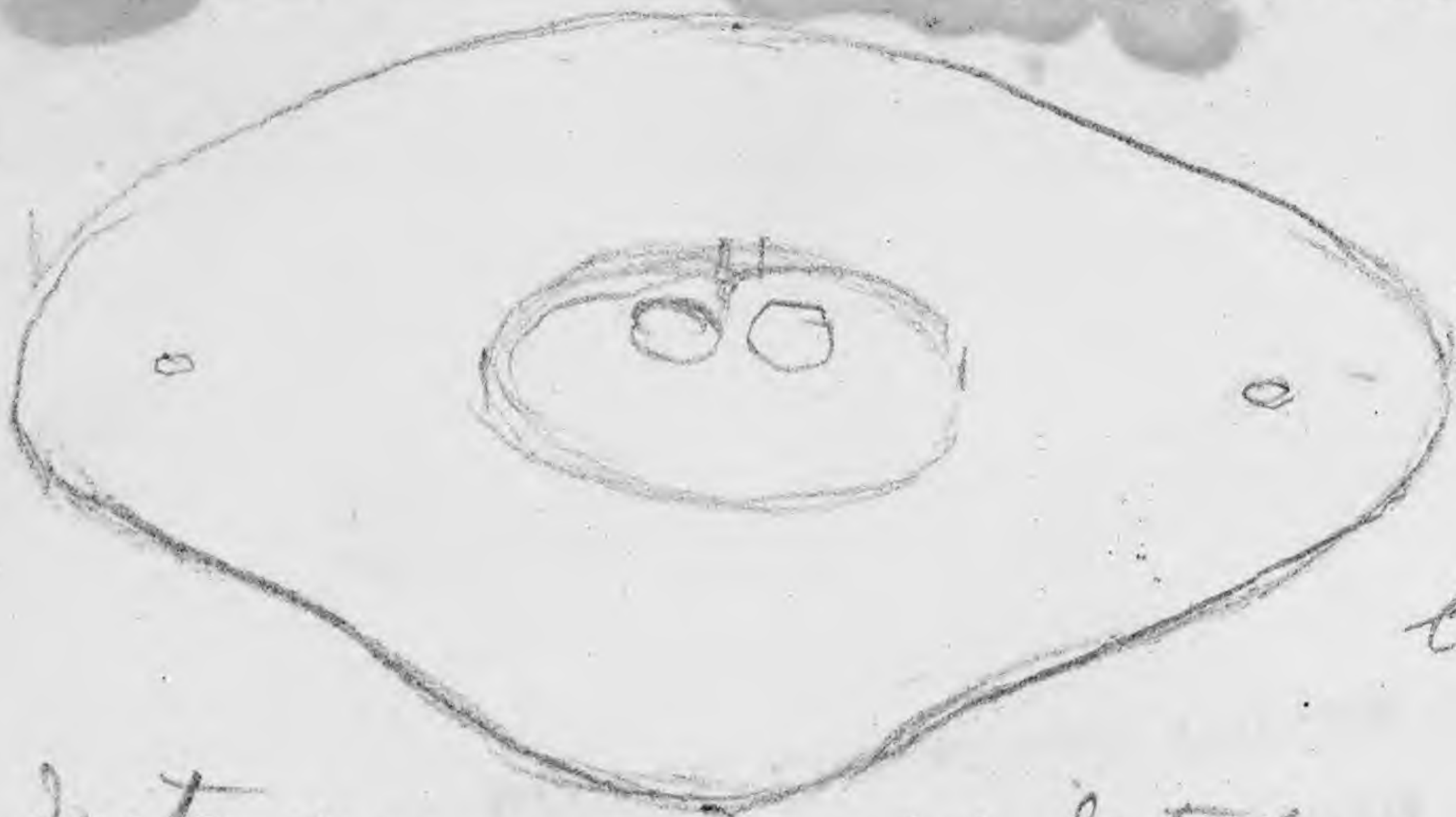


Hale Branch

♂  
Heldreich  
Cephalonia

cross with stomata

1861



leaf of fertile branchlet

ducts very small but distinct  
in mesenchyme.



0 1 2 3 4 5 6 7 8 9 10

cm

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13095B

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LEITCH,

PHARMACEUTIST

& Olive Sts. St. Louis, Mo.

13095A

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cm

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*Albiz Regiacea Anacardiaceae*

July 6. 1865

Aradia Greene 26 April 1861 (Herb Cass.)  
Heldreich, Herb. Grac. normal 803.

||

Pollen x 415

not well soaked, unripe.

0.062 - 0.066 lin

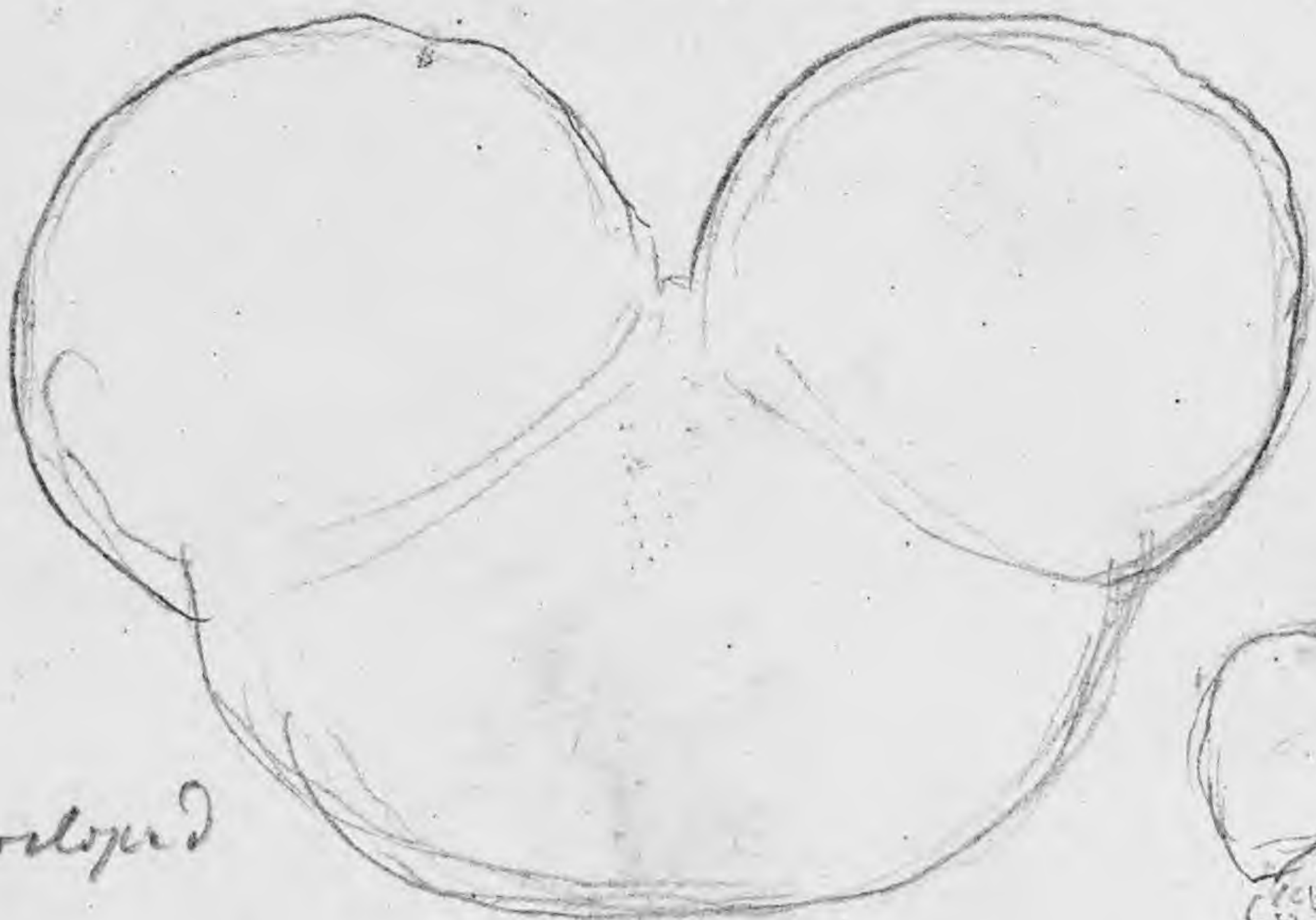


male anther  
nat. size

9-10 lines long

20 mm long

stipe not yet developed



$\frac{57.5 - 58}{415}$

= 0.032 - 0.140

mm



anther x 10



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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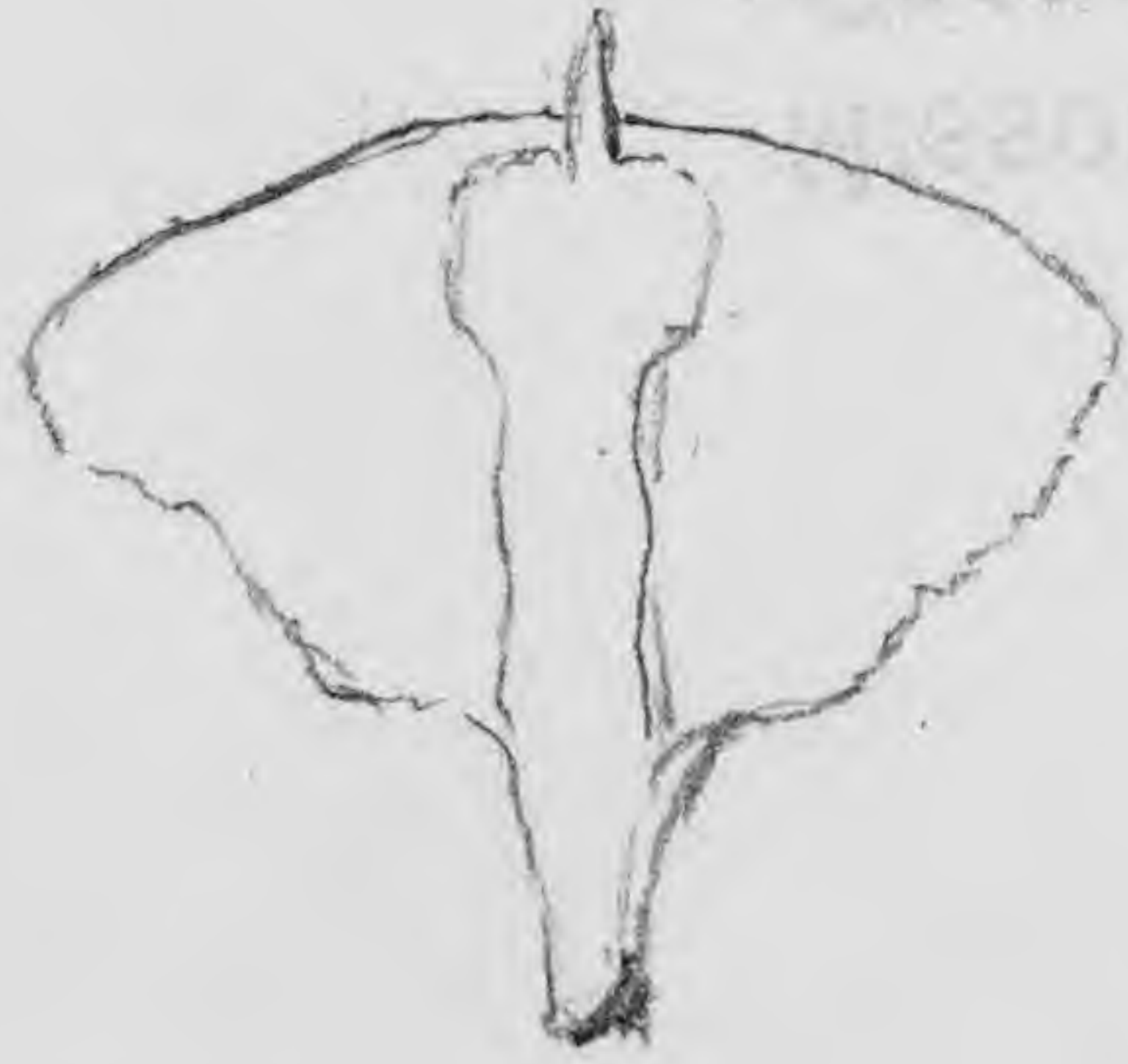


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*Abies Reginea Amalicae*

Octob 5<sup>th</sup> 1870



scales 27 : 15<sup>mm</sup> =  $3\frac{1}{2}$  : 2



4 1/2 : 7  
2 1/2  
2 1/2



0 1 2 3 4 5 6 7 8 9 10

cm

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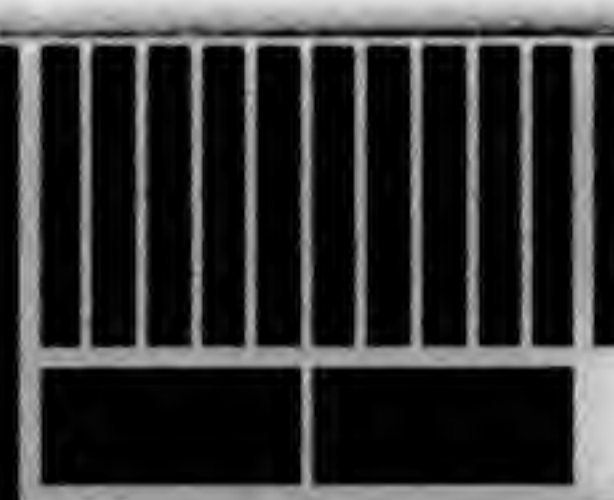


1850

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0 1 2 3 4 5 6 7 8 9 10

cm

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