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THESIS

List and Life History of the
Cultivated *Pteris* and
Adiantum Ferns

Mina B. Fuller

E. Winifred Cannel
1902

Ferns



*List and Life History of the Cultivated
Pteris and Adiantum Ferns.
Adiantum*

THE S I S
of
M I N A B. F U L L E R,
and
E. W I N I F R E D C A N N E L.

THESIS

LIFE HISTORY OF A FERN.

The spores of a fern are to be found on the back or under side of the fronds. If we take a fertile frond of the *Pteris* or *Adiantum* we will find the edge of the frond folds back over the sporangia to form the indusium. In the *Pteris*, this is in a continual row, often stopping before the apex of the frond is reached. In the *Adiantum*, the edge forms dots.

A frond will take about eight months to ripen. After the frond ripens, the edge will contract from the sporangia. These sporangia are stalked cases and have a ring of cells around them which is more elastic than the other cells of which the case is composed. When the spores are ripe this ring contracts, the case opens, and the ripened spores fly off like dust. If these light on a damp brick wall or sand, they are in the right conditions for developing. The spores develop into prothalli. These prothalli are held in place by little hairs which also serve the same purpose as stamens and pistils in flowering plants.

LIFE HISTORY OF A FERN.

The plant then grows from the prothalli. The first frond is very small and of different shape, there being only one pinna to it. The second frond is an enlargement of the first division into a number of pinnae and so on. The new fern is now ready to grow and ripen its new frond.

CONDITIONS UNDER WHICH THE EXPERIMENT WAS
CARRIED ON.

The experiment was intended to observe the length of time and conditions of moisture and temperature for generating a new fern from a ripened frond. This we did in a room on the north side of the greenhouse. A shelf was covered with fine white sand; on this we placed inverted flower pots containing numerous fertile fronds, keeping them moist and covered with glass. When the spores had all discharged, we removed the withered fronds and waited for the development of the spores. The average temperature was about 76° F. the variation being generally between 70° and 80° , but on one occasion it fell nearly to 60° and on another it rose to about 90° . We first put the fronds in on Jan. 24th; the first indication of a prothallus appeared about April 6th. Before this there had appeared a greenish scum on the flower pots which furnished a good field for growth in case of aliantums and on the sand. This scum was the earliest stage of development.

The pteris ferns did not grow on flower pots.

LIST OF CULTIVATED PTERIS FERNS.

1. *P. acutilina*--Tropical and temperate regions.
2. *P. Argenta*-----
3. *P. Argenta*-----Maderia.
4. *P. Argyrea*-----All tropical regions.
5. *P. Aspericaulis*-----India.
6. *P. Atrovirens*-----Guinea Coast and Angola.
7. *P. Aurita*-----
8. *P. bicaurita*-----Tropics.
9. *P. Brasilensis*-----Tropics and South America.
10. *P. collina*-----
11. *P. comans*-----East Indies.
12. *P. concinna*-----
13. *P. crenata*-----
14. *P. Cretica*---Tropical regions to central Fla.
15. *P. Crispa*-----
16. *P. Curreri*-----Western tropical Africa.
17. *P. decipiens*-----Hawaii.
18. *P. decora* Hook-----Hawaii.
19. *P. excelsa* Gaud-----Hawaii.
20. *P. Grandifolia*-----
21. *P. internata*-----West Indies to Brazil.
22. *P. longifolia*-----Mexico, Florida.

LIST OF CULTIVATED PTERIS FERNS.

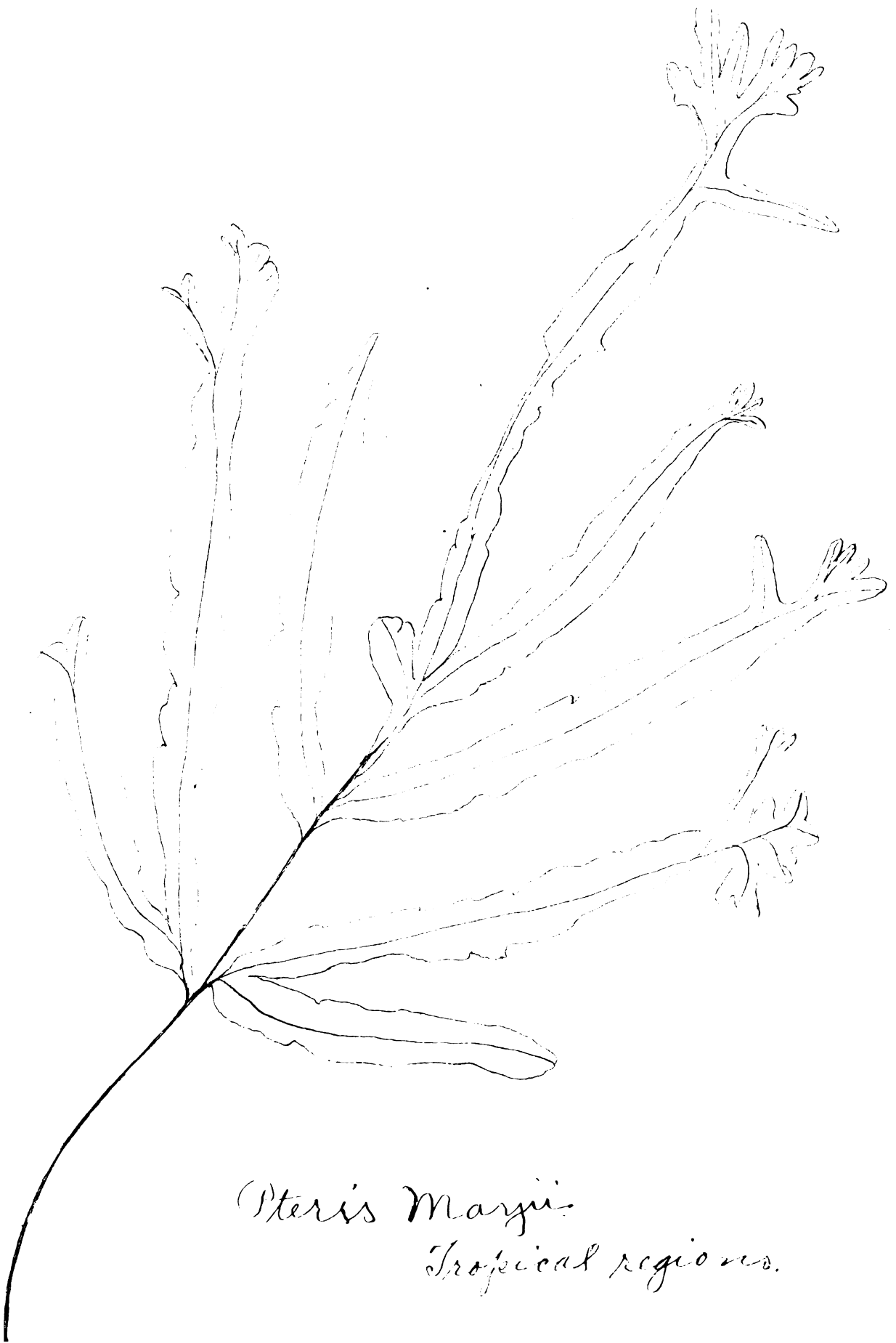
- 23. *P. Mayii*-----Tropical regions.
- 24. *P. podophylla*-----Swartz, Mexico.
- 25. *P. pungens* -----Trinidad.
- 26. *P. quadrinervis*-----Mexico.
- 27. *P. regularis*-----Hawaii.
- 28. *P. serrulata*-----China and Japan.
- 29. *P. Sieboldii*-----
- 30. *P. scaberula*-----New Zealand.
- 31. *P. umbrosa*-----Australia.
- 32. *P. Winsetti*-----

CULTIVATED ADIANTUMS.

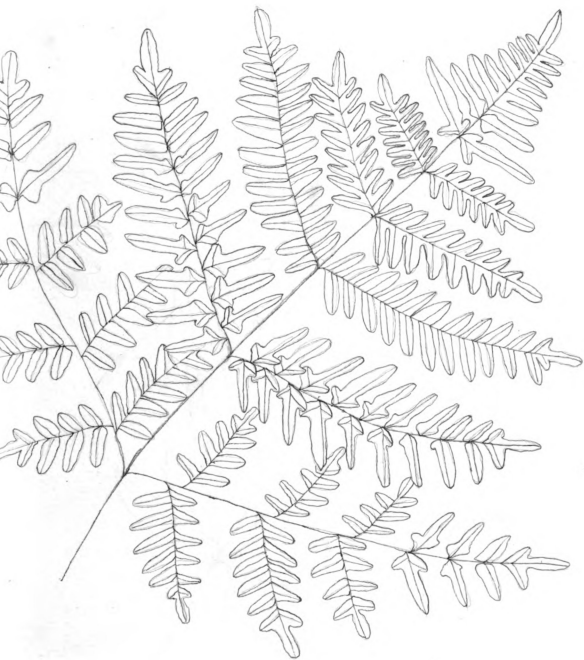
1. A. acuminatum-----Brazil.
2. A. aethiopicum-Spain and almost cosmopolitan.
3. A. affine-----New Zealand.
4. A. aneitense-----Aneiteum Isles.
5. A. Bausel Hybrid Trapeziform and decorum----
6. A. bellum-----Bermuda.
7. A. Capillis veneris-G.B. and world wide dis.-
8. A. caudatum (tailed)-----Tropics.
9. A. Colpodes (deep hollow) --Ecuador and Peru.
10. A. Cuneatum (wedge shaped)-----Brazil.
11. A. C--Lawsonianum-----
12. A. C--randulum (neat)-----
13. A. decorum-----Peru.
14. A. diaphanum (transparent) S. Eur., China, N.Z. et.
15. A. digitatum (finger leaved)-----Peru.
16. A. emarginatum-----California.
17. A. e multifidum-----
18. A. formosum-----Australia.
19. A. fulvum-----New Zealand.
20. A. glaucophyllum (grey leaved)-----Mexico.
21. A. gracillimum-----
22. A. hispidulum (hairyish)---Old World Tropics.
23. A. Legrandii-----

CULTIVATED ANDIANTHUS.

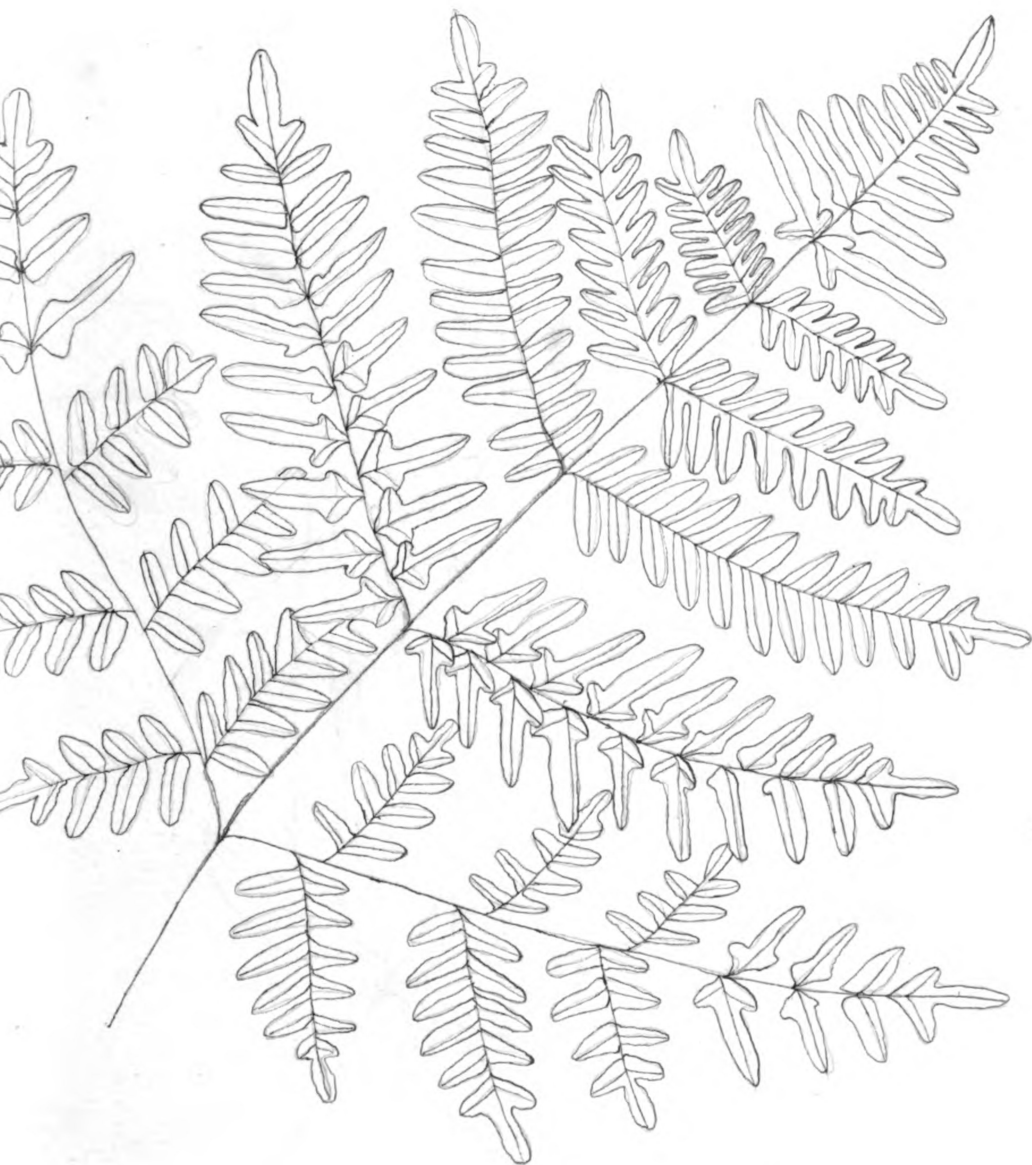
24. A. hubertianum-----
25. A. monochlaums (one covered)-----
26. A. Mocrei-----Andes Peru.
27. A. Moritzianum-----North America.
28. A. palmatum (?)-----Peru.
29. A. pedatum-----N. Hindostan, U.S.
30. A. reniforme-----Maderia.
31. A. rubellum (reddish)-----Bolivia.
32. A. tenerum (?) (tender)-----Mexico.
33. A. t-Farleyense-----Barbadoes.
34. A. tinctorum (tinted)-----Tropical America.
35. A. trapeziforme (?) (Thorb-leaved)-----W. I.
36. A. venustum (charming)-Himalayas up to 8000ft.
37. A. Williamsii-----Mts. of Peru.
38. A. Farleyense-----
39. A. Hensloiana-----California and Peru.
40. A. Concinnum-----Guadalajara.
41. A. convolutum-----Mexico.
42. A. cristatum-----Los Angeles.
43. A. denuticulatum-----Porto Rico.
44. A. fragile-----Porto Rico.
45. A. Macrophyllum-----Tropical America.
46. A. polyphyllum-----Trinidad and Columbia.
47. A. villosus (hairy-stalked)-----West Indies.



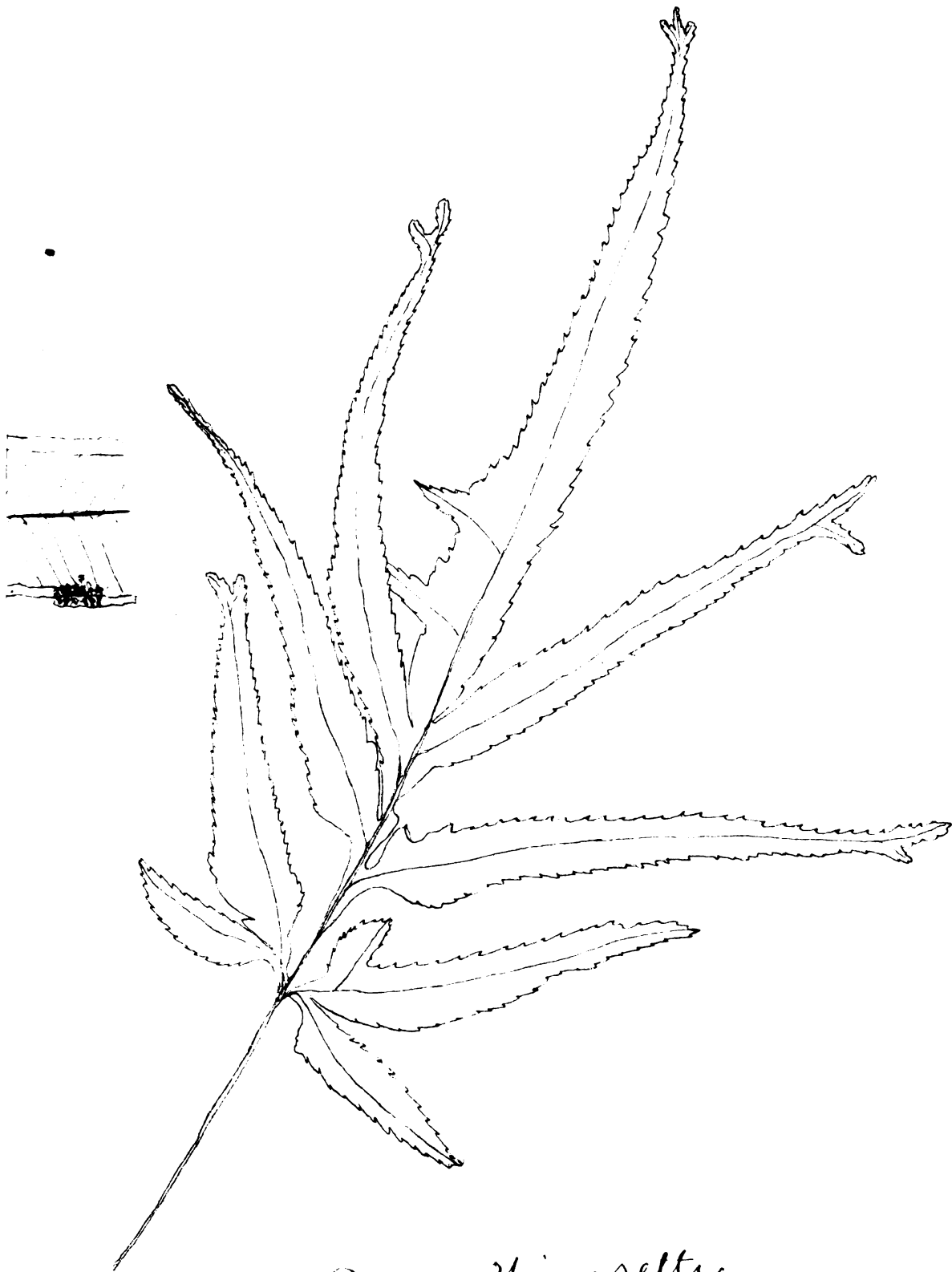
Pteris Margin
Tropical regions.



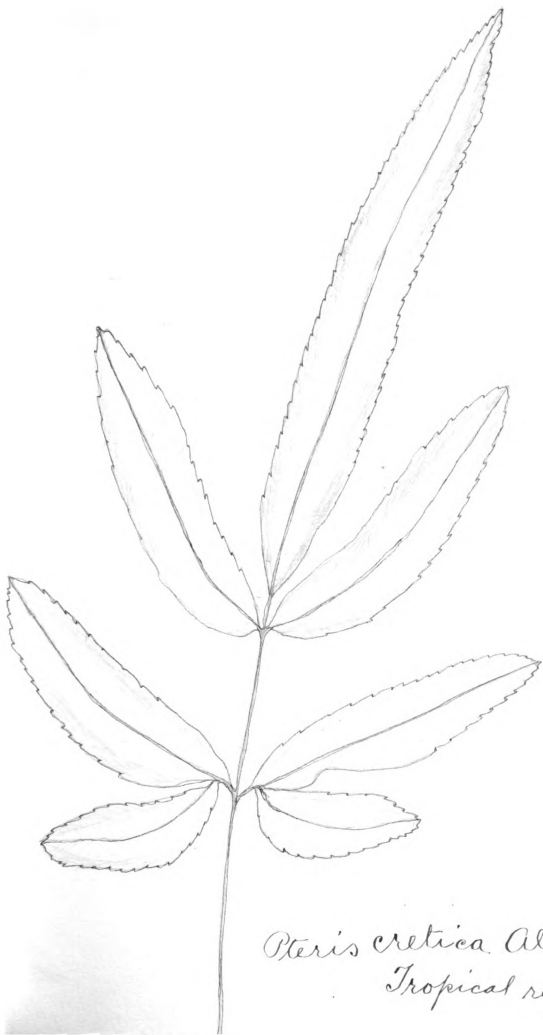
Pteris Aquilina.
Tropical and temperate regions



Pteris Aquilina.
Tropical and temperate regions.

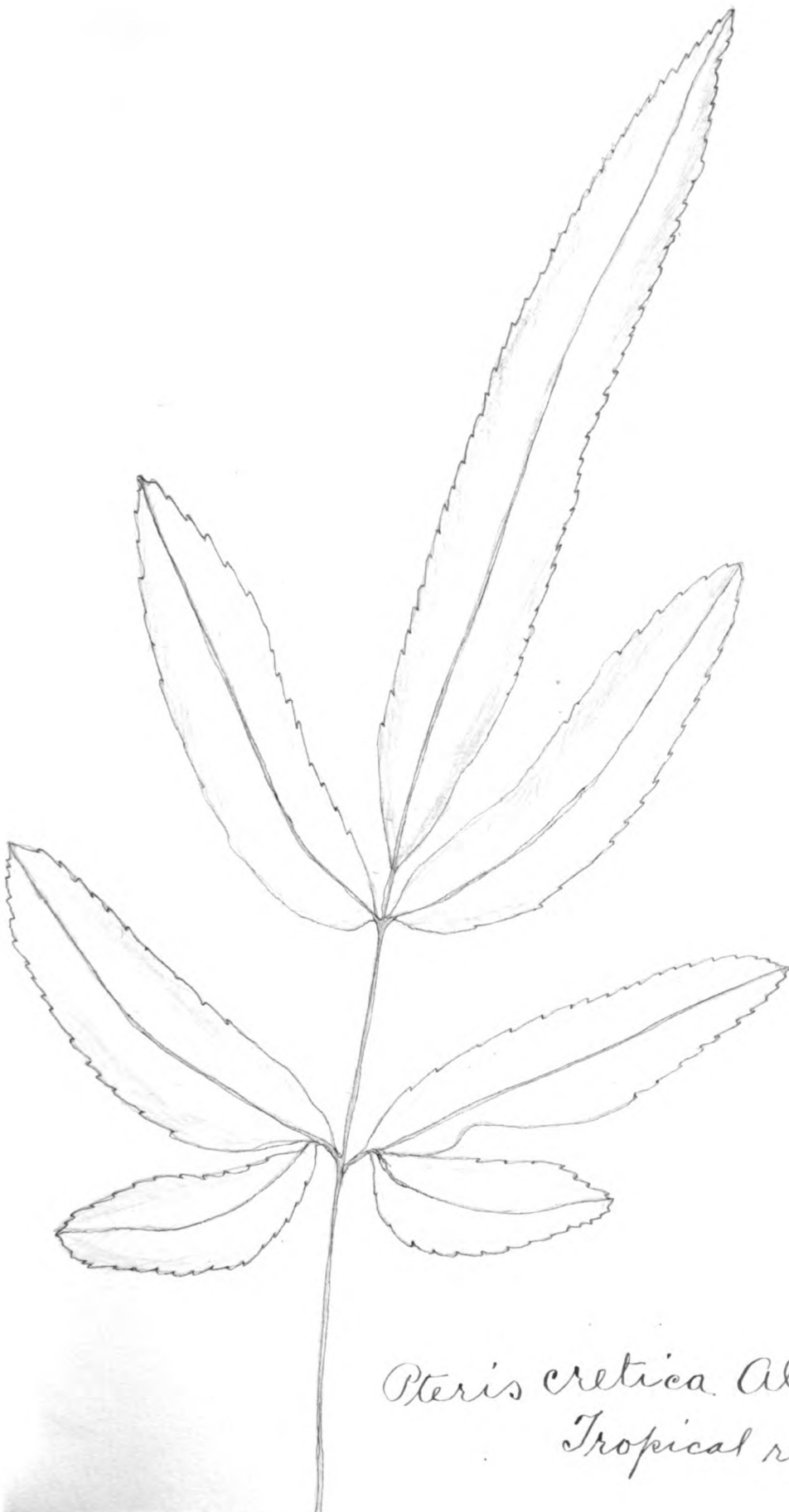


Pteris Wimsettii



Pteris cretica Albo.

Tropical regions to Fla.



Pteris cretica Albo.
Tropical regions to Fla.



Pteris Victoria.
India, Polynesia.



Pteris Argyrea.
All Tropical regions.



Pteris Argyrea.
All Tropical regions.



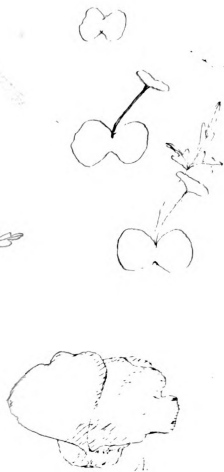
Pteris Serulata Cristata.
China, Japan



Pteris Sieboldi



Pteris argenta.



A. Prothallio.

Pteris tremula,
Australia, New Zealand.

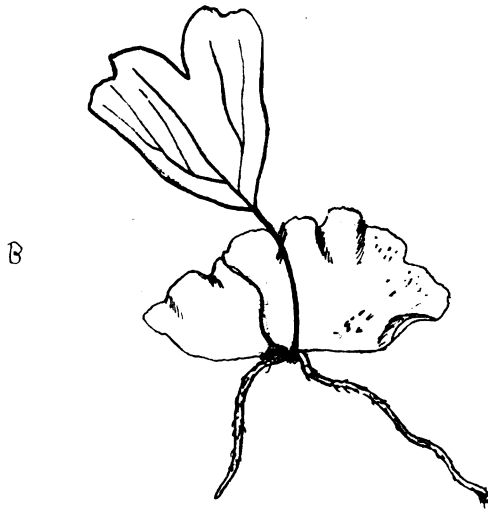
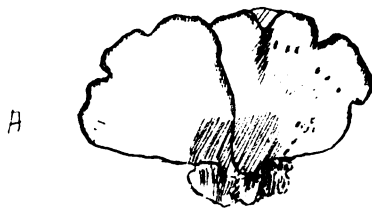


A. Procthallis.

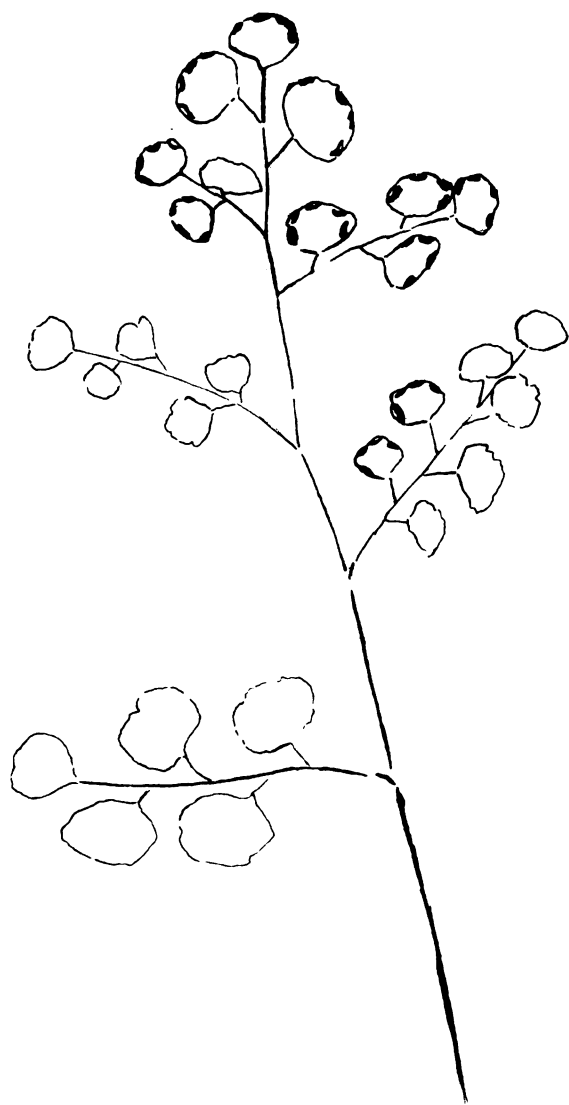
Pteris tremula,
Australia, New Zealand.



Pteris internata.
West Indies to Brazil.



A Prothallis
B. Prothallis with first leaf.



F. emarginatum.

California

Chili

Spain

Almost cosmopolitan.



Apidatum

College Woods.

United States

North Hindostan

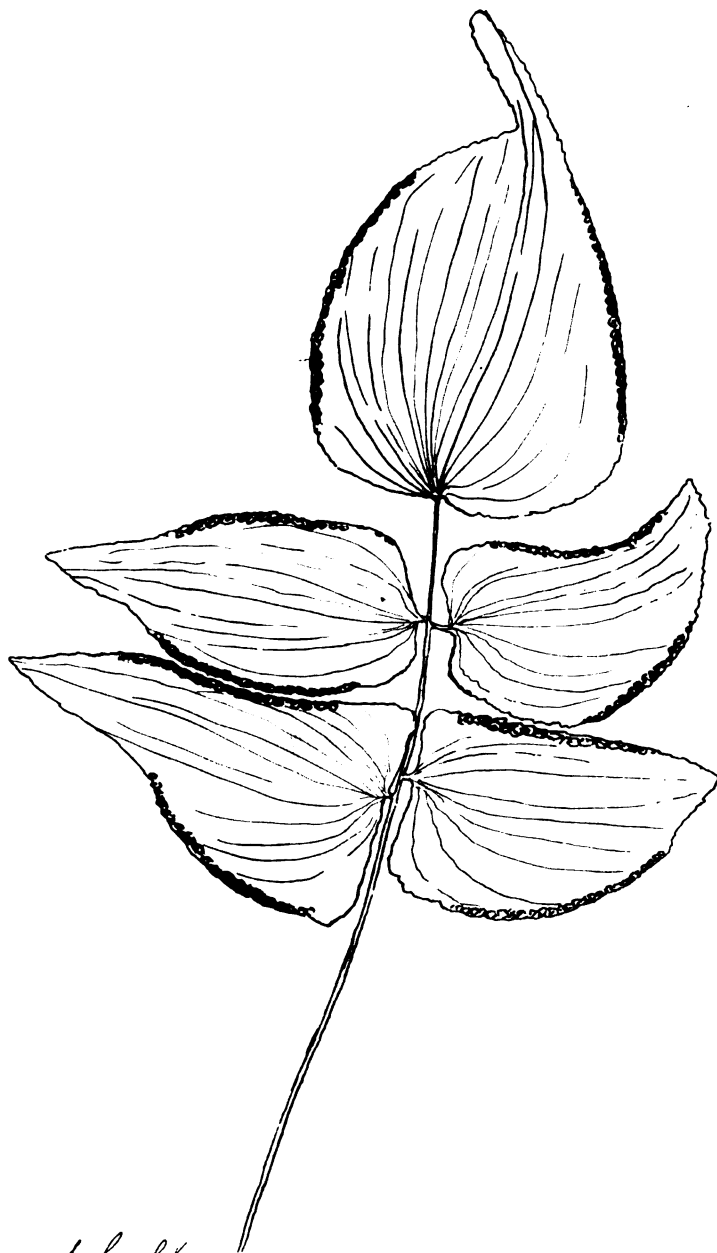


A. pedatum

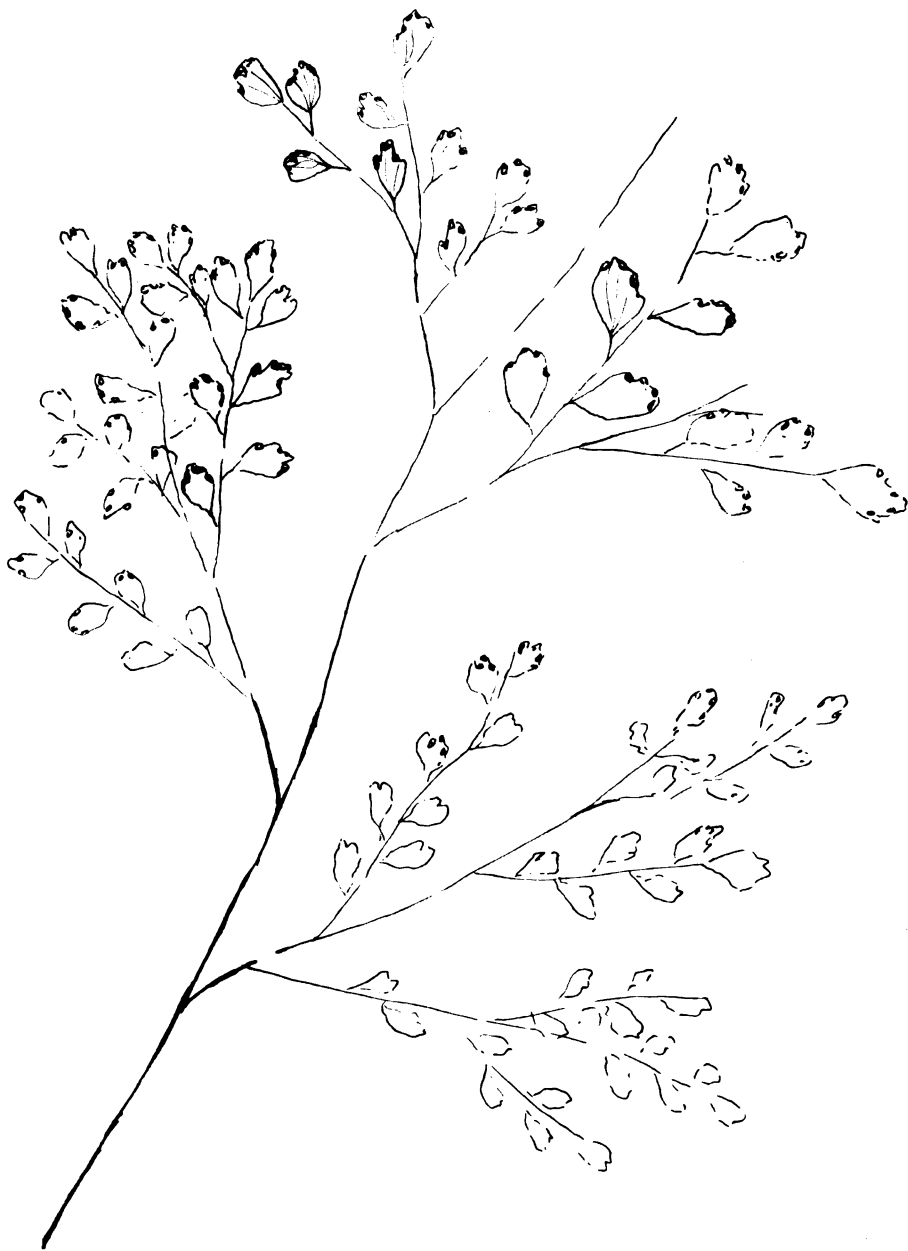
College Woods.

United States

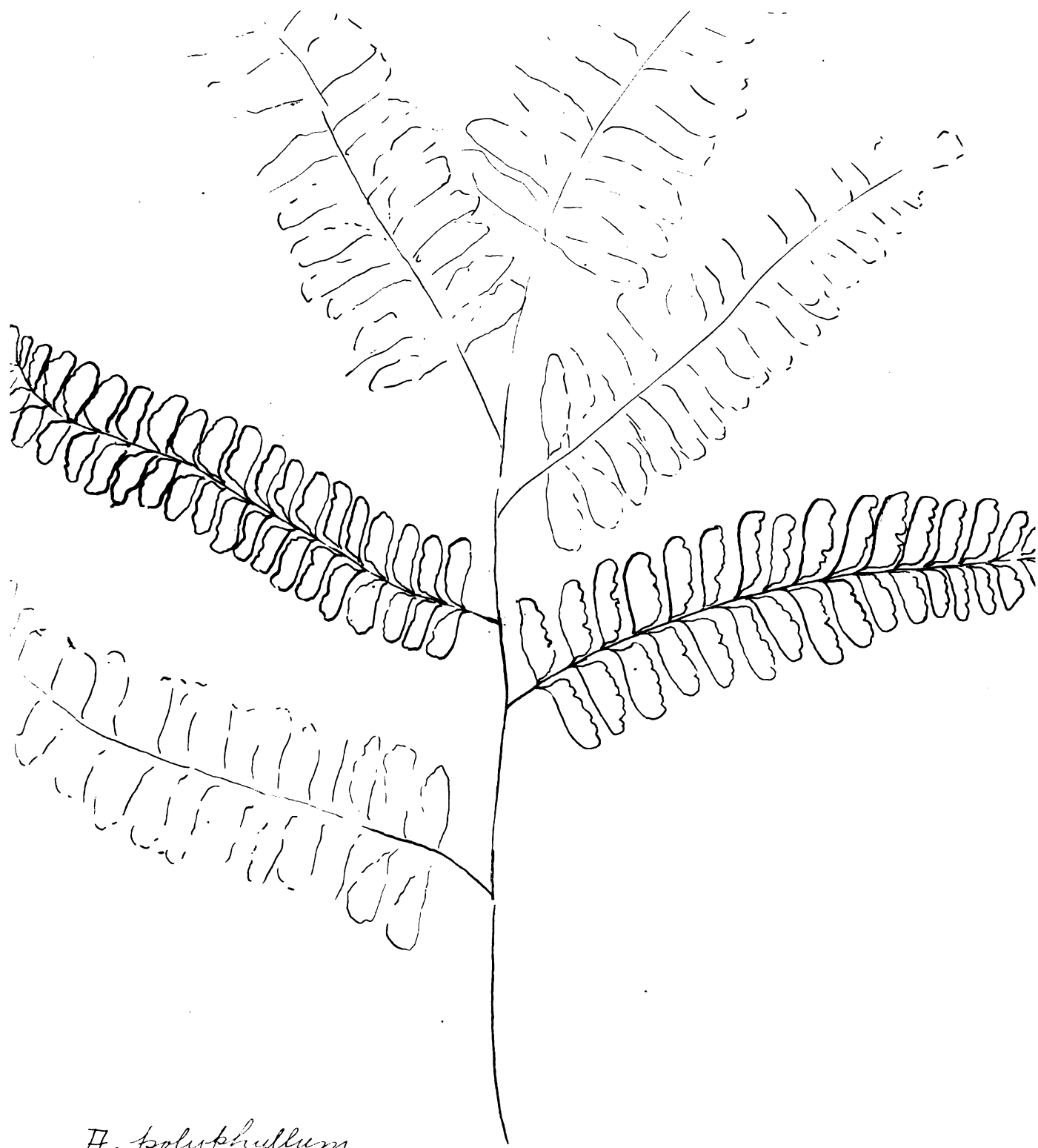
North Hindostan



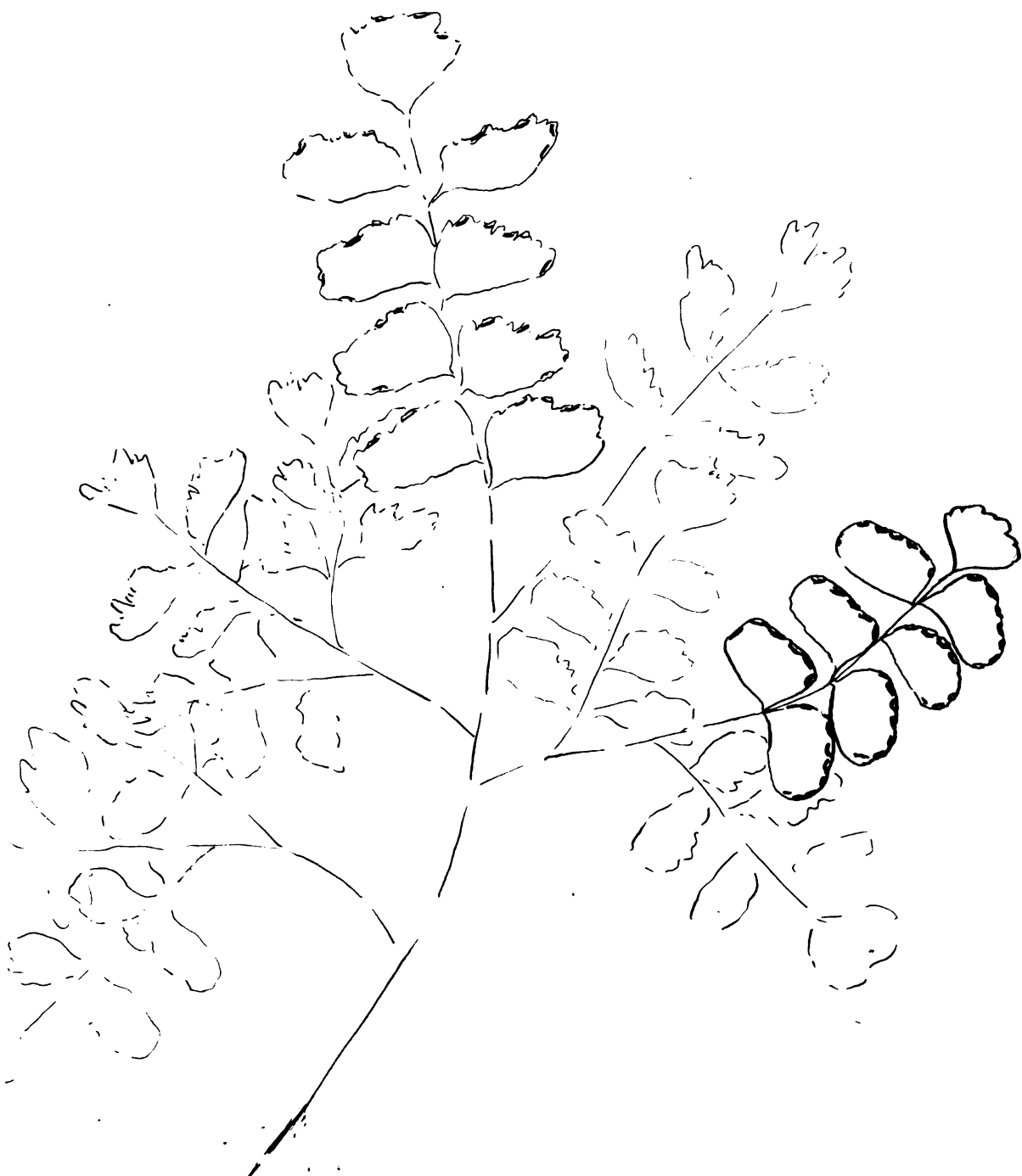
A macrophyllum
Tropical America



A. fragile
Porto Rico



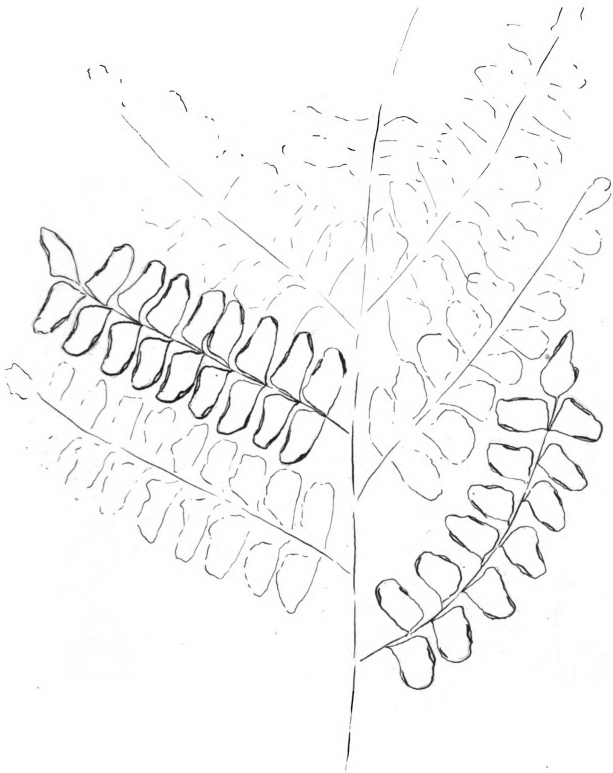
H. polyphyllum.
Trinidad
Columbia



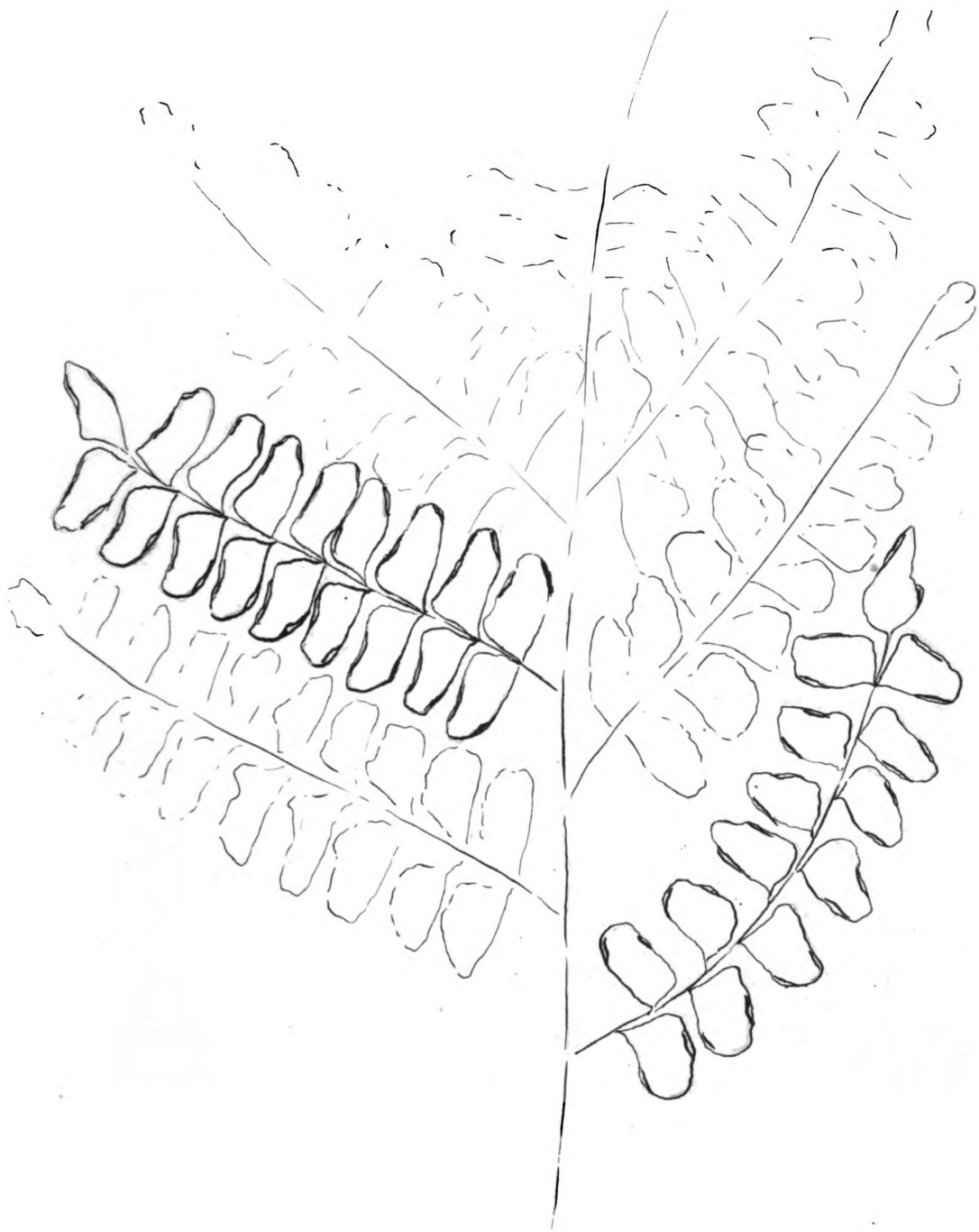
A. tenerum Swz.
Tinidad
Mexico
Widely distributed



A. concinnum
Tropical America.



A. villosum
Met Indies.



A-villosum
Met Indies.



A. denticulatum.
Porto Rico.



A. denticulatum.
Porto Rico.



A. Herosloviana
Columbia
Peru



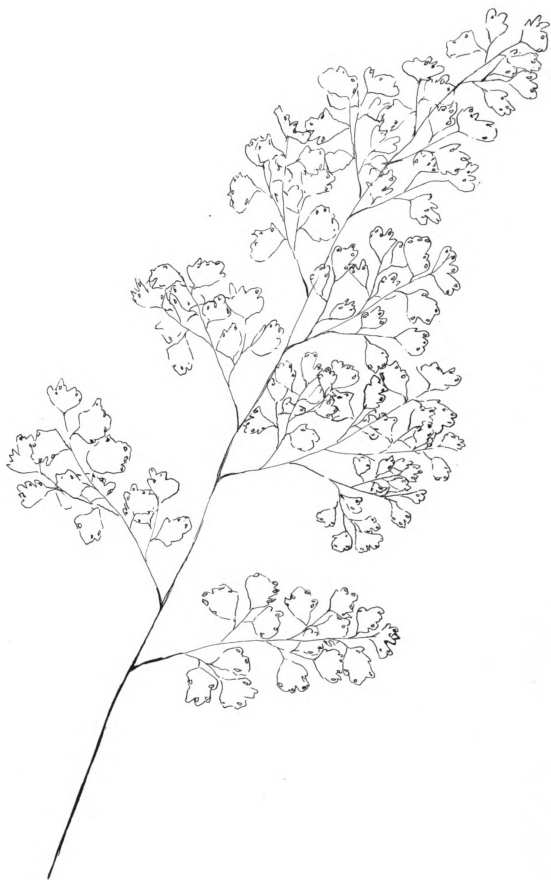
A. Herosloviana
Columbia
Peru

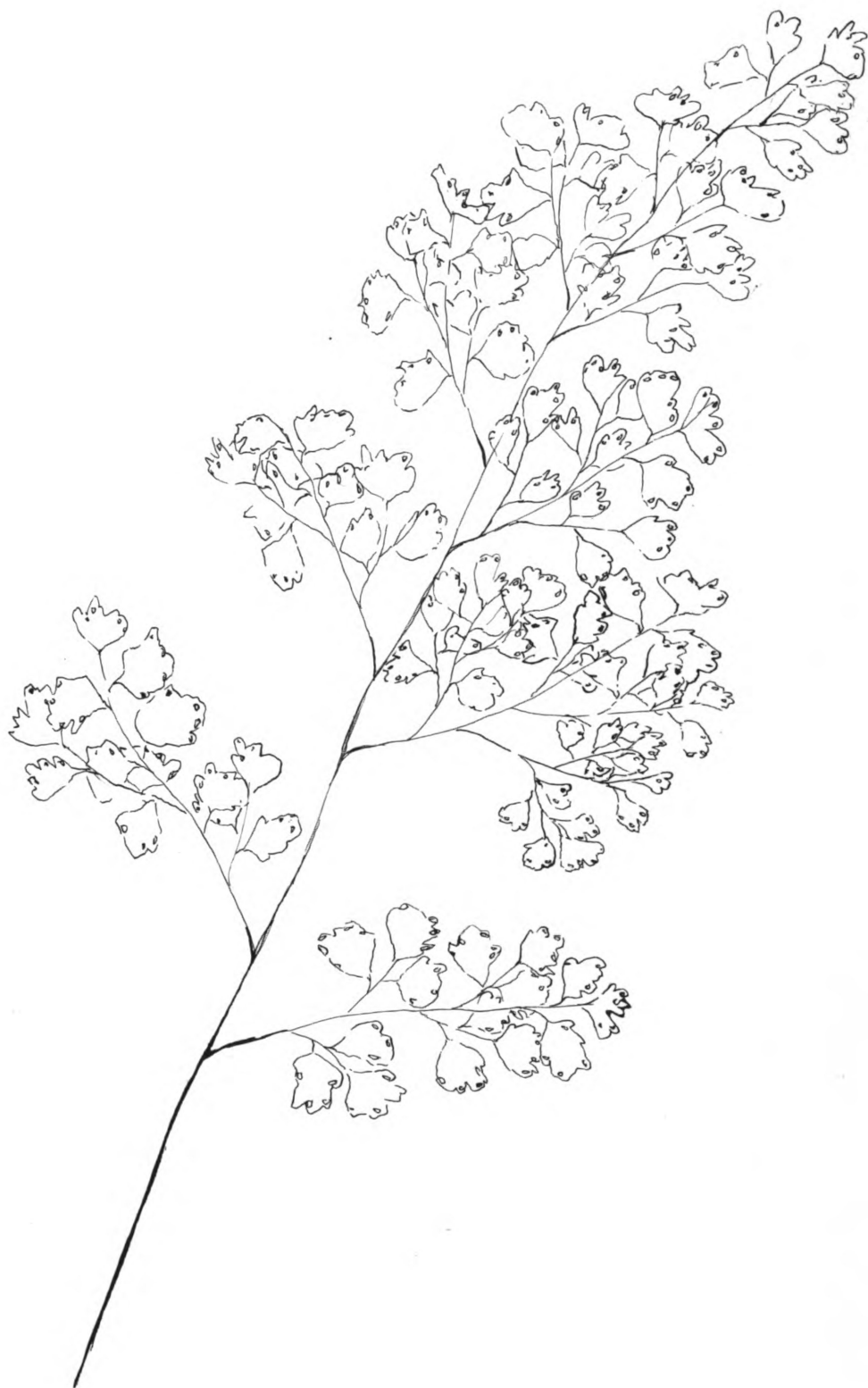
12 -

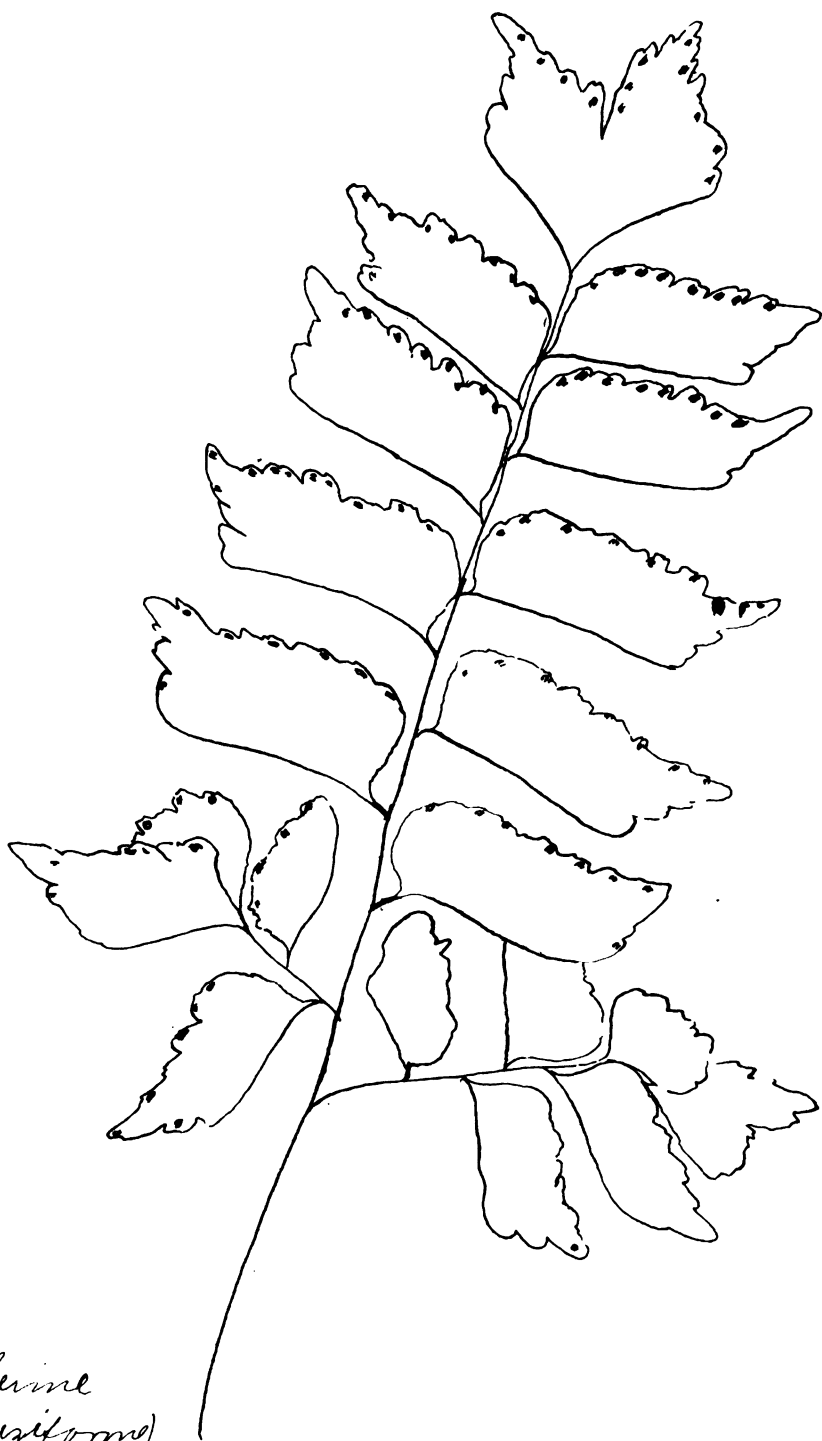


H. bellum

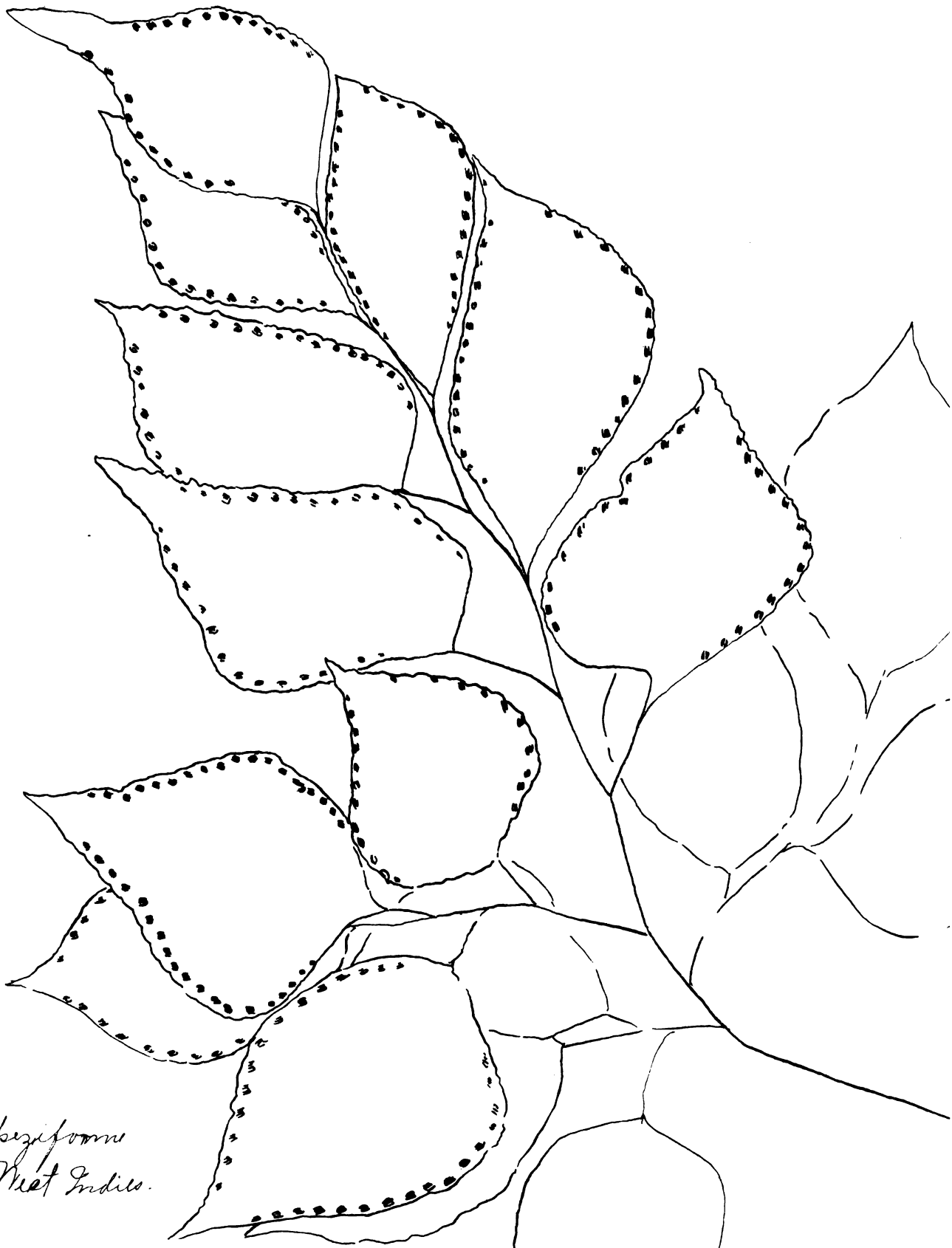
Bermuda.



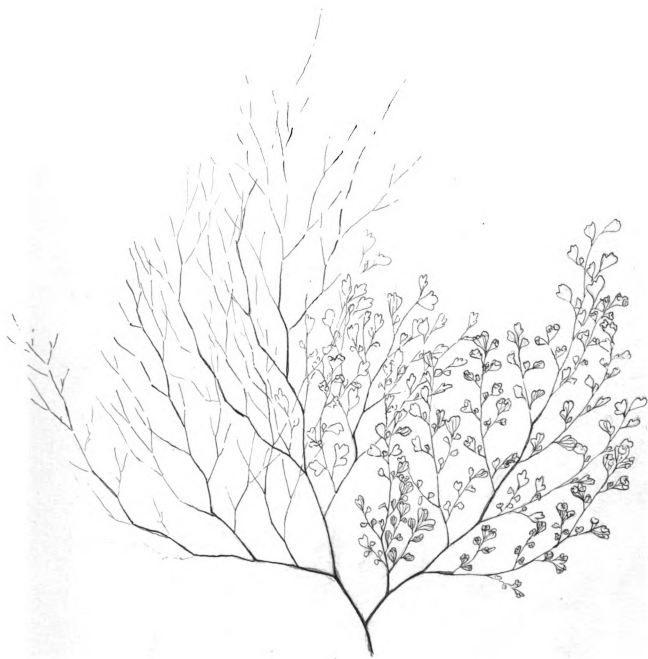




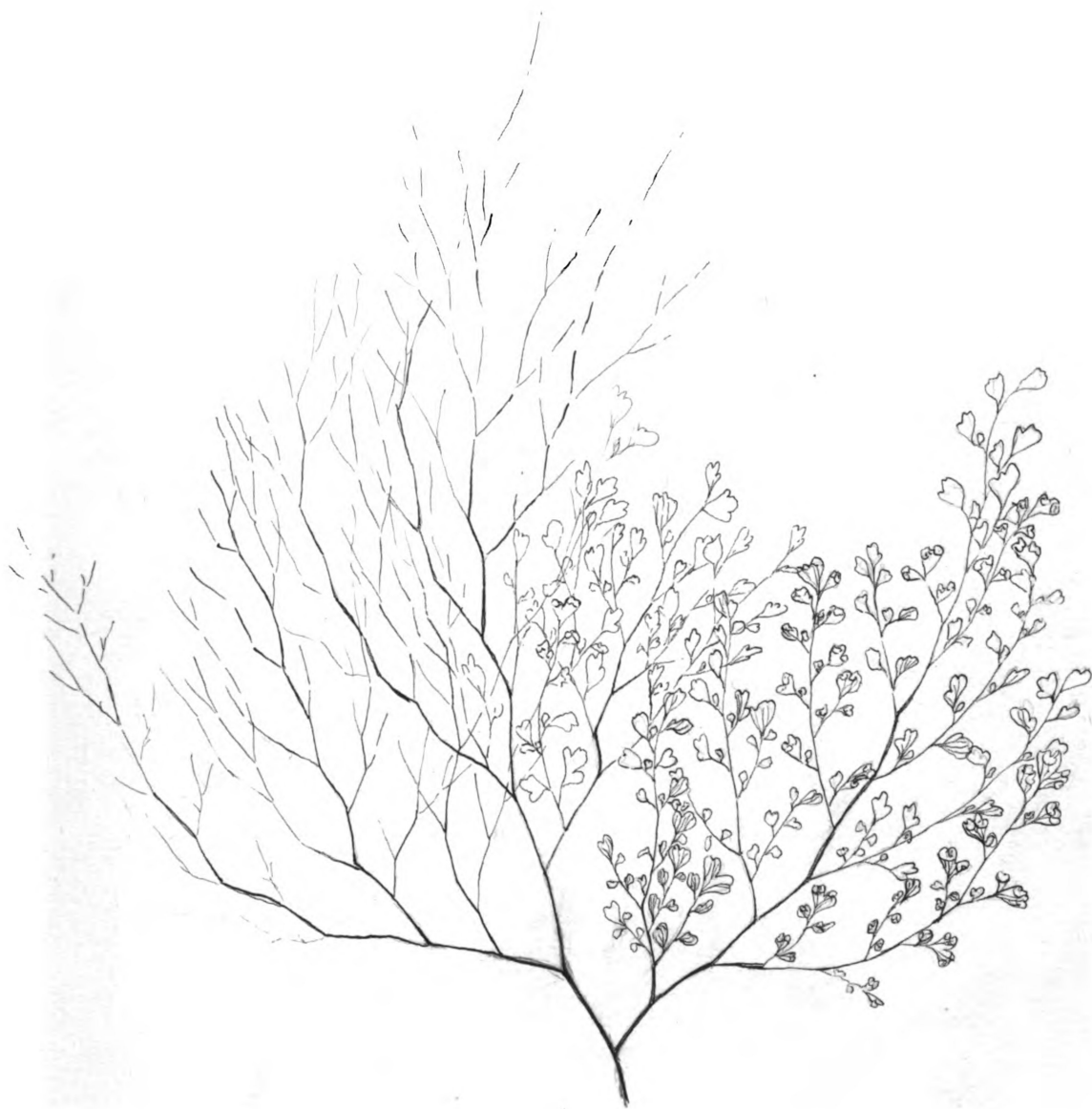
A. St Catherine
(trapeziforme)



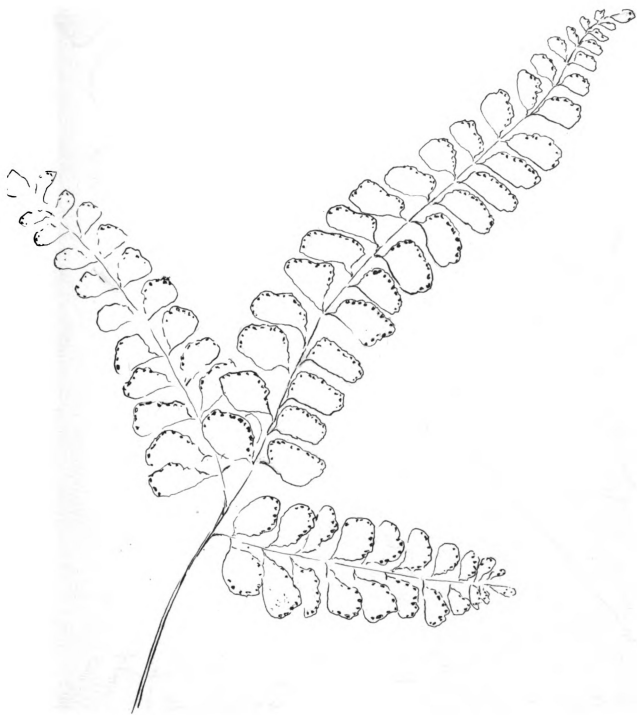
trapeziform
Met Indis.



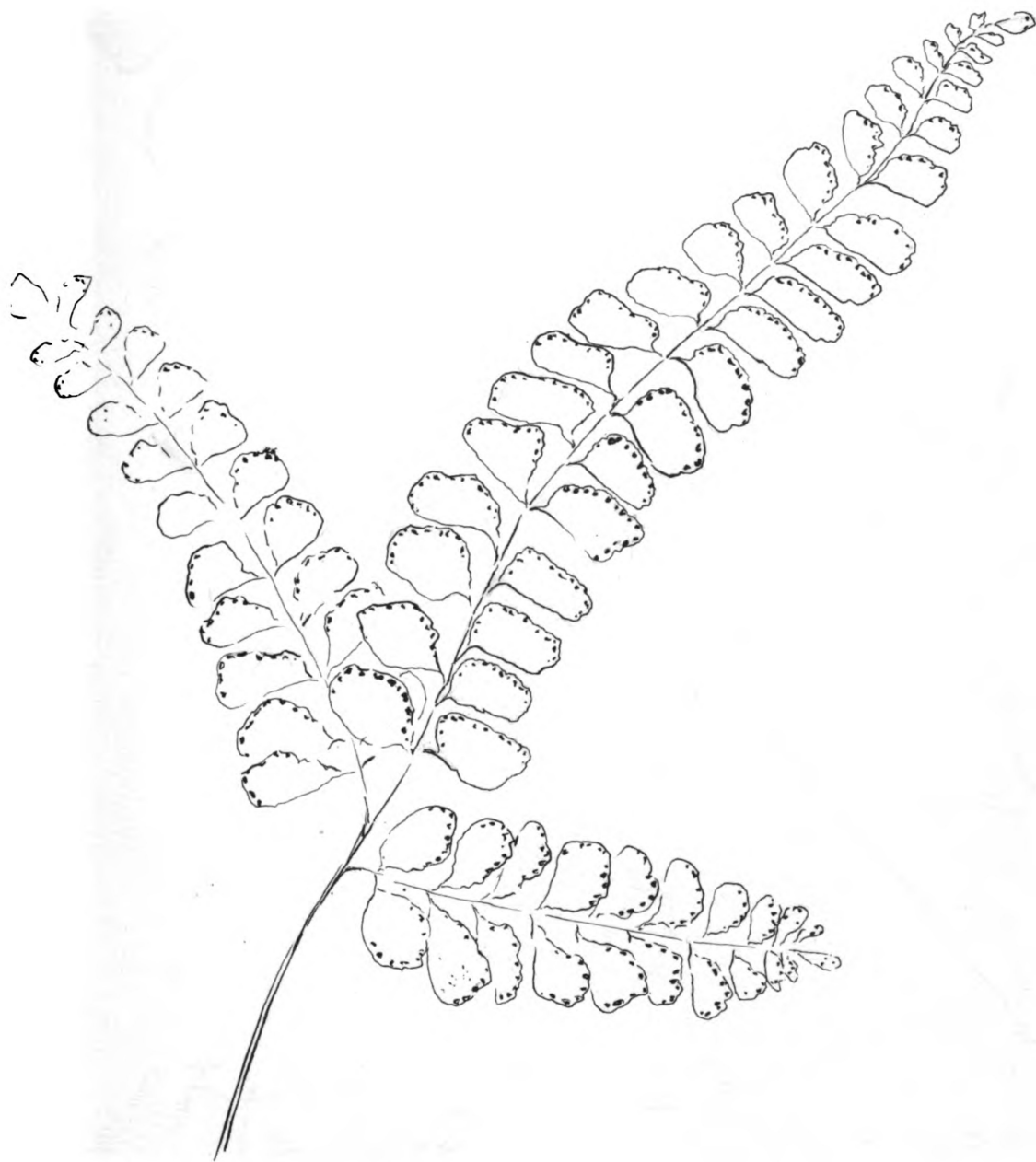
A. gracilimum.



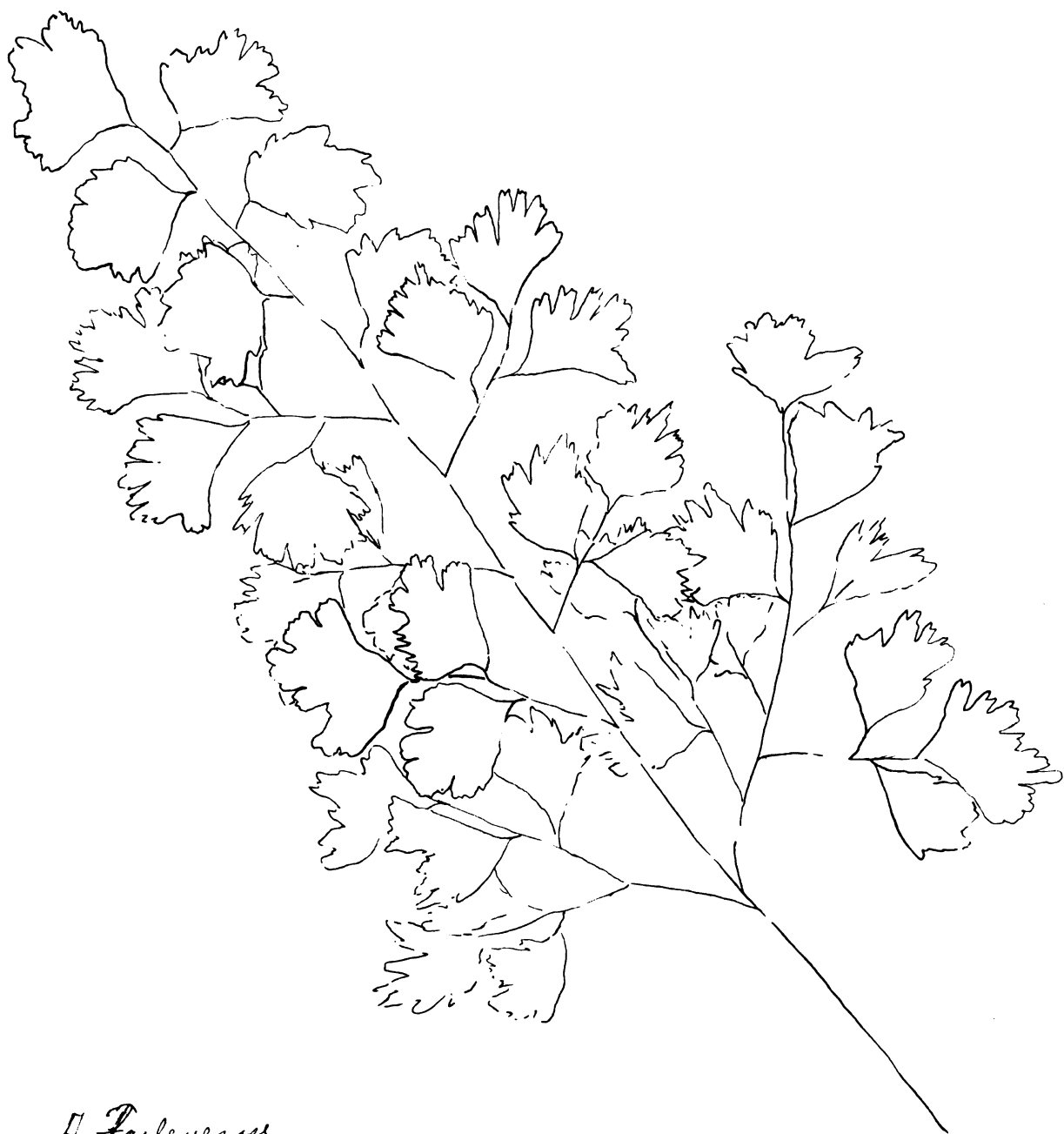
A. gracillimum.



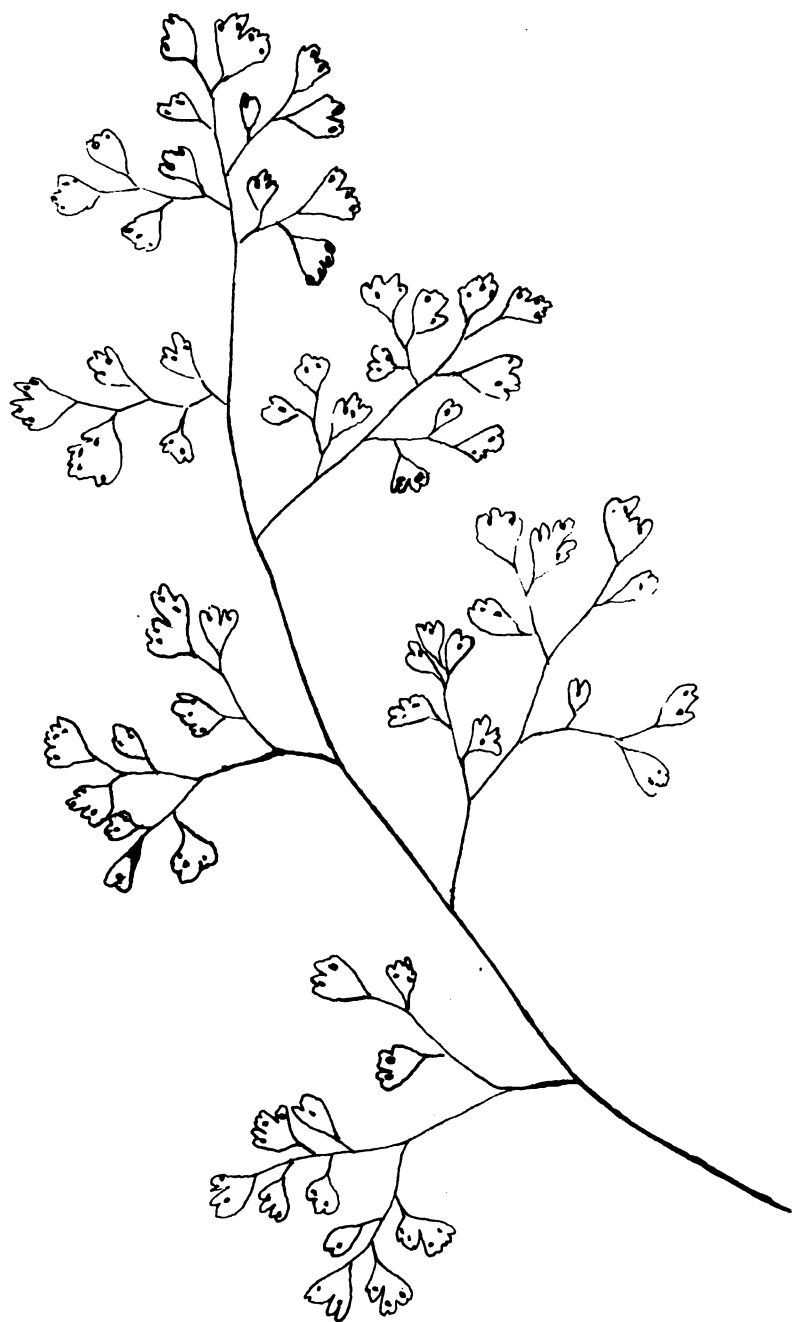
A. fulva
New Zealand.



A. fulva
New Zealand.



A. Fairleyense
Barbadoes.



H. cuneatum.
Bolivia
Bermudas
Brazil



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