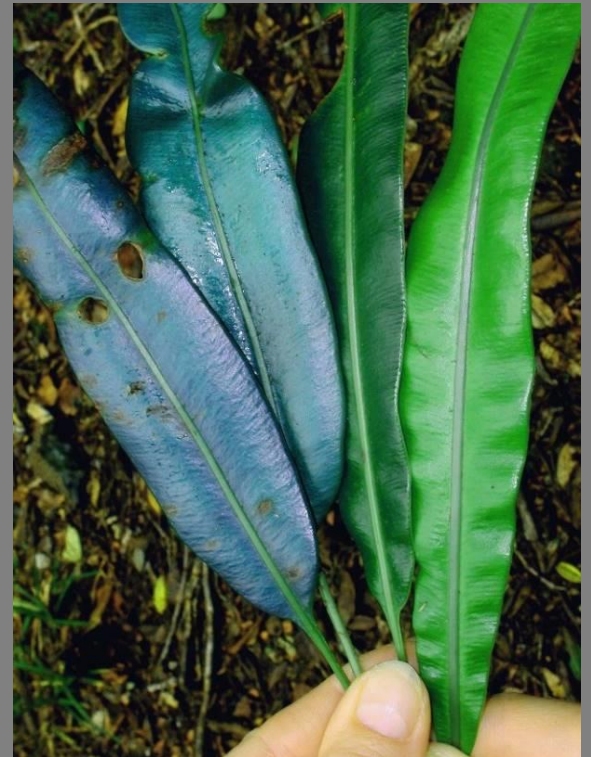
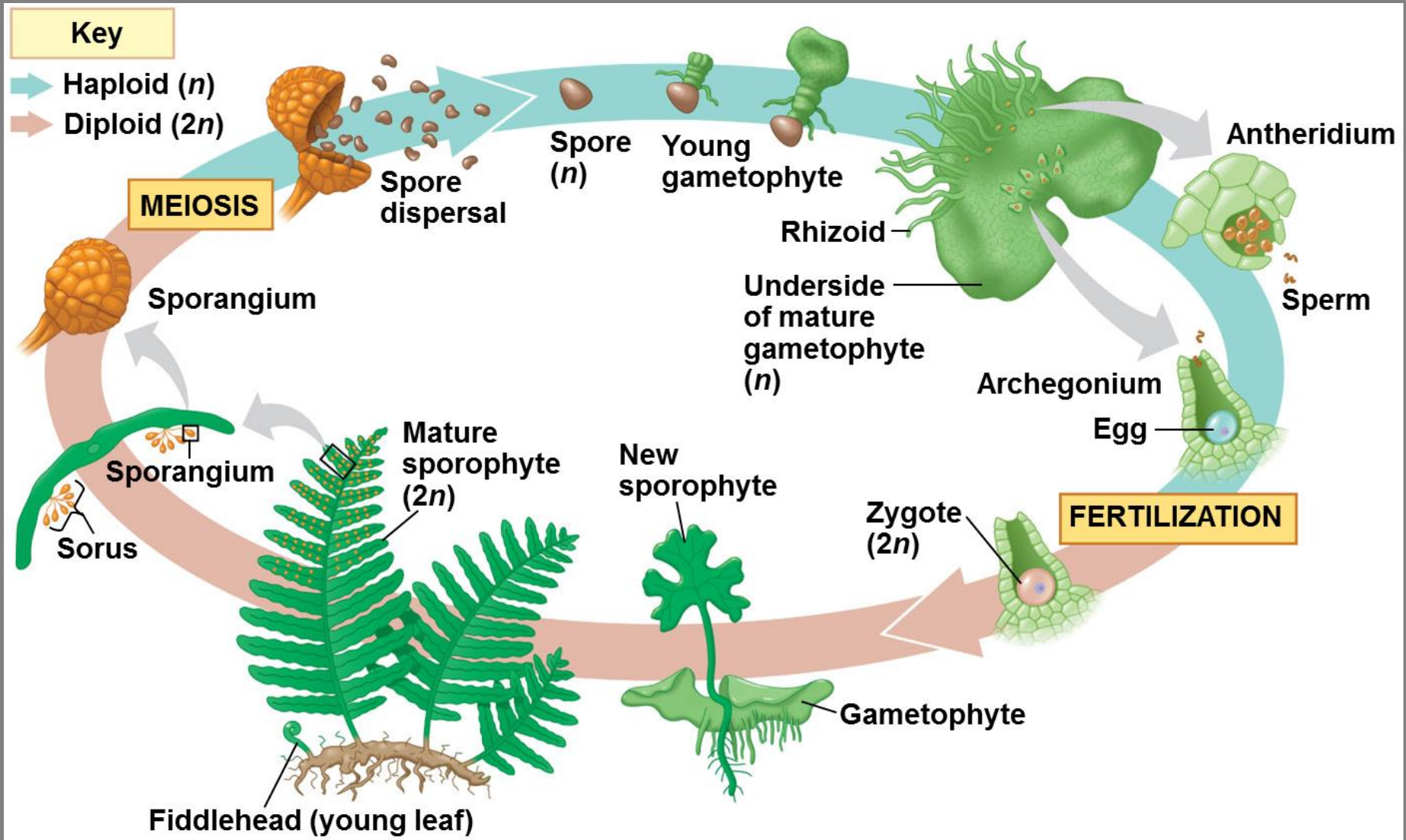


Ferns and Horticulture

Dr. Robbin Moran
The New York Botanical Garden



Ferns Lead a Double Life



Sori | Sporangia



Hay-scented fern, *Dennstaedtia punctilobula*

Types of Sori (sing., Sorus)

shape and position



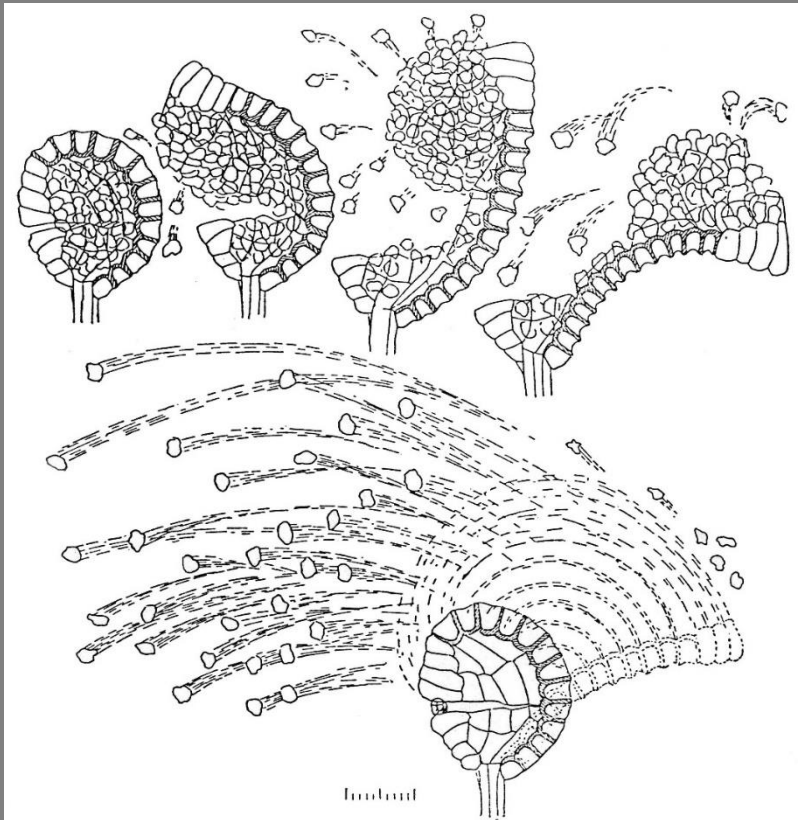
anastomosing
Hemionitis

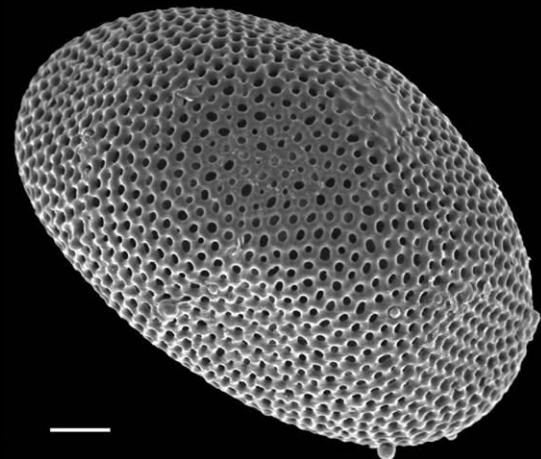
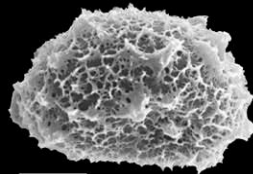
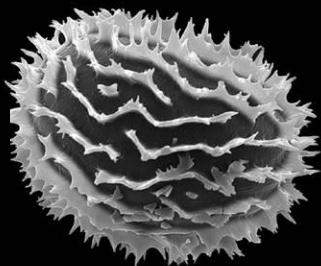
linear
Blechnaceae

round
Polypodiaceae

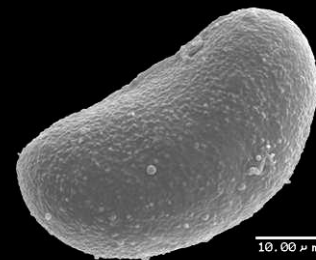
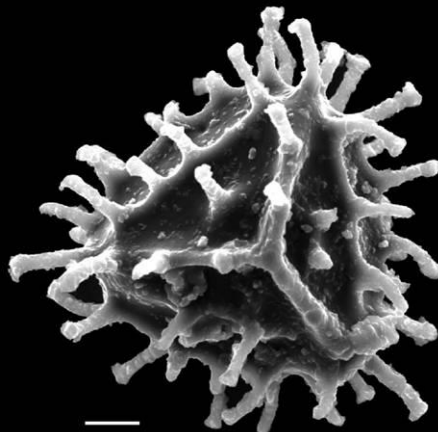
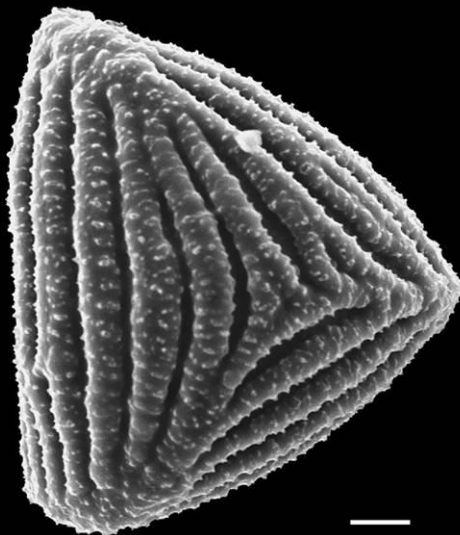
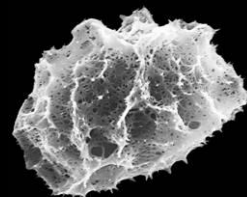
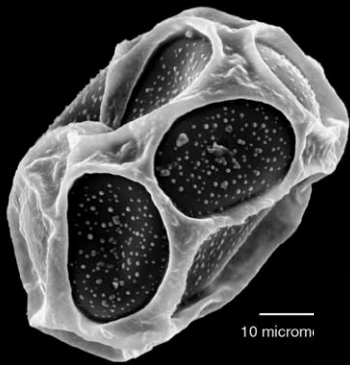
acrostichoid
Elaphoglossum

Spore Shooting

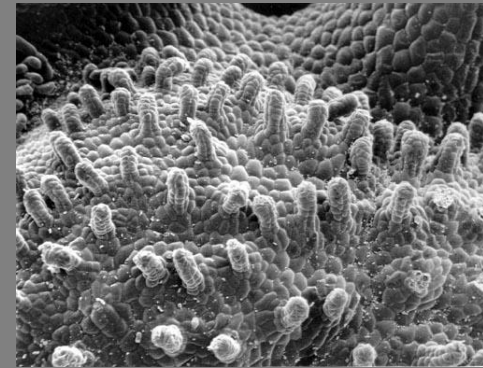
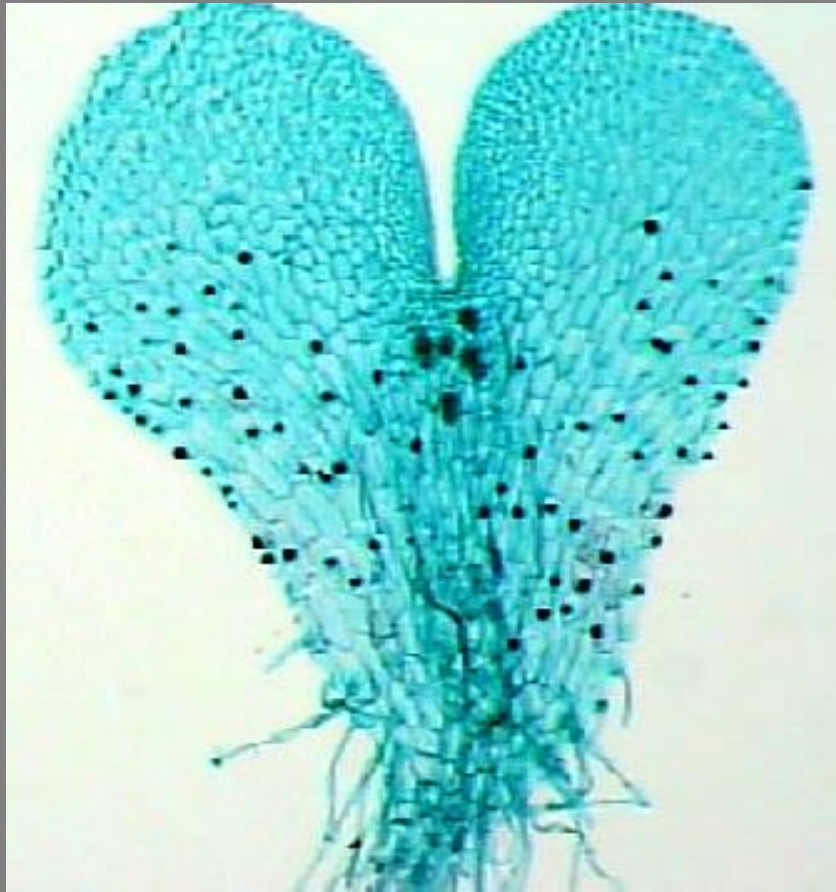




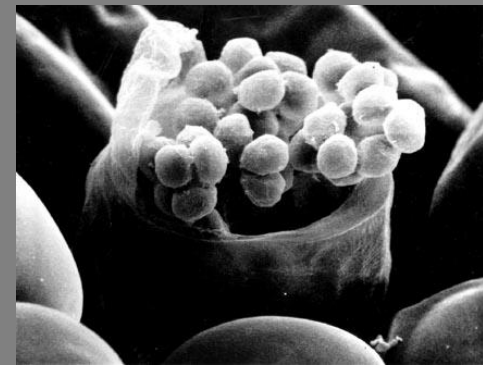
Ferns Spores



Fern Gametophyte (Prothallus)



archegonia



antheridium

Baby Photo!



Percentage of Ferns in Tropical Floras

Continents	7–10%
Oceanic Islands	20–40%



Fern Propagation by Spores

Peat-pellet Method



Fern Propagation by Spores

Peat-pellet Method



Fern Propagation by Spores

Peat-pellet Method



Ostrich Fern | *Matteuccia struthiopteris*



Ostrich Fern | *Matteuccia struthiopteris*

Fertile leaves



Ostrich Fern | *Matteuccia struthiopteris*

Stolons



Ostrich Fern | *Matteuccia struthiopteris*

Edible Fiddleheads



Belle of Maine

BRAND



NET WT. 15 OZ.

FIDDLEHEADS

A GENUINE VERMONT COUNTRY STORE

FINE FOOD

NATIVE
FIDDLEHEAD GREENS
VERMONT



Trade Mark
A red illustration of a horse-drawn wagon with a driver, used as a trademark.

NONE GENUINE WITHOUT TRADEMARK
AND SIGNATURE *Vern Ochs*

PACKED FOR
THE VT. COUNTRY STORE,® WESTON, VT 05161

NET WT. 15½ OZ. — 439 GM.

Ostrich Fern | *Matteuccia struthiopteris*

Largest export crop of New Brunswick



Sensitive Fern | *Onoclea sensibilis*



Bracken fern | *Pteridium aquilinum*



Bracken fern | Edible Fiddleheads

Bracken Fern

Ostrich Fern



Bracken fern

The Lucretia Borgia of the Fern World



1. Carcinogens
2. Thiaminase
3. Tanins
4. Cyanogenic
5. Ecdysones



Lucretia Borgia (1480–1519)

Lady fern | *Athyrium filix-femina*



Lady fern | Cultivars



Crested form



Red-petioled form
Cv. 'Lady in red'

Lady Fern | Cultivars

Tatting fern



Lady Fern | cultivars

Cv. 'Victoriae'



Other Lady Ferns

Hybrid



Japanese Painted Fern
Athyrium nipponicum 'Pictum'



Ghost Fern
= Lady fern X Painted fern

Maidenhair fern | *Adiantum pedatum*



Mosquito fern | Azolla

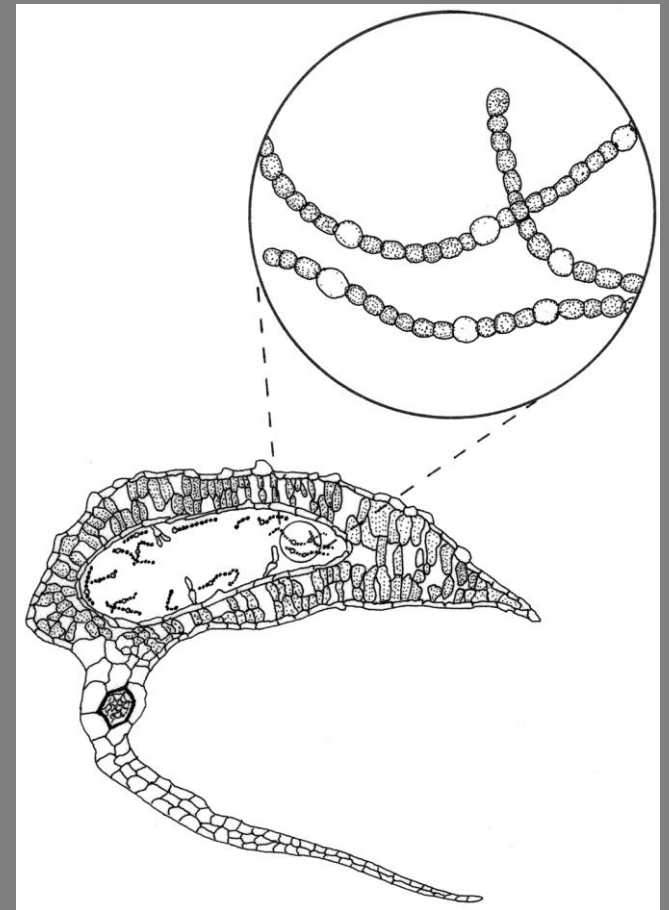
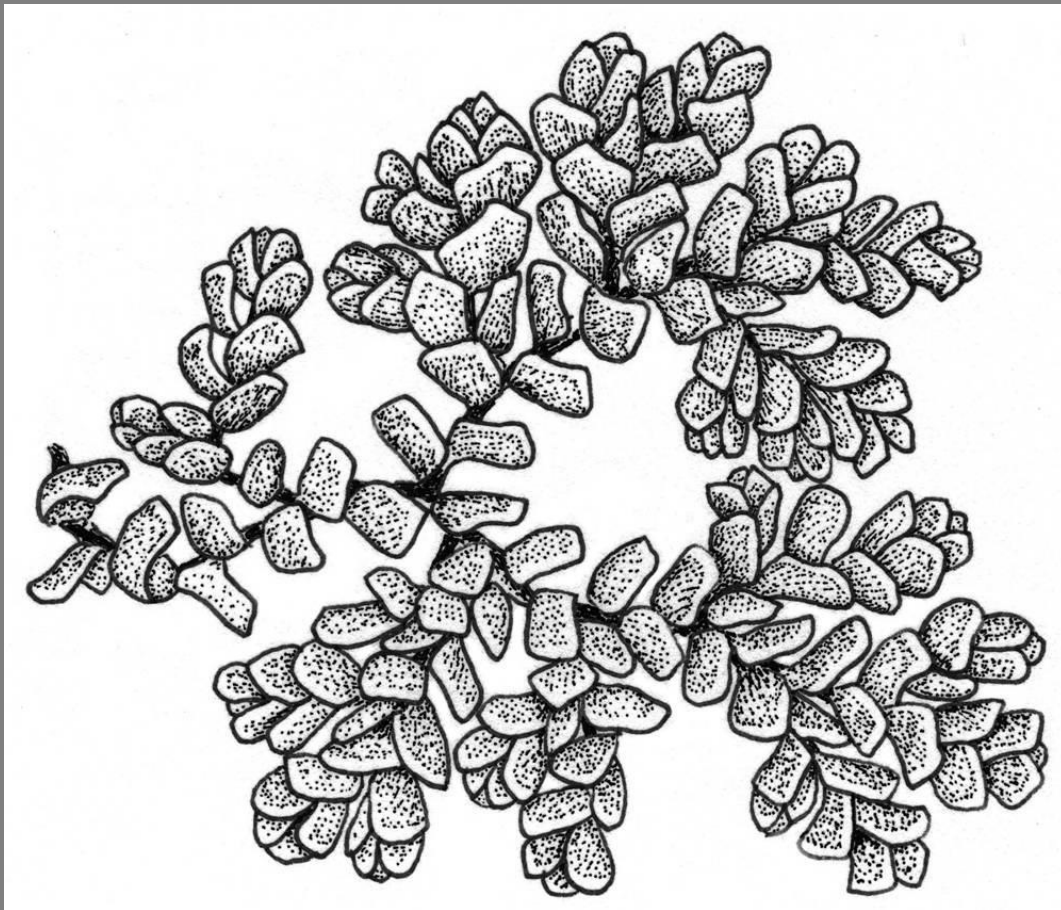
Leaves small
harbor N-fixing cyanobacteria



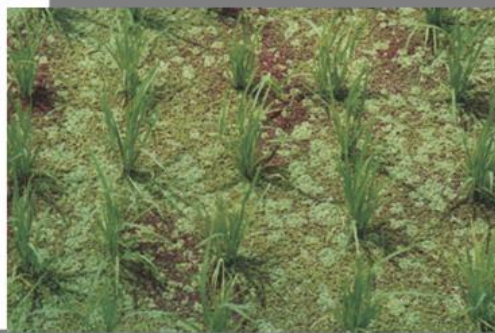
Richard Old
www.xidservices.com

Mosquito fern | Azolla

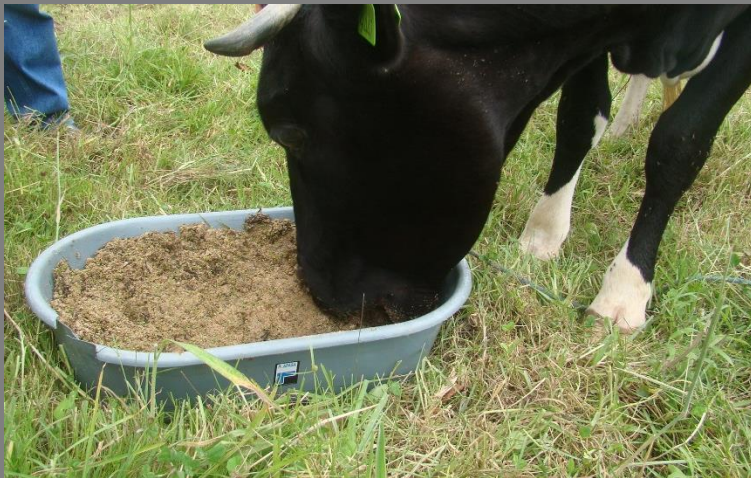
Cyanobacterium (*Anabaena azollae*)



Azolla | Rice Cultivation



Azolla | feed supplement

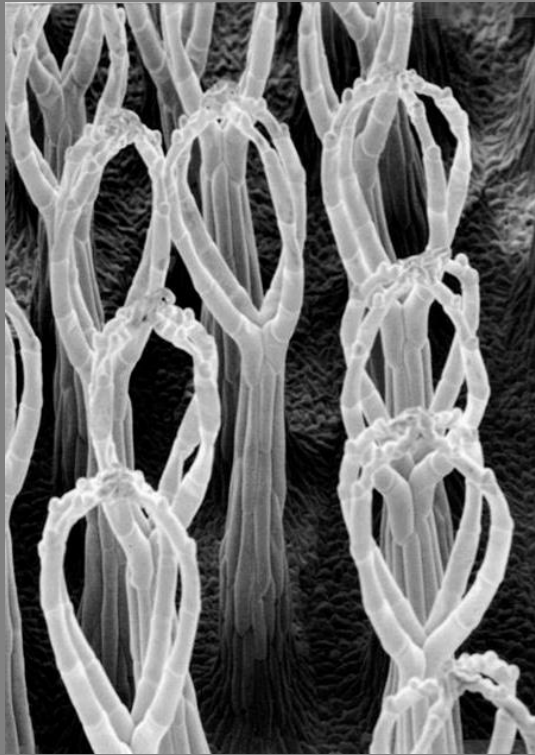


Azolla | Fall Colors

Turns red in fall or under nutrient stress



Water Spangles | *Salvinia molesta*



Water Spangles | *Salvinia molesta*

Infestation, eastern Texas





The Salvinia weevil

Crytobogous salvinii

Favorite adaptation | Iridescence



Elaphoglossum hoffmannii



Selaginella willdenovii



Elaphoglossum herminieri



Microsorium thailanicum

Favorite Fern | Potato Fern

Microgramma (Polypodiaceae)



M. brunei, Costa Rica



M. bifrons, Ecuador

Favorite Fern | Potato Fern



Entrance hole



Ouch!



Inner roots



Mmmm . . .

