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FERNS OF THE CAMP WIGWAM REGION

by

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of the
American Museum of Natural History
New York City

Illustrations by

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Britton and Brown nomenclature used

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INTRODUCTION

Ferns belong to the Order Pteridophyta and are non-flowering plants.

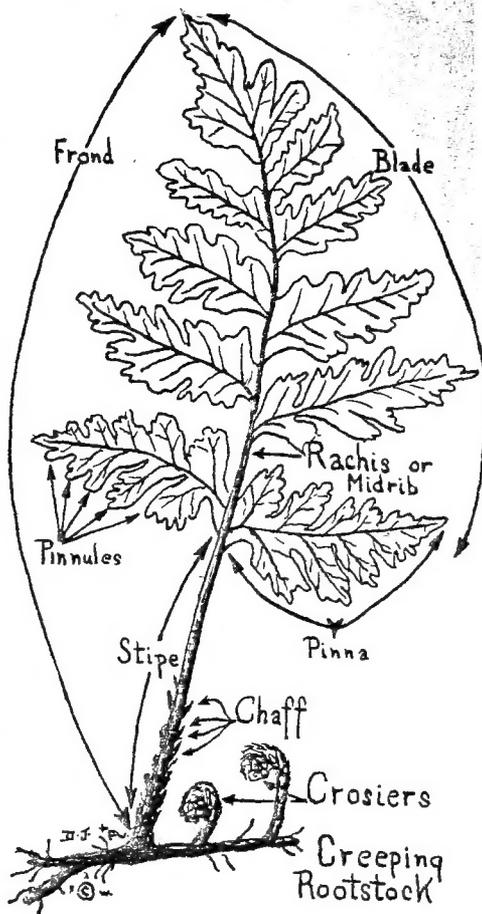
They do not produce seeds, but reproduce by means of spores.

When the spores fall to the ground and suitable conditions prevail, they grow into tiny plants termed prothallia. On the prothallia, the reproductive organs are borne which produce the new fern, like the parent plant.

Ferns have sterile (non-spore-producing) leaves, or fronds, as they are called in the fern family. Some fertile fronds are quite different in appearance from the sterile, as in the *Botrychiums* where the fruiting parts resemble clusters of grapes; and the *Osmundas* where they resemble clusters of flowers, while in others the spore-cases are borne on the back of the fronds.

The placing of the fruit-dots, or sori, is one of the most important determining factors in identifying ferns.

Illustrations in this leaflet show location and shape of sori in upper left corner, the shape of frond in center, and characteristic growth and height by foot space drawings in lower right corner.



Thanks are due to Dr. Clyde Fisher of the American Museum of Natural History and Camp Wigwam, for reading the manuscript for scientific accuracy; Florence Woodbury, Harrison, Maine, for aid in the field and research work, and to Lewis W. Walker for aid in editing this pamphlet.



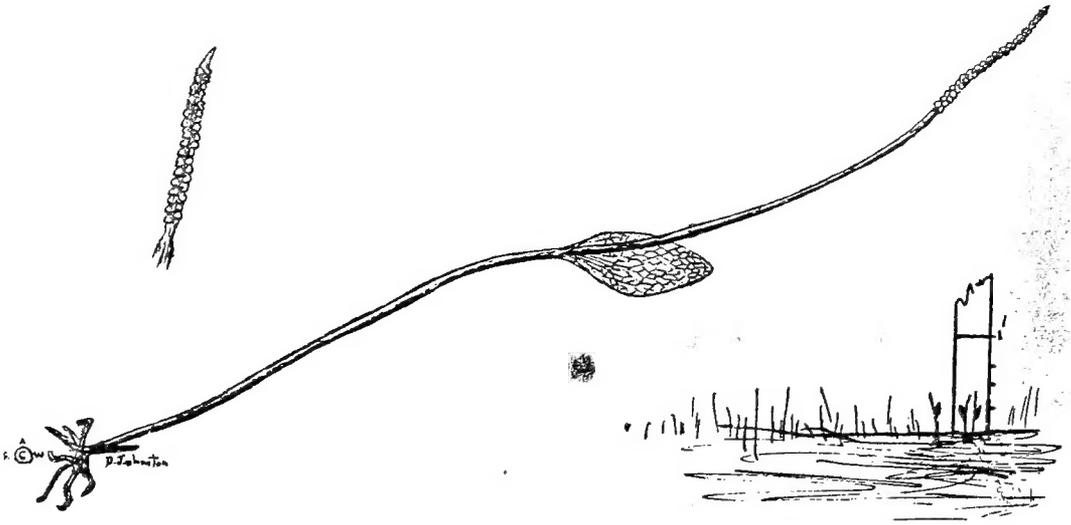
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ADDER'S-TONGUE

(Ophioglossum vulgatum)

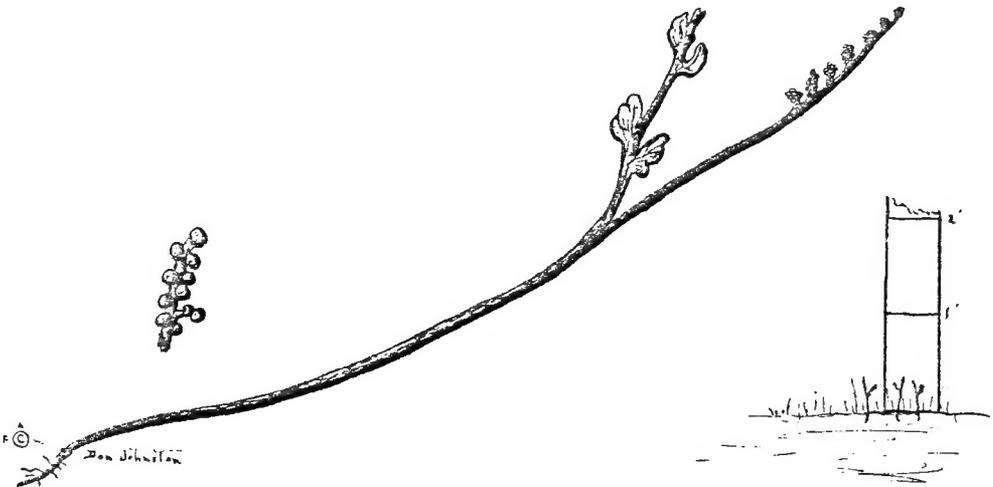


Height, 3 to 6 inches. Commonstalk at least half the length of plant. Sterile blade fleshy. Fertile spike rising from base of sterile blade. Fronds from a slender rootstock and solitary. Sporangia born in two rows at tip of spike.

Damp grassy meadows. Rare.

EATON'S GRAPE FERN

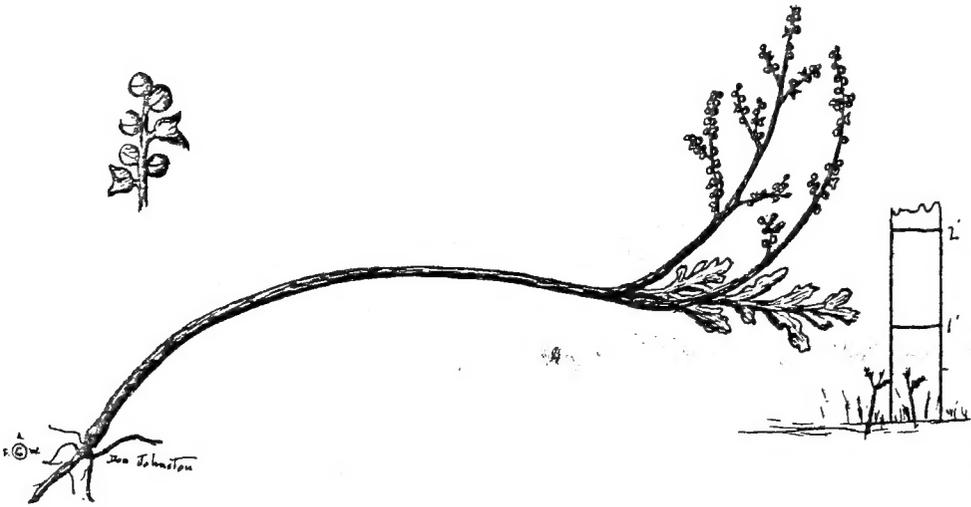
(Botrychium tenebrosus)



Height, 1 to 9 inches. Commonstalk more than half the length of plant. Sterile blade cut into several or few rounded portions with short petiole. Fertile blade short-stalked. Sporangia borne in small clusters usually on inner side of stalk.

Moist woods and swamps. Rare.

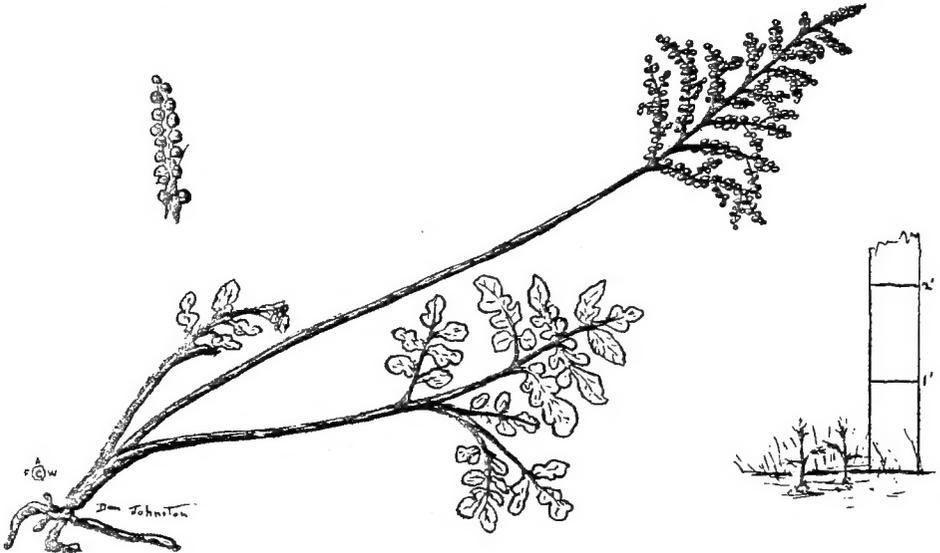
WOOD'S GRAPE-FERN

(Botrychium neglectum)

Height, 2 to 12 inches. Commonstalk over half the length of plant. Sterile blade once - to twice - pinnate and short petioled. The fertile blade usually rises above the sterile portion and is twice - or thrice - pinnate.

Woods. Not common.

TERNATE GRAPE-FERN

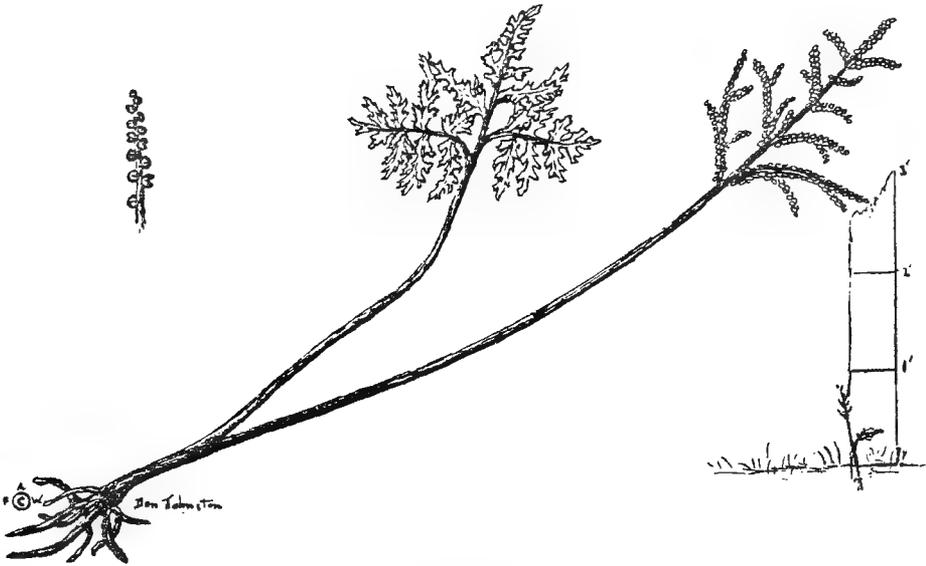
(Botrychium obliquum)

Height, 6 to 20 inches. Commonstalk very short. Both sterile and fertile blade long-petioled. Segments usually pointed. Sterile blade evergreen and horizontal; triangular 2 to 5 inches broad. About 3 times pinnate. Fertile blade erect, 3 to 4 times pinnate.

Open fields and meadows. Common.

CUT-LEAVED GRAPE-FERN

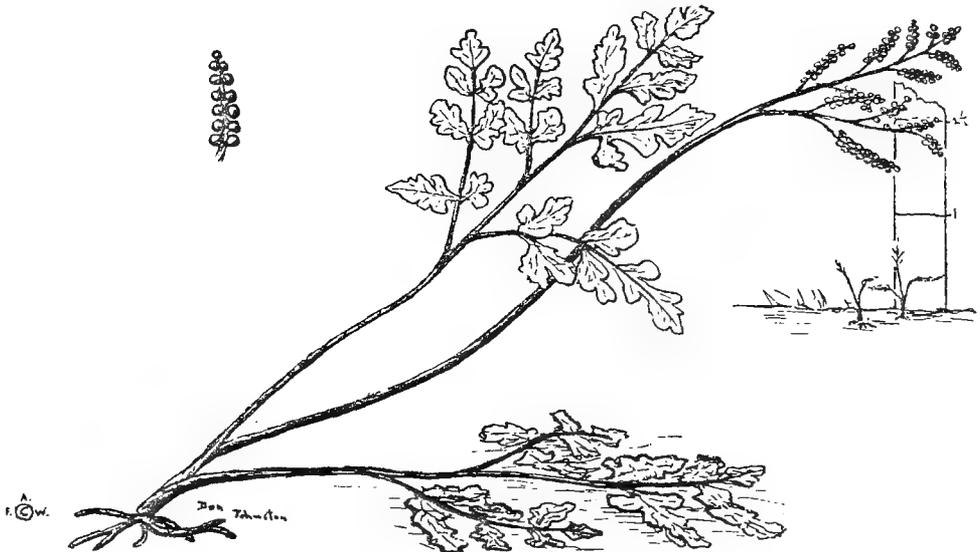
(Botrychium dissectum)



Very similar to Ternate Grape-fern, except segments of sterile blade much more finely cut. Open fields. Common.

LEATHERY GRAPE-FERN

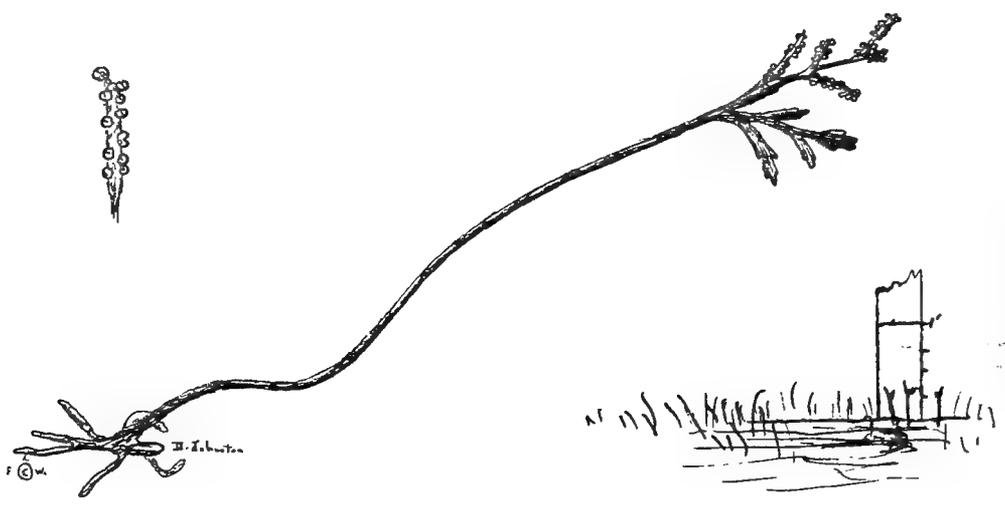
(Botrychium silaifolium)



Very similar to Ternate Grape-fern, but segments rounded and somewhat larger. Found only in the woods. Rare.

LANCE-LEAVED GRAPE-FERN

(*Botrychium lanceolatum*)



Height, 2 to 12 inches. Common stalk about three-fourths the length of plant. Fertile blade rising from base of the triangular and sessile sterile blade. Sterile blade not over 2 inches broad.

Moist woods and swamps. Not common.

VIRGINIA GRAPE-FERN

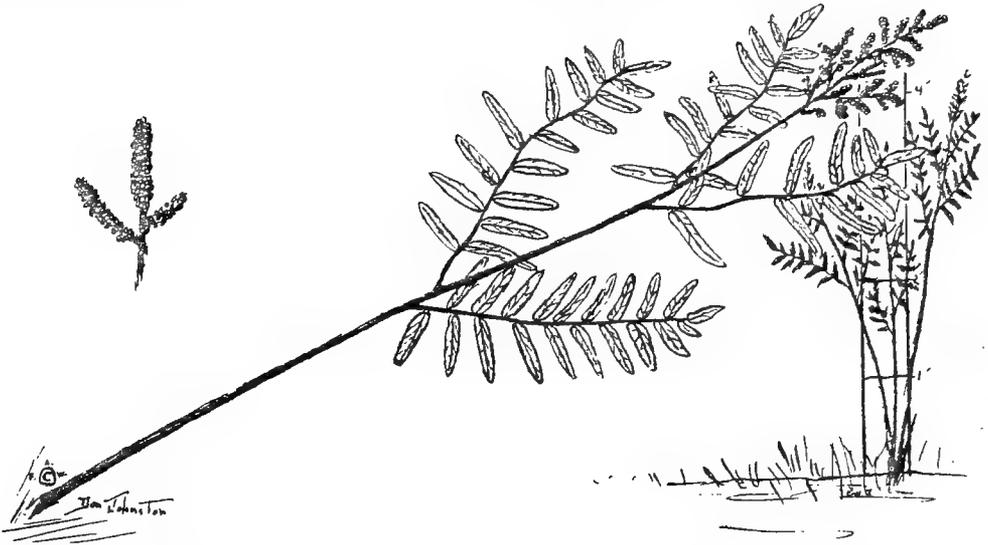
(*Botrychium virginianum*)



Height, 4 inches to two and a half feet. Common stalk one half to two thirds the length of plant. Sterile frond triangular and horizontal; thin, 2 to 16 inches broad. Fertile blade rising from base of sterile.

Rich woods. Common.

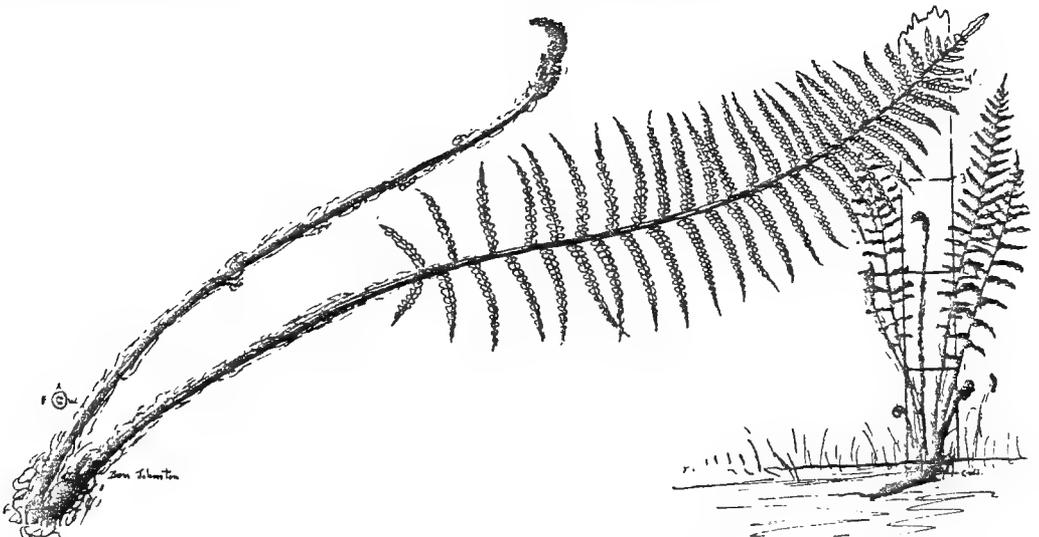
ROYAL FERN

(Osmunda regalis)

Frond 2 to 6 feet long. In crown. Sterile frond compound. The pinnules almost entire and placed alternately and distant from each other on the midrib. Fertile blade branching well up the rachis of the sterile portion. Smooth shining stipe.

Meadows. Common.

CINNAMON FERN

(Osmunda cinnamomea)

Fronds 1 to 5 feet long. Sterile fronds nearly twice-pinnate. In circle with fertile fronds in center. Stipe and rachis of young fronds heavily coated with a woolly down. Usually a tuft of down at base of each pinna throughout the season. Pinnules pointed.

Swamps and moist woods. Common.

INTERRUPTED FERN

(Osmunda claytoniana)

Fronde 2 to 6 feet long. Sterile fronds nearly twice pinnate. In circle spreading outward, and fertile nearly erect with spore-bearing pinnae in the center of the blade. Pinnules rounded. Stipes of young fronds heavily coated with woolly down.

In moist places. Common.

SENSITIVE FERN

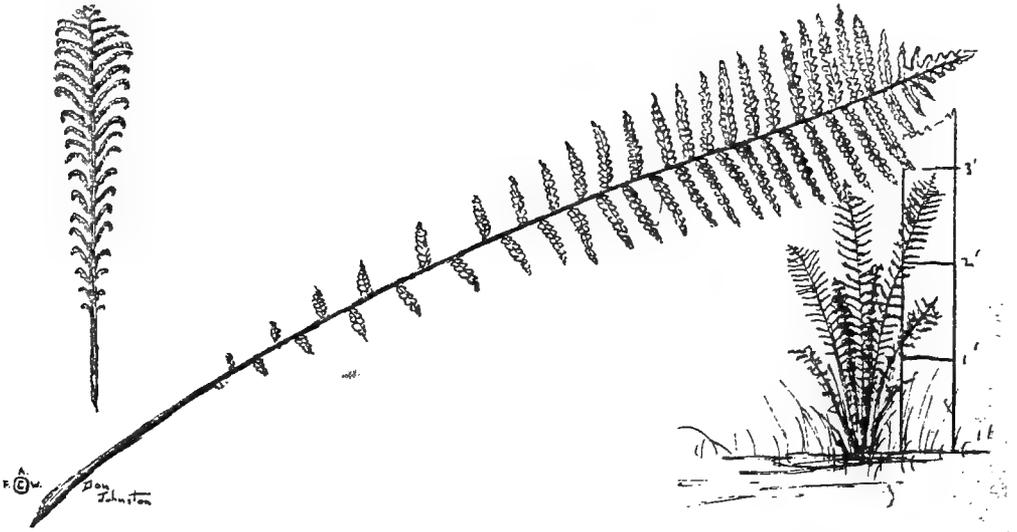
(Onoclea sensibilis)

Fronde 1 to 2½ feet long. Creeping rootstock. Sterile blade thin, broadly triangular. Only lower pinnae cut to rachis. Separate fertile frond with pinnae much contracted forming beadlike sori at the top of rachis.

In moist soil. Common.

OSTRICH FERN

(Matteuccia struthiopteris)

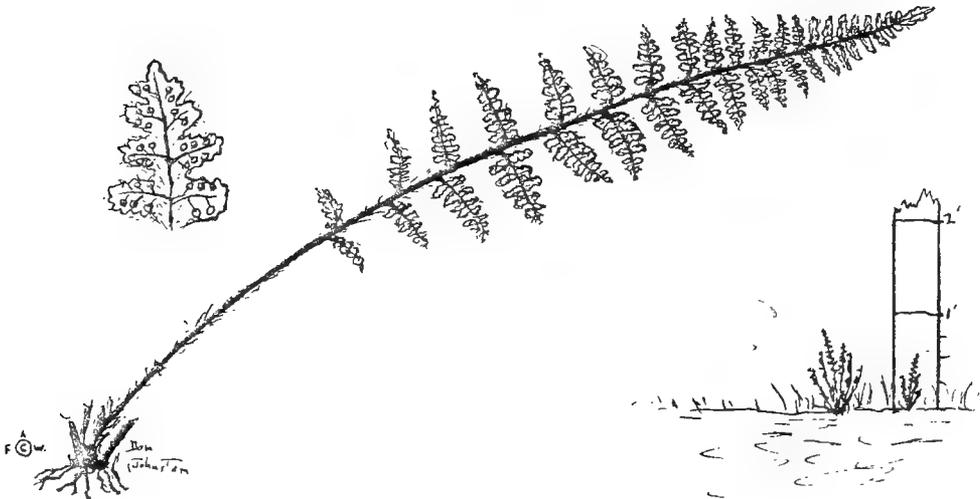


Fronds 1 to 6 feet long, in crown; nearly twice-pinnate. Pinnae of sterile frond much longer above center of blade. Lower pinnae very short. Fertile frond much shorter than sterile, pinnate, very stiff and resembles an ostrich plume.

Moist places. Common.

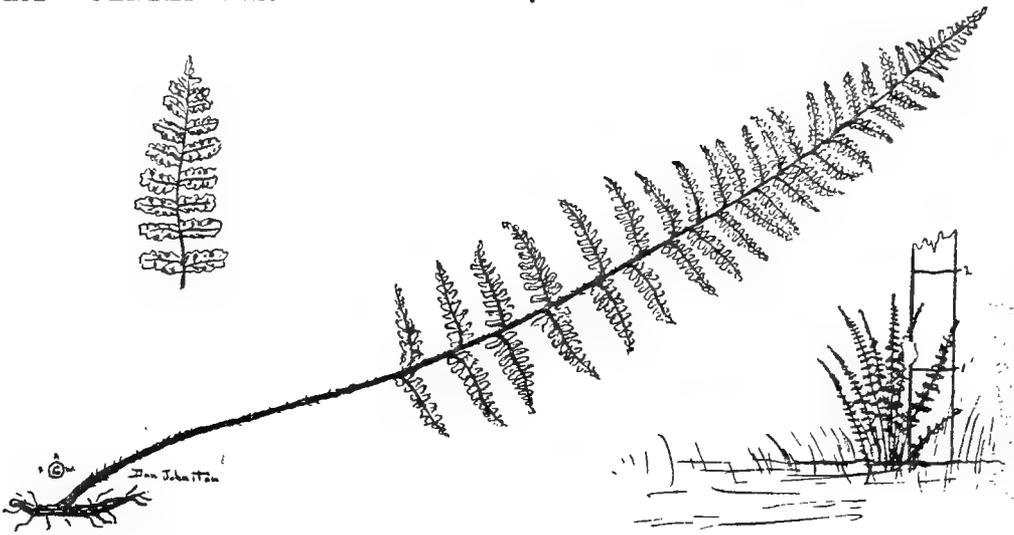
RUSTY WOODSIA

(Woodsia ilvensis)



Fronds 4 to 10 inches long; in tufts. Stipes jointed near the base and covered with brown scales. Blade pinnate, shining above and densely chaffy beneath. Sori near the margin and almost concealed by the chaff. On exposed ledges. Common on mountains.

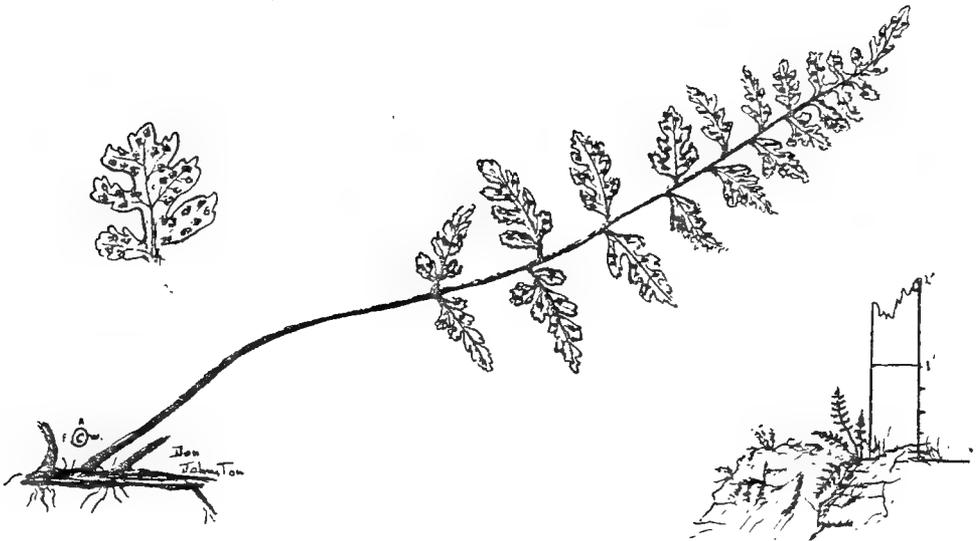
HAY-SCENTED FERN

(Dennstaedtia punctilobula)

Fronds 1 to 3 feet long. Twice-pinnate. Creeping rootstock. Stipes smooth and chestnut brown. Rachis and under surface of blade minutely hairy. Sori small, round, usually one at base of each segment. Blade sword-shaped. Fragrant when crushed.

Rocky woods and hillsides. Common.

BRITTLE FERN

(Filix fragilis)

Frond 8 to 15 inches long. Creeping rootstock. Blade lanceolate. 2 to 3 times pinnate. Pinnae rather widely separated. Sori roundish, near the margin. Rachis usually winged.

On rocks in moist woods. Rare.

CHRISTMAS FERN

(Polystichum acrostichoides)

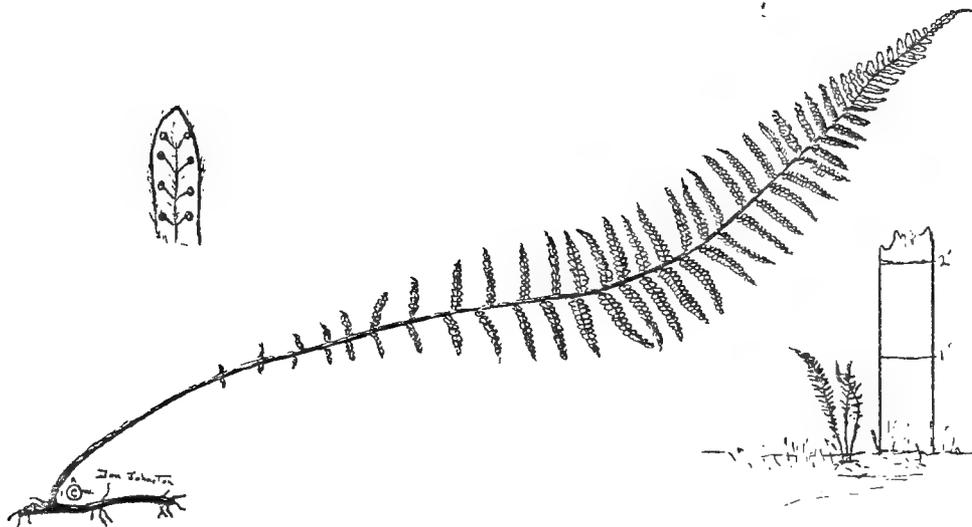


Fronde 1 to 2½ feet long - in clump at end of rootstock. Stipes covered by light brown scales. Blade lanceolate. Lower pinnae winged and attached alternately to the rachis by short stalks. The fertile frond longer than the sterile. The upper pinnae much contracted and bearing the sori. Evergreen.

In moist woods. Common.

NEW YORK FERN

(Dryopteris noveboracensis)

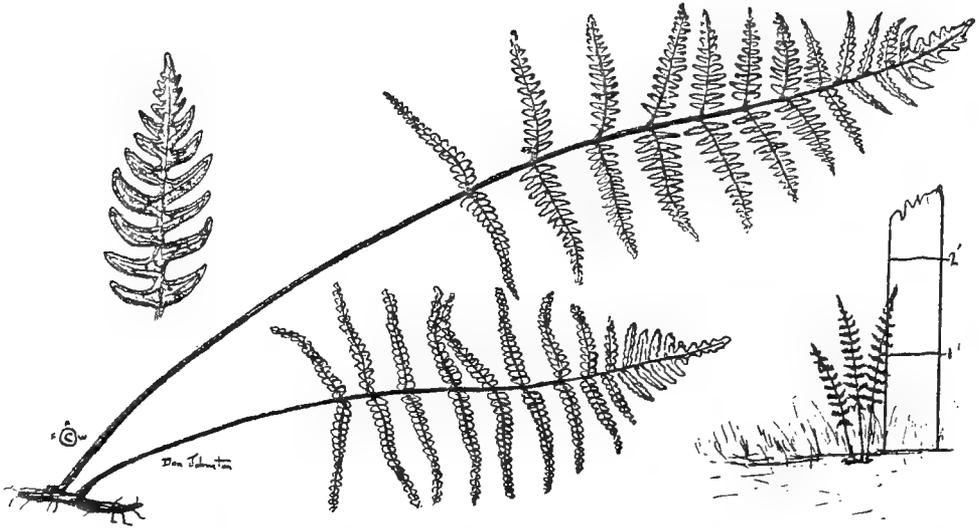


Fronde 1 to 2½ feet long. Creeping rootstock. Pinnate blade tapering both ways from the middle. The lower pinnae very small. Sori near the margin.

Moist woods. Common.

MARSH SHIELD-FERN

(Dryopteris thelypteris)

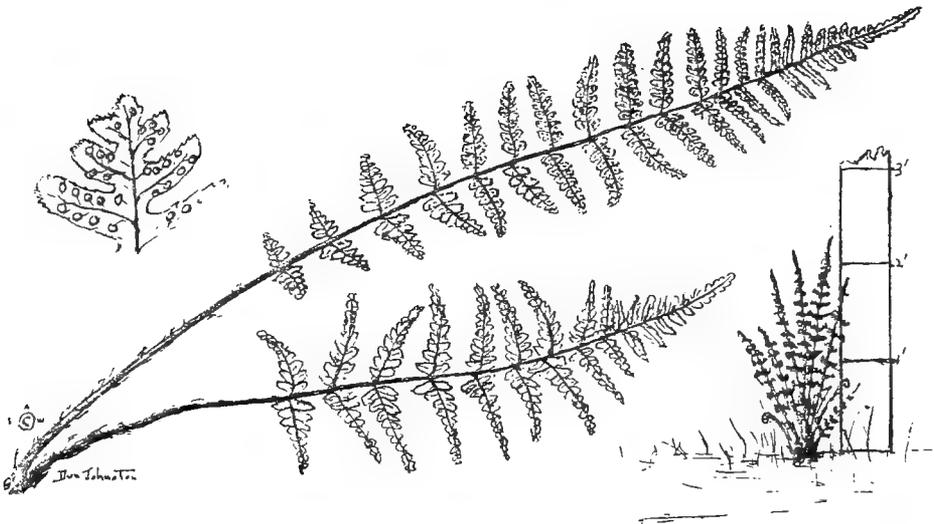


Fronds 1 to $2\frac{1}{2}$ feet long from creeping rootstock. Pinnate. Stipes long, bluish-green. Blade usually broadest at base. Fertile blade taller and sori covered by the turned under margin of pinnules.

Marshes. Common.

CRESTED SHIELD-FERN

(Dryopteris cristata)



Fronds $1\frac{1}{2}$ to $2\frac{1}{2}$ feet long and 3 to 5 inches broad. Stipes covered with light brown scales. Fertile fronds erect, taller and more narrow than the sterile. Lower pinnae wedge-shaped. Sori large and covered by kidney-shaped indusia. Sterile fronds evergreen.

Wet woods. Not common.

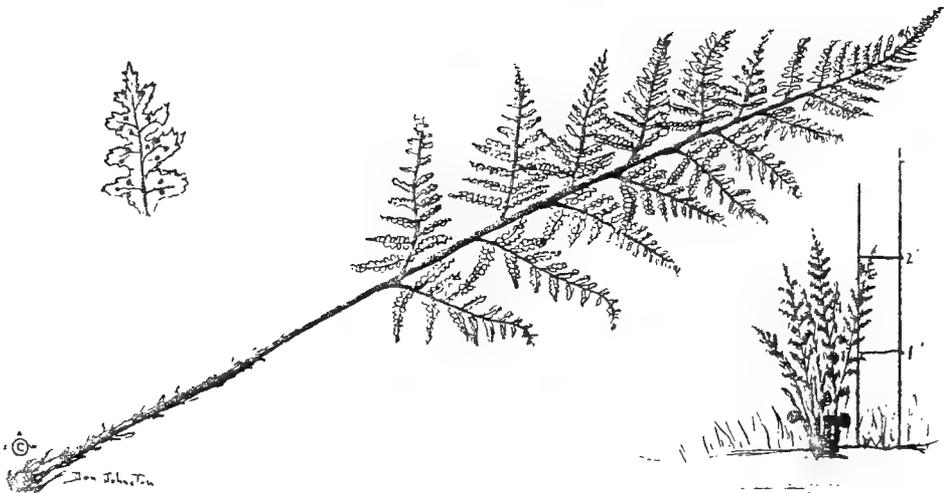
EVERGREEN WOOD FERN

(Dryopteris marginalis)

Frond 1 to 3 feet long. In crown. Twice pinnate. Stipe covered with light brown scales. Fronds bluish green. Pinnæ not much narrowed at base. Dark above and much lighter below. Sori very near margin. Evergreen.

Rocky woods. Common.

SPINULOSE SHIELD-FERN

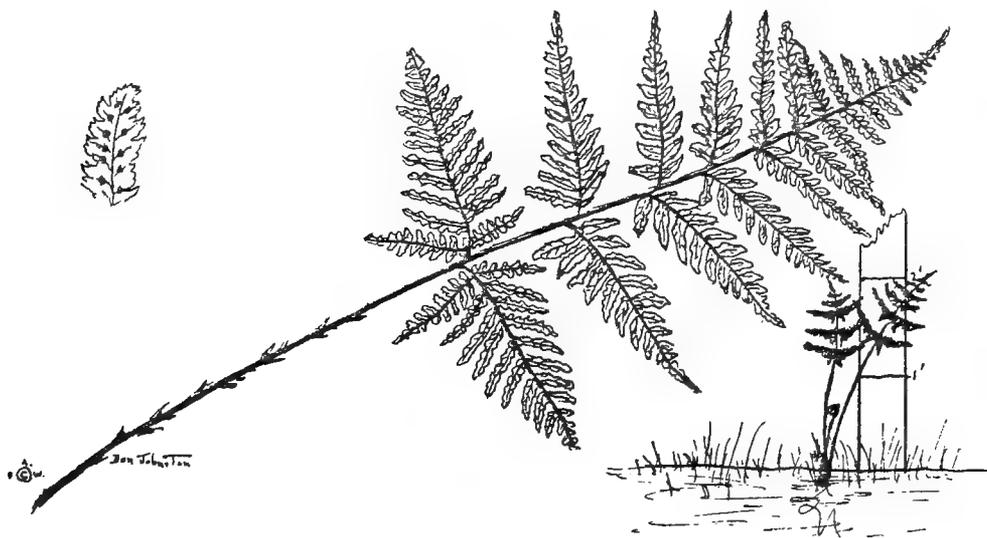
(Dryopteris spinulosa)

Frond 1 to 3 feet long. $3\frac{1}{2}$ to 9 inches broad. Twice-pinnate. Stipe covered with light brown scales. Pinnæ usually oblique to the rachis. The pinna next to the rachis usually the longest. Sori at end of veinlets.

In moist woods. Not common.

SPREADING SHIELD-FERN

(Dryopteris dilatata)



Fronde $1\frac{1}{2}$ to $3\frac{1}{2}$ feet long. 4 to 16 inches broad. In crown. Twice-pinnate. Stipes covered by dark brown scales which often have darker centers. Blade very broad in center. The pinnules next to the rachis on lower pinnae much the longest. Pinnae at right angles to rachis. Sori usually subterminal to ends of veinlets. In moist woods. Not common.

AMERICAN SHIELD-FERN

(Dryopteris intermedia)

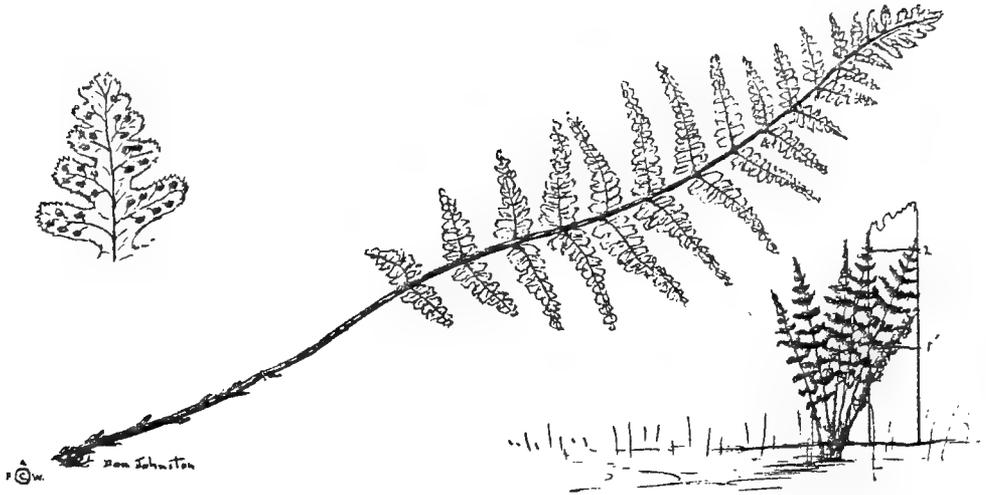


Fronde 1 to 3 feet long, $3\frac{1}{2}$ to 9 inches broad. Twice-pinnate. In crown. Stipes covered by light brown scales which often have dark centers. The second pinnule from the rachis usually much the longest. Sori subterminal to the veinlets.

In moist woods. Common.

BOOTT'S SHIELD-FERN

(Dryopteris Boottii)

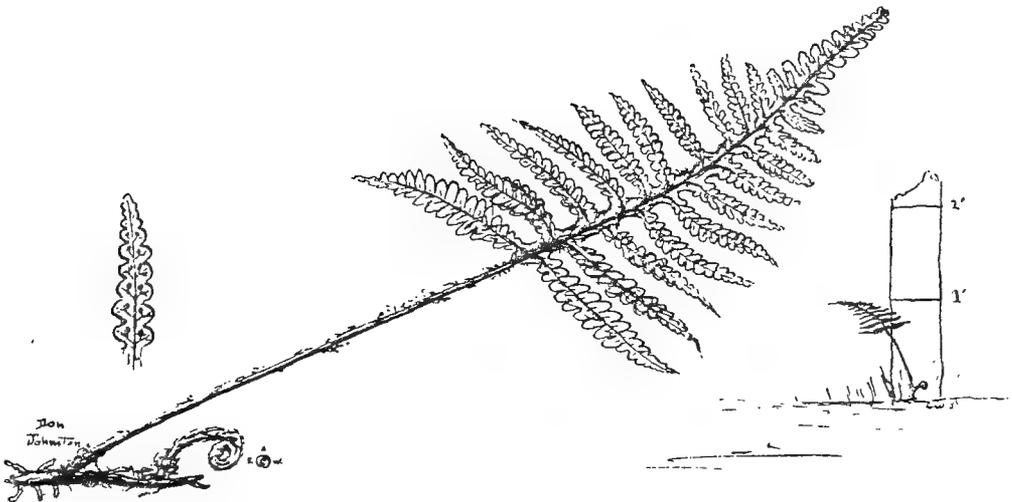


Fronde $1\frac{1}{2}$ to 3 feet long, 3 to 6 inches broad. Twice to three times pinnate. Stipes covered with light brown scales. Blade broadest near the center. Lower pinnae wedge-shaped and pinnate. Sori small and subterminal to veinlets.

In moist woods. Rare.

LONG BEECH-FERN

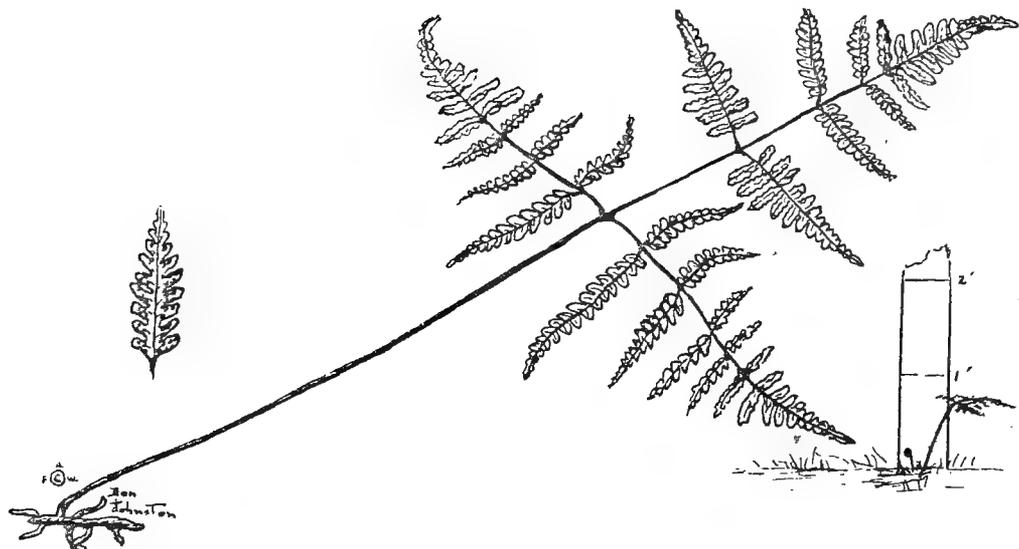
Dryopteris phegopteris)



Creeping rootstock. Pinnate. Frond 10 to 18 inches long. Stipe longer than blade and somewhat scaly. Blade triangular, longer than broad and minutely hairy. The lower pair of pinnae deflexed. Sori near the margin and no indusia.

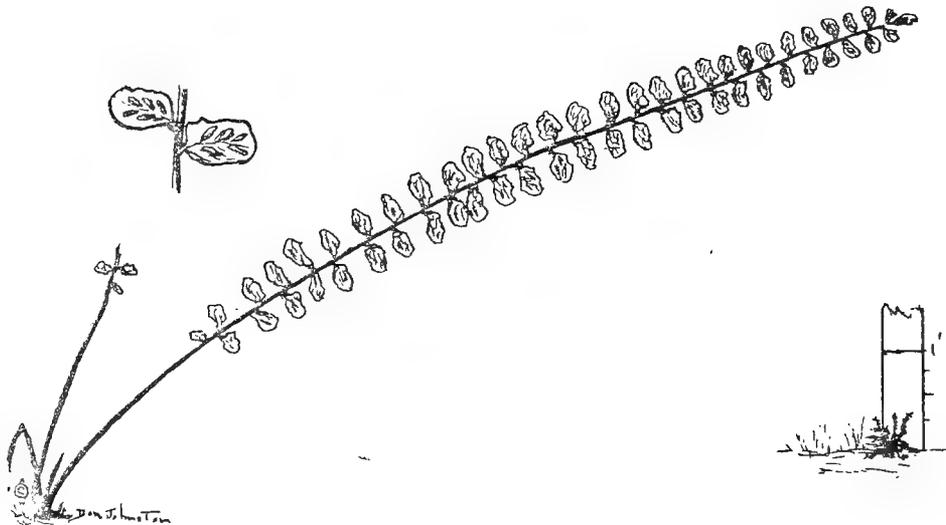
In moist woods. Common.

OAK FERN

(Dryopteris dryopteris)

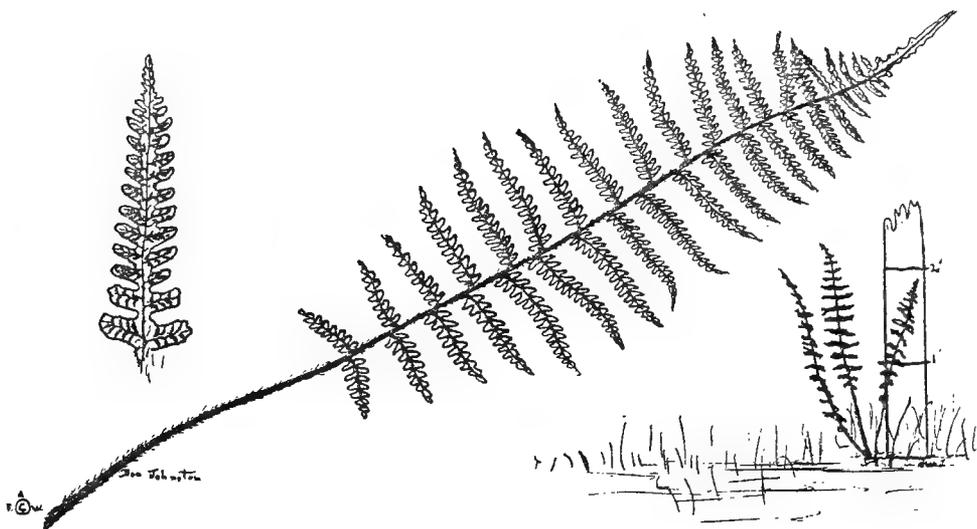
Frond 6 to 15 inches long. 5 to 14 inches broad. Twice-pinnate. Stipe green and about the same length as the triangular blade. The three sections about equal in length. Delicate. Sori near the margin and no indusia. In wet woods. Common.

MAIDENHAIR SPLEENWORT

(Asplenium trichomanes)

Fronds 4 to 10 inches long and less than an inch wide. Stipe and rachis shining and blackish. Pinnæ round or oval. Sori in several pairs on back of each pinna. Moist ledges. Rare.

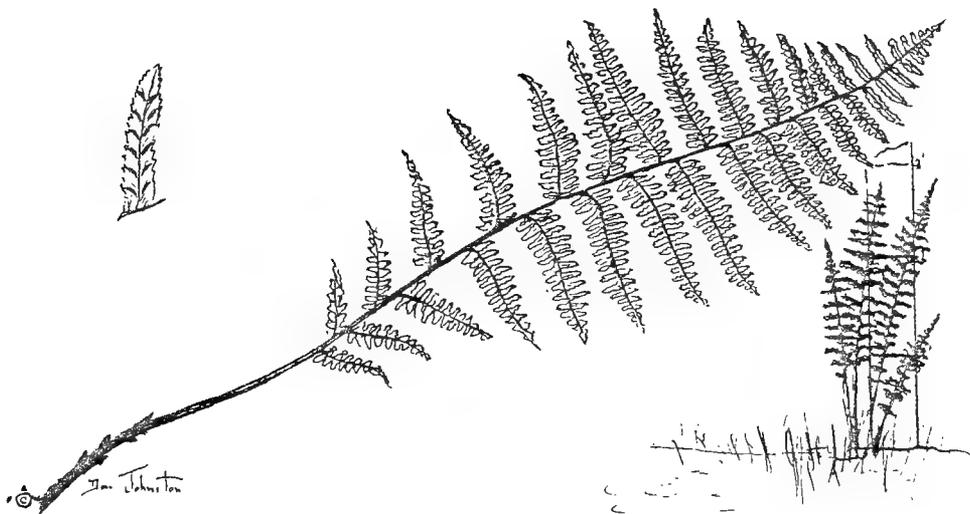
SILVERY SPLEENWORT

(Athyrum thelypteroides)

Fronde $1\frac{1}{2}$ to $3\frac{1}{2}$ feet long, 6 to 12 inches wide. Nearly twice-pinnate. Creeping rootstock. Whole frond covered with fine hairs. Blade lanceolate. Pinnules having appearance of being cut off squarely. Sori in several crescent-shaped pairs on the back of the pinnules.

In wet woods. Not common.

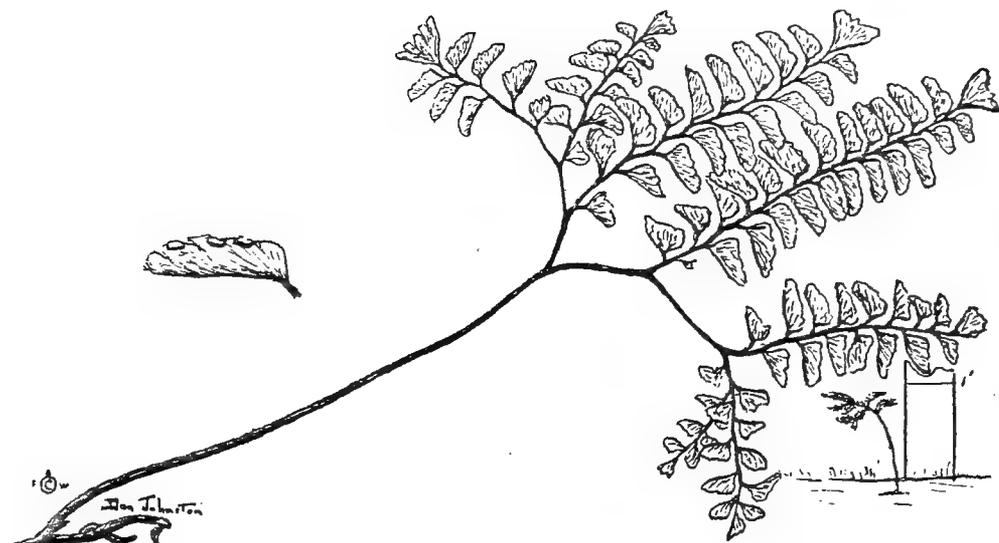
LADY FERN

(Athyrum filix-foemina)

Fronde $1\frac{1}{2}$ to 4 feet long. In tufts at end of creeping rootstock. Stipes sometimes tinged with reddish. Black scales. Blade tapers both ways from center. Lower pair of pinnae deflexed. Sori usually in crescent-shaped pairs on back of pinnules.

Moist woods and roadsides. Common.

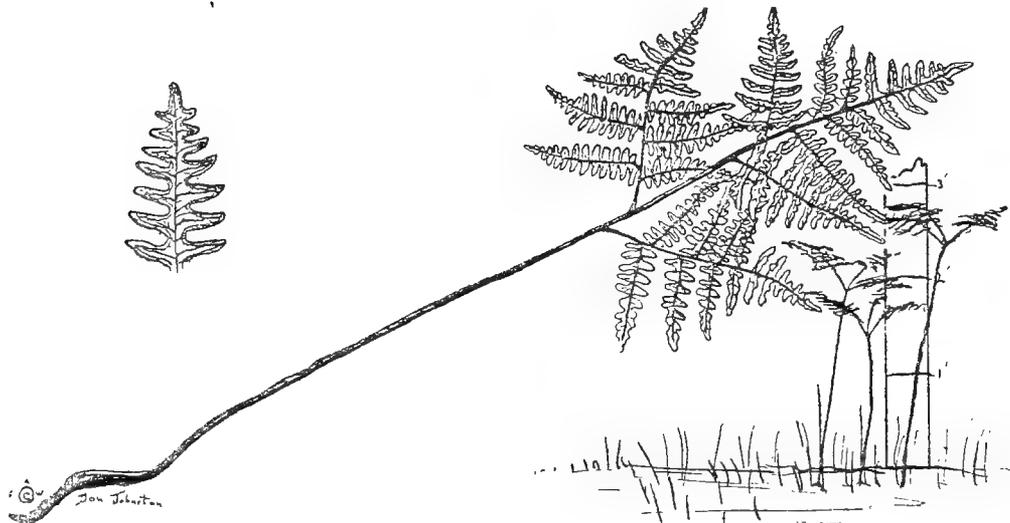
MAIDENHAIR FERN

(Adiantum pedatum)

Frond $1\frac{1}{2}$ to $2\frac{1}{2}$ feet long. Compound creeping rootstock. Stipe dark brown and shining, dividing into two rachis at the top. The palm-shaped blade at almost right angles to the rachis. Sori hidden by the turned under edges of segments of blade.

In moist woods. Rare.

BRACKEN

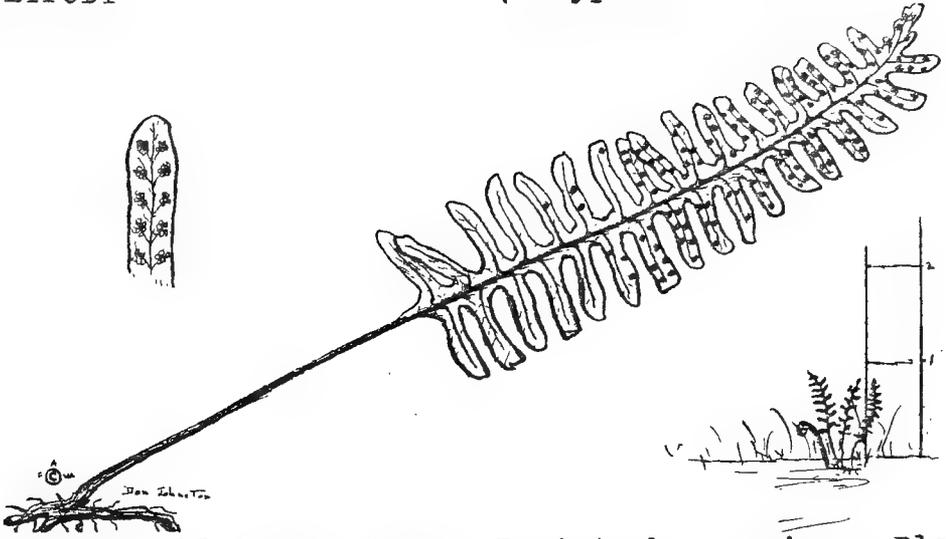
(Pteridium aquilinum)

Creeping rootstock. Fronds twice-pinnate. Stipes 1 to 3 feet high, erect and shining. Blade 1 to 3 feet broad, triangular, very coarse and set at right angle to rachis.

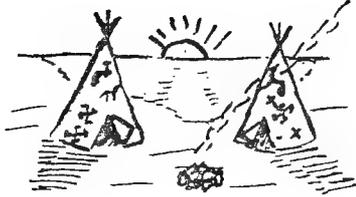
Dry woods and wasteland. Common.

POLYPODY

(Polypodium vulgare)



Fronde 5 to 15 inches long. Rootstock creeping. Blade oblong, 1 to 3 inches wide and not cut entirely to the rachis. Sori large, round and no indusia. Evergreen. On rocks. Common.



NOTE:

The ferns described in this pamphlet are found throughout northeastern United States except RUSTY WOODSIA which is a mountain fern.

GLOSSARY OF SPECIAL TERMS

- BLADE - The flat expanded part of a frond.
 CHAFF - Thin dry scales.
 COMPOUND - Composed of two or more parts forming a whole.
 CREEPING - Running along or, at surface, of ground and rooting.
 DEFLEXED - Turned abruptly downward.
 FERTILE - Bearing spores.
 FRONDS - The leaves of ferns.
 INDUSIA - Plural for indusium.
 INDUSIUM - The covering for immature sori.
 LANCEOLATE - Rather narrow and long tapering.
 MIDRIB - The extension of the stipe through an undivided blade.
 PETIOLE - Stem of a leaf.
 PETIOLED - With a stem.
 PINNA - A primary division of a frond.
 PINNAE - Plural for Pinna.
 PINNATE - Blade cut to rachis.
 PINNATE, TWICE - Blade cut to rachis and pinnae cut to midrib.
 PINNULE - A division of a pinna.
 RACHIS - The extension of the stipe through the blade.
 ROOTSTOCK - An underground stem.
 SCALES - The chaff on stems of ferns.
 SEGMENT - One of the smaller divisions of a frond.
 SESSILE - Without a stalk.
 SORI - A group of sporangia.
 SPORANGE - A sac containing spores.
 SPORE - A minute reproductive body, in ferns single-celled.
 STALK - Same as stipe.
 STERILE - Without spores.
 STIPE - The petiole of a frond.
 SUBTERMINAL - Near to, but not reaching the end.
 VEINLET - One of the small branches of the veins of a frond.

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