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West Virginia Ferns

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Ferns occupy a subordinate position in West Virginia plant communities, but this does not mean that they have no importance. Some species cover bare areas with dense stands of vegetation, thus preventing erosion and helping to rebuild the soil. Even in the forest, ferns help to hold moisture and they contribute to the development of humus.

The ornamental value of ferns is well known. Though without flowers, their graceful fronds decorate woodland landscapes and many fern lovers like to bring them into their wild gardens.

More than 50 kinds of ferns are found wild in West Virginia. A few of them are described in this booklet.

Structure

Ferns produce by spore, like mosses, but they have vascular tissue, like flowering plants, hence they can grow taller than mosses. West Virginia ferns have the stems underground (rootstocks or rhizomes), while the above ground portion is a leaf, or **frond**. This leaf is connected to the rootstock by the **stipe** and it is usually compound, with numerous leaflets or **pinnae**. The continuation of the stipe through the compound leaf is the **rachis**.

Reproduction

Fern spores are produced in a **sporangium**. Several sporangia are grouped in a cluster known as a sorus; the sori often appear as dots on the underside of the leaf. Frequently the sorus is covered with a protective flap of tissue, the indusium.

The spores, when mature, may fall on the ground and develop into a small flattened plate of green cells the size of your fingernail, called a gametophyte, or prothallium. This produces sex organs, the **archegonium** and the **antheridium**, in which eggs and sperms, respectively, are produced. When the sperm unites with the egg a **zygote** is formed and from this a young sporophyte develops, growing eventually into the familiar fern plant once more.

Cinnamon Fern

Osmunda cinnamomea



The cinnamon fern gets its name from the conspicuous cinnamon-brown masses of spores, borne on a separate stalk from the leafy frond. It is one of our smallest ferns, the leaves often higher than a man's head. The curled young fronds are called fiddleheads and the hearts are sometimes gathered for making fern salad. These ferns are found in various habitats and in every county.

Interrupted Fern

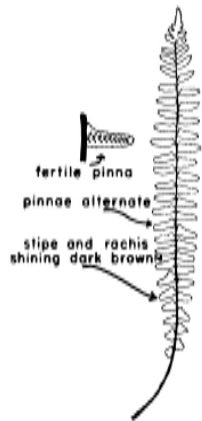
Osmunda claytoniana

The interrupted fern was discovered in Virginia by John Clayton around 1730 and was named for him by Linnaeus. The pinnules bearing the spores, instead of being at the top of the plant as in royal fern or on a separate stalk as in cinnamon fern, are in the middle of the green frond, "interrupting" the regular rows of green leaflets. This fern is very common on the road banks, but thrives in a wide variety of habitats in every county.



Ebony Spleenwort

Asplenium platyneuron



The spleenworts were named from the shape of the sorus, resembling the spleen, giving the rise to the ancient belief the plants would cure diseases of the spleen. The name ebony refers to the color of the stipe, but this is more reddish-brown than black. This fern is common in every county, mostly in rocky woods, especially under black walnut trees.

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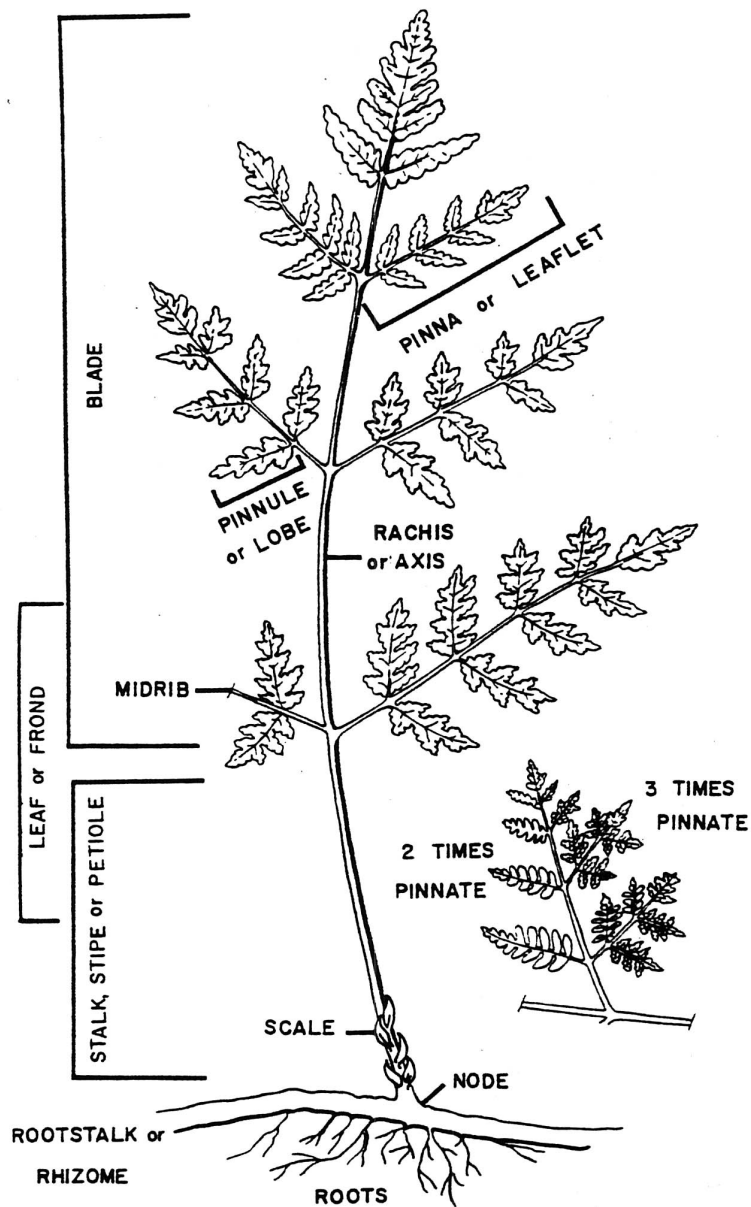
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PARTS OF A FERN



Hay-Scented Fern

Dennstaedtia punctilobula

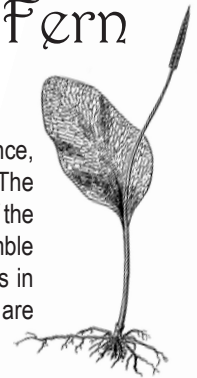


This fern is quite glandular and the fronds when crushed have a strong odor of drying hay. Although seemingly delicate, it has a remarkable ability to thrive in open sun, and has occupied thousands of acres of mountain pasture land, heartily detested by farmers who have seen the grass crowded out by it. It is much less common in the hilly section of the State.

Adder's Tongue Fern

Ophioglossum vulgatum

These little plants are very fern-like in appearance, the leaf-blade not being divided as are the familiar ferns. The spores are produced in a segment arising from the base of the blade in a manner which early herbalists fancied to resemble a snake's tongue. They grow among grasses and weeds in moist meadow, probably in most parts of the state, but are rarely seen.



Rattlesnake Fern

Botrychium virginianum



This fern, one of the most common and more familiar in West Virginia, is found in rich woods in every country and has been regarded as a "ginseng indicator." The spikes of sporangia are fancied to resemble the rattles of a rattlesnake. It is an ornamental plant easily grown in a woodland garden with wildflowers.



Marsh Fern

Thelypteris palustris

The marsh fern grows in marshes, wet meadows, and margins of bogs. It has been found in Barbour, Braxton, Cabell, Gilmer, Grant, Greenbrier, Hampshire, Lincoln, Mercer, Mineral, Monongalia, Nicholas, Ohio, Pendleton, Pocahontas, Preston, Randolph, Tucker, Upsher, Webster, and Wood Counties, and probably occurs elsewhere.



Royal Fern

Osmunda regalis

The royal fern is "regal" in appearance, being 2-6 feet tall with clusters of sporangia at the top supposed to look like flowers and suggesting another common name, flowering fern. It is common in swamps and bogs throughout the state, except perhaps in the Northern Panhandle.

Mountain Spleenwort

Asplenium montanum

The mountain spleenwort is an evergreen fern, found only in the mountain counties, growing in damp, shaded crevices in sandstone or shale rocks, never on limestone. Owing to its specialized habitat, it is practically impossible to grow it in a woodland garden.



Sensitive Fern

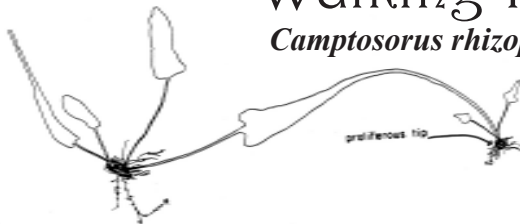
Onoclea sensibilis

The sensitive fern is not sensitive to touch, but probably got its name from its sensitivity to early frosts. The spore are produced on stalks separate from green fronds; the little pinnae bearing the spores roll up at maturity into bead-like structures; suggesting another common name, bead fern. It is found in moist meadows and woods in every county, even in the high mountains.



Walking Fern

Camptosorus rhizophyllus



The walking fern is one of the easiest to identify of all of our native ferns. The name refers to the way the plants seem to "walk" by producing new plantlets at the tips of the slender blades. It is not abundant but probably occurs in every county, usually on shaded limestone ledges, but occasionally on sandstone.

Marginal Shield Fern

Dryopteris marginalis

This fern gets its common technical names from the position of the sori, which lie near the margins of the leaf segments. It is common throughout the State in rich woods and is the only evergreen twice-pinnate fern likely to be found in West Virginia woods in winter. It is attractive, desirable, and easily grown in fern gardens.



Intermediate Shield Fern

Dryopteris intermedia



The intermediate fern is a lacy, evergreen thrice-pinnate fern, common in nearly every wooded area in the state. It is a most desirable fern for the woodland garden and is used by the millions of fronds by the florists, who call it fancy fern. It hybridizes with other species of ferns, and therefore seems "intermediate" between them.

Climbing Fern

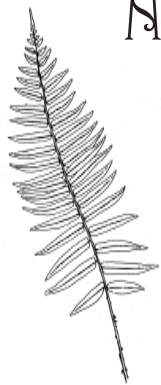
Lygodium palmatum

This is the only West Virginia fern with a twining stipe and rachis. It climbs tree trunks and shrubs to a height of around 3 feet. Climbing fern is just rare enough in West Virginia so that its discovery is somewhat of a thrill. It has been found in Fayette, Greenbrier, Harrison, Nicholas, Preston, Raleigh, Upshur and Webster Counties.



Narrowleaf Athrium

Athyrium pycnocarpon



This fern remotely resembles the Christmas fern, but the arrangement and shape of the sori are quite different. It occurs only in the richest woods, often on limestone, and is probably found in every county. It is a very graceful and attractive fern.

Christmas Fern

Polystichum acrostichoides

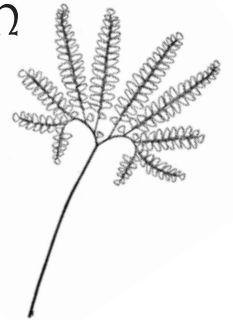


The Christmas Fern, as the name suggests, is an evergreen fern, widely used for Christmas decorations, and throughout the winter. It grows in every county, on shaded slopes, chiefly on infertile soil, where it helps to retard erosion. It is extremely variable, and a large number of varieties have been described.

Maidenhair Fern

Adiantum pedatum

No fern in the state is better known or more admired than the maidenhair. It shares its popularity with the Christmas fern, but yields in beauty to no other species in the state. It is found in humus-rich woods in every county. It thrives in cultivation and should be in every woodland garden.



Goldie's Shield Fern

Dryopteris goldiana



The name shield fern refers to the shield-shaped indusium found in members of the genus *Dryopteris*; Goldie was John Goldie, who discovered the fern at Montreal, Canada. Another common name is wood fern, but this is not very distinctive, since most of our ferns are found in the woods. This fern is found in rich woods, probably in every county, ascending to 4,500 feet in the Alleghenies.



Polypody

Polypodium virginianum

This is another familiar fern, a handsome evergreen plant adorning rocky woods in most parts of West Virginia, or occasionally found on logs or the bases of tree trunks. The name Polypodium means "many feet," an allusion to the long cord-like rootstock at the surface of the ground, providing "feet" for numerous fronds.



New York Fern

Thelypteris noveboracensis

This is one of the easiest ferns to identify, since the leaf "tapers both ways." There is no explanation as to why it is called New York Fern, since it ranges all the way from Canada to Georgia. It is found in rich woods and thickets, more common in damp situations and acid soil, in every county of the state.

Lady Fern

Athyrium asplenioides

No group of ferns in West Virginia is so confusing as the lady ferns; so many varieties have been named that it is difficult to write down a description that would fit all of them. The elongated sori are usually curved. Some variety of lady fern occurs in every county of the state, often in great abundance.



Silvery Athyrium

Athyrium thelypteroides

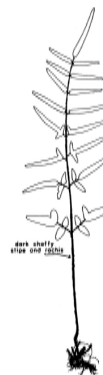
The silvery athyrium somewhat resembles the New York fern, since the fronds tend to taper at the base, but can be distinguished by its chaffy stipe. As the sporangia mature they push back to the indusium and the elongated sori develop the silvery appearance to which the fern owes its name.



Bracken

Pteridium aquilinum

When fire sweeps over mountain areas, the bracken quickly establishes itself, making nearly solid stands over thousands of acres. It thus has an economic importance, helping to prevent erosion and to rebuild the soil. It may reach a height of 7 feet and is the largest in West Virginia fern. Although much more abundant in the mountains, it probably occurs in every county.



Purple Cliff-Brake

Pellaea atropurpurea

The purple cliff-brake is a very attractive fern, ornamenting limestone cliffs and ledges, as well as invading masonry, especially in the eastern panhandle. The stipe is a very dark purplish-brown, almost black. It is chiefly restricted to the mountain counties, but does occur in some hilly sections.