



Ferns Workshop

Quick Guide and Resources

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Key Characteristics

The cheat sheet for *some* ferns

SPORE COLOR

Careful! Don't mistake 'unripe' spores, which will be green, for mature green or golden spores, look at multiple sori/sporangia to find fully developed spores.

Black or Brown Spores

(most ferns, these are viable longer, have dormant period)

Thelypteridaceae

Dryopteridaceae

Green Spores

(photosynthetic, no dormancy, germinate immediately)

Osmundaceae (cinnamon, royal, interrupted)

Equitaceae (horsetails)

Onocleaceae

Golden Spores

Polypodiaceae (polypody ferns)

SHAPE OR NUMBER OF VASCULAR BUNDLES

2 VASCULAR BUNDLES

(to see, clip a cross-section of stipe & peel)

Woodsiaceae

Athyrium spp. (lady fern)

Thelypteridaceae

Phegopteris spp. (beech ferns)

Thelypteris kunthii (southern shield fern),
now *Christella kunthii*

'SMILEY FACE' VASCULAR BUNDLES

2 large, several small bundles in a crescent

(to see, cut a clean cross section at base of stipe)

Dryopteridaceae (wood or log ferns)

C-SHAPED VASCULAR BUNDLES

(to see, cut a clean cross section at base of stipe)

Onoclea sensibilis (sensitive fern)

U (Omega) VASCULAR BUNDLES

(to see, cut a clean cross section at base of stipe)

Dennstaedtiaceae

Dennstaedtia spp. (more u-shaped)

Hypolepis spp. (strong omega shape)

INDUSIUM SHAPE

Careful! Look for fully developed sporangia, older sporangia will be brown and 'fuzzy', shriveled or may have fallen off.

Reniform indusia over round sporangia

Dryopteridaceae (wood or log ferns)

Parathelypteris noveboracensis (New York fern)

Thelypteris spp.

NO indusia ("exindusiate")

Polypodiaceae

Pleopeltis michauxiana (resurrection fern)

Polypodium spp. (rock polypodies)

Phegopteris hexagonoptera (broad beech ferns)

Elongate indusia open on the side

(eyebrow or taco shell-shaped)

Asplenium spp. (spleenworts)

Athyrium spp. (lady fern, some sori cross-over veins)

Deparia spp. (silvery glade fern)

Diplazium spp. (now *Homalosorus* spp.)

Elongate indusia, chain-like

(links of chain or sausages)

Woodwardia spp. (netted-chain ferns)

Cup-shaped indusia

Dennstaedtia punctiloba (hay-scented fern)

Recurved or in-rolled leaf margins

Adiantum spp. (maidenhair ferns)

Cheilanthes spp. (lip ferns), now *Myriopteris* spp.

Pteridium aquilinum (bracken)

(on both fertile & sterile fronds)

Hypolepis spp. (rarely form sori)

DIMORPHIC FRONDS

(separate fertile/sterile fronds)

Botrypus (spring), *Botrychium*, *Sceptridium* (fall)

Matteuccia struthiopteris (ostrich fern)

Onoclea sensibilis (sensitive fern)

Osmundastrum cinnamomeum (cinnamon fern)

Woodwardia areolata (netted-chain fern)

HEMIDIMORPHIC FRONDS

(separate fertile/sterile pinnae on same frond)

Osmunda spectabilis syn. *O. regalis*, (Royal fern)

Osmunda claytoniana (interrupted fern)

Polystichum acrostichoides (Christmas fern)

Fern Resources

Fern Workshop, 2016, Instructor, Teri Nye, BS (biology/botany), MLA

ONLINE FERN RESOURCES

American Fern Society, amerfernsoc.org
(see Fiddlehead Forum Archive here)

Connecticut Botanical Society (Ferns),
www.ct-botanical-society.org/ferns/index.html
(Good details with multiple views of species and key characters)

Ferns of the World, www.fernssoftheworld.com

Go Botany, gobotany.newenglandwild.org
(simple online keys)

Hardy Fern Library, hardyfernlibrary.com/ferns/

Native & Naturalized Plants of Georgia and the Carolinas, www.namethatplant.net
(great photos, keys, comparisons, and nomenclature)

Quick Guide to Common Ferns of New England (CT Botanical Society), www.ct-botanical-society.org/docs/fernchart.html

RESOURCES BY GENUS

Dryopteris

Fiddlehead Forum : Bulletin of the American Fern Society, Vol 8, No. 4 (Jul/Aug 1981). Online at <http://amerfernsoc.org/ffa/Fiddlehead%20Forum/FF%20Volume%201-10/v8no4.pdf>

Equisetum

Hauke, Richard, L. Horsetails (*Equisetum*) in North America. *Fiddlehead Forum: Bulletin of the American Fern Society*, Vol 10, No. 6, p. 39-42. Online at <http://amerfernsoc.org/ffa/Fiddlehead%20Forum/FF%20Volume%201-10/v10no6.pdf>

Pryer, K.M., Schneider, H., Smith, A. R., Cranfill, R., Wolf, P. G., Hunt, J. S., Sipes, S. D. Horsetails and ferns are a monophyletic group and the closest living relatives to seed plants. *Nature*, 409, 618-622 (1 February 2001)

Polypody

Stuart, Tom. *Fiddlehead Forum: Bulletin of the American Fern Society*, Vol 36, No. 2&3. Online at <http://amerfernsoc.org/ffa/Fiddlehead%20Forum/FF%20Volume%2035-36/Fiddlehead%20Forum%20Vol%2036%20No%202-3.pdf>

FAVORITE FERN BOOKS

A Natural History of Ferns, by Robbin Moran

Fern Finder, by Hallowell and Hallowell. Nature Study Guide Series (now published by Menasha Ridge Press)(pocket-size, good for getting into the ballpark while in the field). <http://www.amazon.com/Fern-Finder-Central-Northeastern-Eastern/dp/0912550244>

Fern Grower's Manual, by Hoshizaki and Moran, Timber Press

Field Guide to the Ferns and other Pteridophytes of Georgia, by Lloyd H. Snyder, Jr. and James G. Bruce. Reprinted in 2003

Ferns of Alabama (Gosse Nature Guides), by John W. Short, Daniel D. Spaulding

Flora of the Southern and Mid-Atlantic States, by Alan S. Weakley. **New May 15, 2015 version** is available in pdf format online at <http://www.herbarium.unc.edu/flora.htm>

Wildflowers & Plant Communities of the Southern Appalachian Mountains & Piedmont, by Tim Spira. UNC Press.

SMARTPHONE APP

FloraQuest is a new app for the iPhone and iPad that connects you with everything you need to know about naturally occurring plants in the Southeast and Mid-Atlantic US. Available in Apple App Store.

