

Identifying Ferns

in inland South Florida

Some random thoughts about identifying ferns and using this guide...



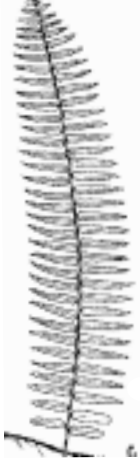

- There is more information here than you probably want or need, so don't try to learn it all and have the volume overwhelm you. This does not make interesting bedtime reading.
- If you're identifying ferns for the first time, try to learn their scientific names, or at least a memorable portion of them, instead of their common names (see page 30).
- Use the guide on pages 2-3 by identifying the TYPE of frond first. Only then look at the details. It narrows your options and makes identification much less burdensome.
- Ferns don't always follow the rules and look just like the photos or drawings in books. Accept that once in a while there are ferns with "birth defects," such as the *Blechnum serrulatum* at right that branches into two tips.
- Ferns are unique plants with their own vocabulary (glossary on pages 28-29). However, some guides may use different terms for the same plant part. Use what works for you; just know that if you're using several references, occasionally different authors may use different names for the same thing.
- Most guides suggest looking at veins, sori patterns, and rhizomes to make positive identification. That's excellent advice, but you may not always be able to see them. Look for other clues to narrow your choices. Some ferns prefer wet habitats, some seasonally wet areas, and others dry areas, and some look different in different habitats (*Blechnum serrulatum* – Swamp Fern – is lush, arching, and in clumps in wet areas, but it is stunted, stiff, and solitary in dry areas). Look at the shape of the frond – does it taper at both ends or just at the tip? Are the pinnule tips pointed or rounded?
- Have fun and don't be easily discouraged.



Dick Brewer

Guide to Fern Identification

1. Identify the type of frond using the drawings & descriptions below
2. Start with each of the #1 phrases and go through the list until you get a "yes" description
3. If there are additional numbers below #1, go to all of the #2 descriptions until you get a "yes"
4. Continue until you run out of numbers. Your last "yes" description identifies the fern.

 <p>SIMPLE undivided</p>	<ol style="list-style-type: none"> 1. Like branched green sticks, to 6" or more, often in clumps <i>Psilotum nudum</i>, p. 4 1. Fronds appear leaf-like, often paired, at ground level <ol style="list-style-type: none"> at base of leafless fertile stalk <i>Ophioglossum petiolatum</i>, p. 4 1. Fronds slender, 3/8" or less <ol style="list-style-type: none"> Edges curled under, hangs like bunch of limp green linguini <i>Vittaria lineata</i>, p. 5 Edges not curled under, fronds arching <i>Campyloneurum angustifolium</i>, p. 5 1. Fronds wider than 1/2", strap-shaped, arching <ol style="list-style-type: none"> Full frond covered with dimples above and below <i>Campyloneurum phyllitidis</i>, p. 6 Edges serrated; sori in angled lines towards tip of frond (rare) <i>Asplenium serratum</i>, p. 6
 <p>PINNATIFID cut nearly to the midvein but not quite</p>	<ol style="list-style-type: none"> 1. Fronds mostly 6" or smaller, in clumps <i>Pleopeltis polypodioides</i>, p. 7 1. Fronds 10" or longer, a few to several pairs of pinnae which taper to a point <ol style="list-style-type: none"> Pinna taper at tip <u>AND</u> base, several pairs of small pinnae at base <i>Pecluma ptilodon</i>, p. 7 Rhizome thickly covered with golden hairs & finger-thick <i>Phlebodium aureum</i>, p. 8 Rhizome green or black, smooth (uncommon, exotic) <i>Phymatodes scolopendria</i>, p. 8
 <p>PINNATE blades divided into leaflets; each leaflet narrowly attached to the main axis</p>	<ol style="list-style-type: none"> 1. Fronds really large (6' or more); pinnae wide, leathery, smooth, and relatively thick <i>Acrostichum danaeifolium</i>, p. 9 1. Terminal pinna (but no others) divided into three lobes <i>Tectaria incisa</i>, p. 9 1. Terminal pinna longer than other pinnae <ol style="list-style-type: none"> Sori linear along midrib; frond medium green; stem green <i>Blechnum serrulatum</i>, p. 10 Sori along edge; stem noticeably hairy; frond dark green (exotic) <i>Pteris vittata</i>, p. 10 Sori completely cover underside of pinnae (rare) <i>Thelypteris serrata</i>, p. 11 1. Terminal pinna not longer than other pinnae <ol style="list-style-type: none"> Most pinnae forked at tip, almost a fishtail-like <i>Nephrolepis biserrata</i> cv. <i>forcans</i>, p. 11 Pinnule tips pointed <ol style="list-style-type: none"> Pinnae spaced out; fronds usually 4-8', vine-like <i>Nephrolepis biserrata</i>, p. 12 Pinnae close; midrib dividing into two almost equal parts <i>Nephrolepis exaltata</i>, p. 12 Short erect hairs on pinna midveins, stipe dark (exotic) <i>Nephrolepis multiflora</i>, p. 13 Pinnule tips blunt & rounded, pinnae close, round tubers on many roots (exotic) <i>Nephrolepis cordifolia</i>, p. 13
 <p>PINNATE-PINNATIFID pinnate because it has separate leaflets on the main axis, and pinnatifid because each leaflet has cuts (but not necessarily nearly to the midvein)</p>	<ol style="list-style-type: none"> 1. No small tuft of rusty-brown hairs at pinna base; sori on underside of pinnae 2. Frond upperside smooth with no or very few hairs <ol style="list-style-type: none"> Pinnules cut halfway to midvein, rounded; shiny <i>Thelypteris interrupta</i>, p. 14 Pinnules cut to (or nearly to) midvein; sori at pinnule midvein <ol style="list-style-type: none"> Pinnae very narrow; a few hairs on top <i>Thelypteris palustris</i>, p. 14 Pinnules rounded; dark green pinnae <i>Dryopteris ludoviciana</i>, p. 15 Pinnules taper to point; lobes short, blunt; chain-like veins <i>Woodwardia virginica</i>, p. 15 Lower surface conspicuously resin-dotted (rare) <i>Thelypteris resinifera</i>, p. 16 Terminal pinna divided into 3 lobes, lowermost pinna stalked <i>Tectaria heracleifolia</i>, p. 16 2. Frond somewhat to definitely hairy <ol style="list-style-type: none"> Blade triangular shaped <ol style="list-style-type: none"> Lobes separated; hairy all over <i>Thelypteris kunthii</i>, p. 17 Lobes close; lower frond stems not hairy (rare) <i>Thelypteris dentata</i>, p. 17 Blade oval-shaped (rare) <i>Thelypteris ovata</i>, p. 18 1. Small tuft of rusty-brown hairs at base of each pinna where midrib of pinnae meets midrib of frond; no sori on any pinnae but borne on separate spore-bearing frond) <i>Osmunda cinnamomea</i>, p. 19

frond the "leaf" of the fern; fertile fronds have sori, sterile fronds don't; the two parts of a frond are the blade (the top part with green leaves) and the stipe (the bottom part with no leaves)

midrib the center "vein" on each pinna

pinna the leaves on the blade (plural *pinnae*)

pinnule each segment on the pinna

- # Guide to Fern Identification

Notes:

3

Psilotum nudum Whisk Fern

not a true fern but an example of the oldest form of land plant with a vascular system

DESCRIPTION no roots nor leaves; slender stems creep underground ; erect, green stems branching several times in half bearing tiny, widely separated, scalelike bracts; 6–16” tall; instead of leaves it has tiny scales along the branches.

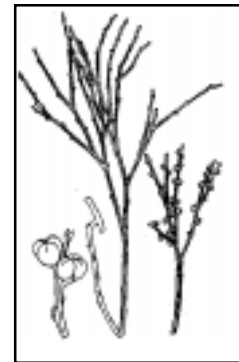
RHIZOME slender, creeping, branched, dark, hairy

SPORES sporangia solitary; three-chambered, yellow to yellow-brown; infrequent; found at base of scales on branches

VEINS none

GROWTH forms large clumps in crooks and nannies of trees and occasionally terrestrial at tree bases and on fallen logs and hummocks in low wet woods

SIMILAR none



Ophioglossum petiolatum Stalked Adder's-Tongue

DESCRIPTION cylindrical stem; fronds 2-8” tall, sterile blade leaf-like, lance-shaped and 1– 2-1/2” long; fertile stalk 1–3-1/2” long and tipped with almost layered sori (*second photo at right*); two or three leaved; slightly erect stem

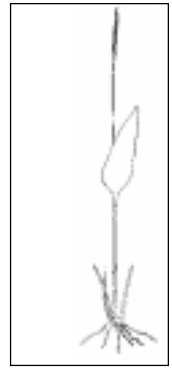
RHIZOME like small roots

SPORES at end of fertile stalk; in rows (*second photo at right*)

VEINS netted

GROWTH moist meadows, moist open woods

SIMILAR none





Vittaria lineata..... Shoestring Fern

Other common names: Grass Fern

DESCRIPTION SIMPLE FROND: grasslike, drooping, very narrow, smooth shiny and leathery, closely crowded on a short rootstock; 12-24" long, 1/16-1/8 inch wide

RHIZOME short-creeping with minute iridescent scales

SPORES occur in a line along the margin of each frond; they are on the underside of the blade, under rolled edges

VEINS present, but not at all noticeable

GROWTH trunks of cabbage palms and occasionally palmettos and oaks; not deciduous, but seems to go dormant at during late winter and early spring

SIMILAR none here



Campyloneurum angustifolium Narrow Strap Fern

DESCRIPTION SIMPLE FROND: slender ribbon-like blade tapering at both ends, dark green to yellowish, 12-24" long, 1/4 to 3/8" wide

RHIZOME short-creeping; white-waxy among scales

SPORES occur in single line on each side of rachis

VEINS inconspicuous

GROWTH epiphytic; found low on bases of pond apples, oaks, and other rough-barked trees, usually above water in hammocks

SIMILAR *Vittaria lineata* (Shoestring Fern) has edges of blades curled under to hide sori which are toward the margins; also narrower and hang more limply

Campyloneurum phyllitidis Strap Fern

Other common names: Long Strap Fern

DESCRIPTION SIMPLE: single and undivided, long and slender, upright, shiny and lime-green in color; stipe short; upper side of frond is scattered with small bumps in a mirror image of the sori pattern on the underside. 15–30 inches long, 1.5–2.5 inches wide

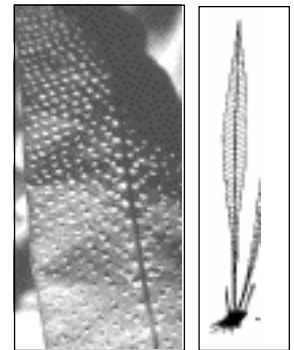
RHIZOME short-creeping, scaly

SPORES sori appear as small dots in two rows between each major vein, scattered throughout underside of the frond (*drawing below right*)

VEINS prominent; netted (angled in a herringbone one pattern along the midrib of the frond)

GROWTH epiphytic; usually grows as a clump on fallen tree trunks, stumps, cypress knees or other places rich in organic debris

SIMILAR *Campyloneurum costatum* (Tailed Strap Fern)
dark green, droopy, wavy edges, small, taillike tip on frond
Campyloneurum augustifolium (Narrow Strap Fern)
blades much narrower; sori in single line on each side of rachis
Asplenium serratum (Bird's Nest Fern)
sori linear and parallel, leaf edges serrated



Asplenium serratum (RARE) Bird's Nest Fern

Other common names: American Bird's-Nest Fern

DESCRIPTION SIMPLE: single and undivided; strap-shaped; stipe very short (1/2"); blade margin serrated (*photo near right*); 12–30" long, 2–4" wide; dark iridescent green

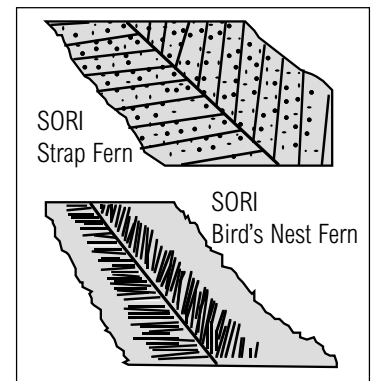
RHIZOME short-creeping, erect, stout

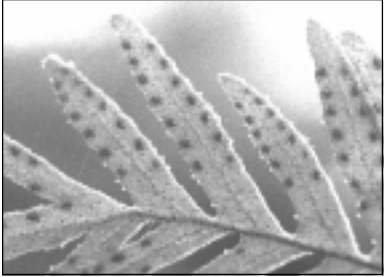
SPORES sori appear as parallel lines on underside of frond, distinguishing it from the Strap Fern (*drawing above right*)

VEINS very numerous and closely placed, once-forked near the midrib (*photo near right*)

GROWTH on ground, logs, and tree trunks; leaves few or several in a crown, arching; midrib often purplish beneath; grows best in dense overcover, perpetual shade and twilight.

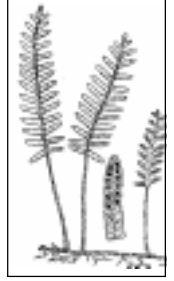
SIMILAR *Campyloneurum phyllitidis* (Strap Fern)
sori as dots in two rows between major veins;
edges not serrated





Pleopeltis polypodioides Resurrection Fern

Other common names: Gray Polypody, Tree Polypody also *Polypodium polypodioides*



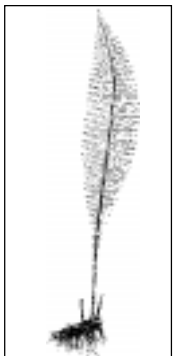
- FROND** PINNATIFID: closely packed clumps of open green or curled dry fronds, 4–8" tall, dark green when open; stipe 1/3 to 1/2 frond length; pinnae 7–14 pairs, about 1/8" wide, densely scaly on lower surface but few or no scales on upper surface
- RHIZOME** long, thin, difficult to detect because of sturdy attachment to host plant
- SPORES** several sori form around end of lobes; underside of each frond is covered with tiny brown scales
- VEINS** obscure, forking
- GROWTH** on rough tree bark, dead stumps, prostrate rotting logs; occasionally forms terrestrial colonies in well-drained soil. In dry weather, fronds shrivel, shrink, and curl up; tips curl inside towards upper surface
- SIMILAR** *Polypodium ptilodon* (Comb Fern)
much larger (frond 20–36"); terrestrial; blade tapers toward both tip and base (Resurrection Fern only tapers at tip)



Pecluma ptilodon Greater Comb Fern

Other names: Comb Polypody, Comb Fern *Polypodium ptilodon*, *Polypodium pectinatum*

- DESCRIPTION** PINNATIFID: pinnae rounded; similar to Resurrection Fern but larger (frond 10–36"); blade tapers toward both tip AND base instead of just the tip; rachis purplish to blackish; when dries out, pinnae tend to curl in toward rachis (*photo left below*)
- RHIZOME** short-creeping
- SPORES** paired between midveins and margins of pinnae
- VEINS** forked
- GROWTH** mostly terrestrial in moist, shaded areas; sometimes on fallen logs or at tree bases where there's organic matter
- SIMILAR** *Pleopeltis polypodioides* (Resurrection Fern)
much smaller fronds; pinnae don't taper at base



Phlebodium aureum Golden Polypody

Other common names: *Cabbage Palm Fern*, *Serpent Fern* also *Polypodium aureum*
Rabbit's Foot Fern, *Golden Serpent Fern*

FROND PINNATIFID: scattered along the rootstock, light green to yellowish-green, spreading; widely lobed; 15–30" tall; stipe 1/2 frond length

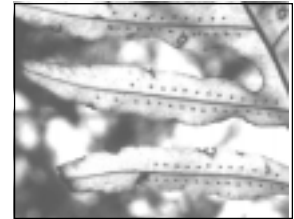
RHIZOME stout, creeping, serpent-like, finger-thick and densely covered with long golden-brown to reddish-brown hairs (*photo center left*)

SPORES sori in one or two rows on each side of the pinna midvein (*photo center right*)

VEINS netted, with two veins feeding each sorus (*photo bottom*)

GROWTH epiphytic; droops from old palm frond boots or other stable, nutrient-rich nooks and crannies, especially cypress bases; rarely terrestrial

SIMILAR *Polypodium scolopendria* (Wart Fern)
 rhizome not hairy; tips of pinnae sharply pointed (*photo below*)



Phymatosorus scolopendria (EXOTIC) Wart Fern

Other names: *Hobnail Fern*, *Serpent Fern* *Polypodium scolopendria*

DESCRIPTION PINNATIFID: pinnae sharply pointed; narrow blade segments; rhizome greenish to blackish

RHIZOME green or black; not hairy like *P. aureum*

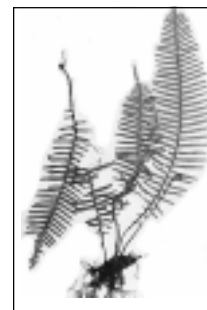
SPORES sori irregularly placed along pinna midvein; in depressed "pockets" which stick out on the upper surface of the frond

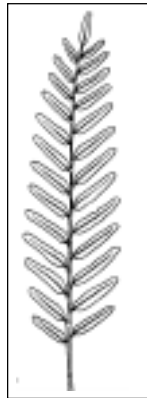
VEINS netted

GROWTH mostly terrestrial

REMARKS cultivated species common in Old World tropics which escaped and is now established in areas of South Florida; landscapers sometimes use it as a ground cover (thick plantings around the golf clubhouse at Pelican Bay)

SIMILAR *Phlebodium aureum* (Golden Polypody)
 rhizome covered with fine brown hairs; mostly epiphytic; pinnae tips more rounded (*photo above*) than Wart Fern (*photo right*)

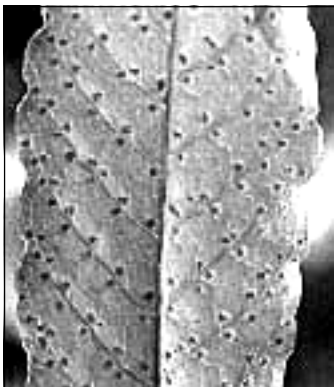




Acrostichum danaeifolium..... Giant Leather Fern

Other names: Inland Leather Fern

- DESCRIPTION** PINNATE: pinnae stiff, have leather look; 20–30 pairs of pinnae lie close together along the stem, all with wavy edges and gradually decreasing in size; pinnae thick and tough-feeling
- RHIZOME** massive, creeping
- SPORES** sori on most of mature fronds; golden-brown to rust-brown and completely cover underside of pinnae; feel like suede or felt
- VEINS** netted
- GROWTH** in fresh-water swamps – likes wet feet; prefers full sun for at least part of the day but will grow where shaded; grows in clumps, arching to more or less erect in the middle of the clump
- SIMILAR** *Acrostichum aureum* (Leather Fern/Coastal Leather Fern)
brackish water, salt marshes, slightly smaller, upper pinnae spaced apart rather than overlapping; sori only on upper 1/4 of mature fronds (top 5 or less pinnae)

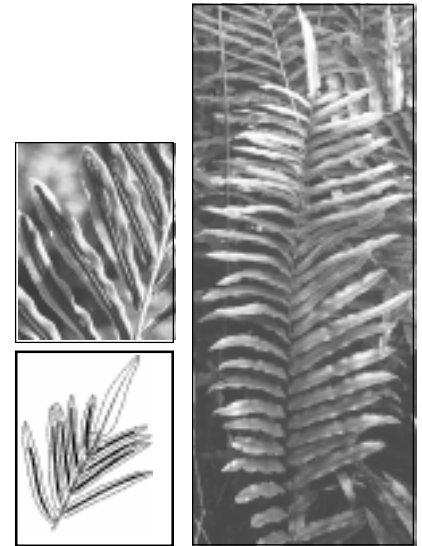


Tectaria incisa (*EXOTIC*)..... Incised Halberd Fern

- DESCRIPTION** PINNATE: terminal pinna has three lobes and lowermost pair of pinnae usually two-lobed; pinna in between mostly oblong; all pinna margins wavy but not serrated; dull green color; mature fronds from 20-50" long
- RHIZOME** stout, ascending
- SPORES** round in single rows on either side of lateral veins (*second photo left*)
- VEINS** netted
- GROWTH** rocky hammocks in shadier areas; found almost exclusively in Broward, Dade, and Palm Beach Counties.
- REMARKS** common in tropical America

Blechnum serrulatum Swamp Fern

- FROND** PINNATE: fronds 2–6' tall, 4–6" wide; stipe 1/3 to 1/2 of frond length; pinnae with fine teeth along margin, narrowed at bases; stiff frond a lighter shade of green; young fronds have a pinkish bluish; terminal pinna segment longer than closest pinnae; blades don't taper at base of frond
- RHIZOME** long-creeping; fronds scattered along rhizome.
- SPORES:** linear in two rows close to the midrib of each pinna
- VEINS** free
- GROWTH** in moist high-light spots; fronds rigid in sunny places, pliable in shade
- SIMILAR** *Thelypteris serrata* (Cypress Fern)
sori completely cover underside of pinnae
Pteris vittata (Ladder-Brake Fern)
pinnae thinner; sori along margins instead of midvein



Pteris vittata (EXOTIC) Ladder-Brake Fern

Other common names: Chinese Brake Fern

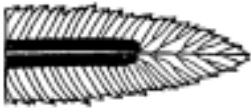
- FROND** PINNATE: 1–3' tall, stipe 1/6–1/3 the frond length.; terminal pinnae are sharply toothed.; stipe and rachis densely clothed with hair-like scales.
- RHIZOME** stout, short-creeping
- SPORES:** sori are along margins on underside of pinnae (pictured at right)
- VEINS** free, forking
- GROWTH** likes higher-nutrient soils in pine woods and disturbed sites
- SIMILAR** *Blechnum serrulatum* (Swamp Fern)
sori only along midvein instead of margin
Thelypteris serrata (Cypress Fern)
sori completely cover underside of pinnae





Thelypteris serrata (*VERY RARE*)..... Cypress Fern

FROND	PINNATE: fronds 2–4' tall; terminal pinna like the lateral pinnae; margin of pinna is toothed
RHIZOME	short-creeping
SPORES	elongate on the cross veins; completely cover underside of pinnae
VEINS	netted; main veins run from midveins to margin with minor veins connecting them in a ladder-like pattern
GROWTH	wet woods; found only in cypress sloughs and pond-apple hammocks
SIMILAR	<i>Blechnum serrulatum</i> (Swamp Fern) sori only in rows adjacent to midvein of pinnae <i>Pteris vittata</i> (Ladder-Brake Fern) sori only along underside of margin of pinnae



Swamp Fern sori



Cypress Fern sori & veins



Ladder-Brake Fern sori



Nephrolepis biserrata cv Furcans..... Fishtail Sword Fern

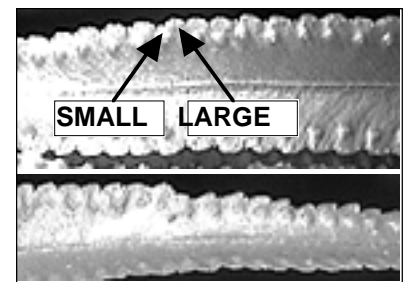
FROND	PINNATE: ends of pinnae fork giving “fishtail” appearance; pinnae spaced apart along midrib, even serrations around edge of each pinna; 3–7' tall, 6–12" wide; tends to be smaller and stiffer in dry areas and more supple and arching in wetter areas
RHIZOME	short-creeping, slightly ascending or erect
SPORES	sori round to semicircular; occur evenly around entire edge of under side of each pinna
VEINS	free
GROWTH	usually terrestrial; often in open places or areas of partial shade; disturbed areas; can vary from vine-like to small shrub
SIMILAR	none

Nephrolepis biserrata Giant Sword Fern

- FROND** PINNATE: vine-like; narrows towards top but doesn't narrow significantly towards base; pinnae spaced apart along midrib, taper to point, and are 4x or more longer than wide; even serrations around edge of each pinna (really tiny teeth alternate with larger teeth, hence the species name "biserrata" – *middle photo*); 3–7' tall, 6–12" wide
- RHIZOME** ascending or erect, scaly, with long threadlike stolons producing young plants along its length
- SPORES** sori round to semicircular; occur evenly around entire edge of under side of each pinna
- VEINS** free
- GROWTH** usually terrestrial but can be epiphytic; often in open places or areas of partial shade; fronds vine-like and clamber over shrubs and up tree trunks
- SIMILAR** *Nephrolepis exaltata* (Boston Fern–native)
pinnae slightly overlapping, taper at top and bottom
Nephrolepis cordifolia (Boston Fern–exotic)
pinnae slightly overlapping, taper at top and bottom
Nephrolepis multiflora (Asian Sword Fern)
dark brown scales on stipe bases,
erect hairs on pinna midvein



Nephrolepis biserrata

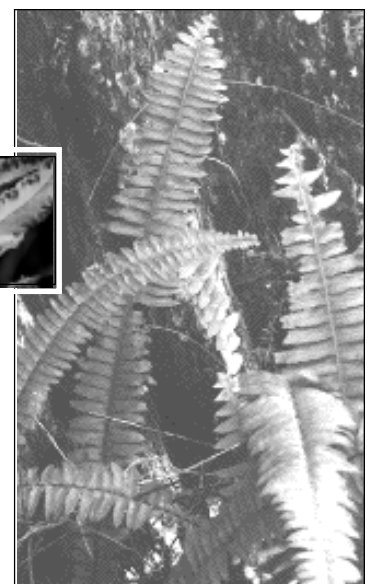


Nephrolepis exaltata

Nephrolepis exaltata Boston Fern–native

Other common names: Sword Fern, Wild Boston Fern

- FROND** PINNATE: fronds 1–7' long, 2.5–5" wide, and taper towards both the tip and the base; most of the pinnae are between 2x and 3x as long as wide and lie next to each other along the midrib of the frond. The midrib of each pinna divides it about evenly for most of its length. The base of each pinna is slightly but not radically widened.
- RHIZOME** ascending or erect, scaly, with long threadlike stolons producing young plants along its length
- SPORES** sori kidney-shaped or semicircular.
- VEINS** free
- GROWTH** sun or shade but develops best in open sunny spots where it is dense; !any kind of hammock on fallen trees and in humus
- SIMILAR** *Nephrolepis cordifolia* (Wild Boston Fern–exotic)
pinnule tips blunt & rounded, tubers on roots, pinnae
Nephrolepis biserrata (Giant Sword Fern)
pinnae spaced apart, fronds more vine-like, pinnae don't taper toward bottom
Nephrolepis multiflora (Asian Sword Fern)
dark brown scales on stipe bases, erect hairs on pinna midvein





Nephrolepis multiflora (*EXOTIC*)..... Asian Sword Fern

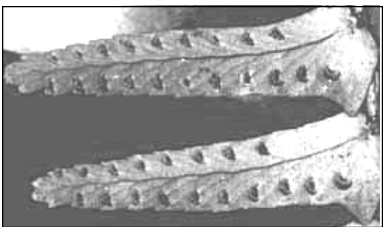
FROND	PINNATE: fronds 1–5' tall , 2.5–5" wide; short erect hairs moderately to densely cover upper surface of central pinnae midveins; dark stipe scales; pinnae usually have thumbs; margin smooth
RHIZOME	ascending or erect
SPORES	sori kidney-shaped or semicircular
VEINS	free
GROWTH	terrestrial or epiphytic
SIMILAR	<p><i>Nephrolepis exaltata</i> (Boston Fern–native) pinnae slightly overlapping, taper at top <u>and bottom</u></p> <p><i>Nephrolepis cordifolia</i> (Boston Fern–exotic) pinnule tips blunt & rounded, tubers on roots</p> <p><i>Nephrolepis biserrata</i> (Giant Sword Fern) pinnae spaced apart, fronds more vine-like</p>



Nephrolepis cordifolia (*EXOTIC*)..... Boston Fern–exotic

Other common names: Sword Fern, Tuberous Sword Fern, Wild Boston Fern

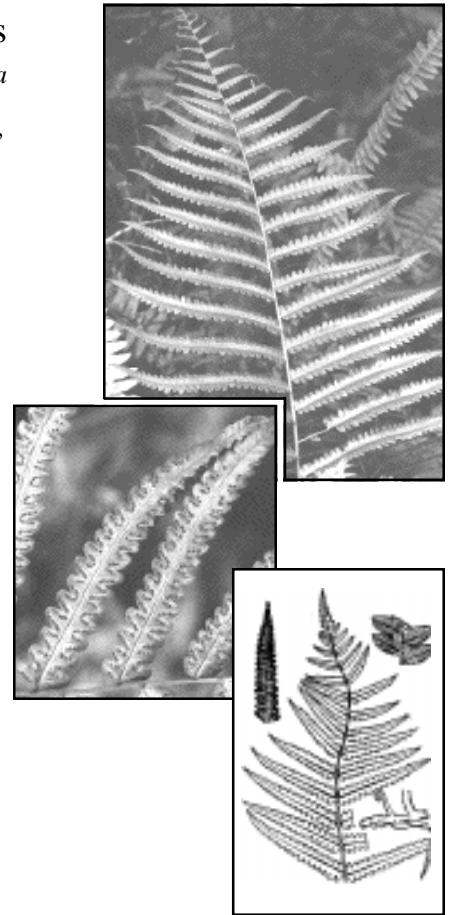
FROND	PINNATE: tips blunt and rounded; fronds 10–30" tall , 1–2.5" wide; noticeable “thumbs” at base of each pinna;
RHIZOME	ascending or erect, scaly, with long threadlike stolons (roots) bearing small tubers
SPORES	sori semicircular; occur evenly around entire edge of under side of each pinna midvein
VEINS	free
GROWTH	usually terrestrial but can be epiphytic, especially on palmettos
SIMILAR	<p><i>Nephrolepis exaltata</i> (Boston Fern–native) pinnae only slightly overlapping</p> <p><i>Nephrolepis biserrata</i> (Giant Sword Fern) pinnae spaced apart, fronds more vine-like, pinnae don't taper toward bottom</p> <p><i>Nephrolepis multiflora</i> (Asian Sword Fern) dark brown scales on stipe bases, erect hairs on pinna midvein</p>



Thelypteris interrupta.....Shiny Thelypteris

Other names: Swamp Shield Fern, Hottentot Fern also *Thelypteris totta*

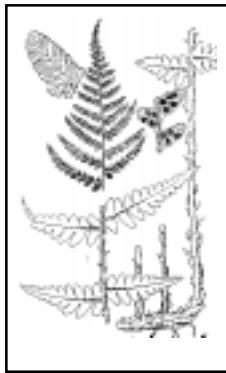
- FROND:** PINNATE-PINNATIFID: fronds spaced distantly; pinnae 30–50” tall, 3/8–1/2” wide, **fronds shiny and dark green**, never dull and never with hairs, tough; pinnules widely lobed; pointed tips on pinna especially noticeable on the “tail” at the top of the frond
- RHIZOME** long-creeping, black, nearly naked, underground
- SPORES** sori form a continuous meandering line along the edge of the pinna; much closer to margins than to midvein of pinnule
- VEINS** lowest veins of neighboring pinnules touch, forming a triangle, with another vein going from the triangle to the cut between the pinnules; only Downy Wood Fern (*Thelypteris dentata*) is similarly veined
- GROWTH** standing shallow water and very moist soil, in full sun or partial shade
- SIMILAR** *Thelypteris palustris* (Marsh Fern)
pinnae very narrow, 12x longer than wide
Dryopteris ludoviciana (Florida Shield Fern)
dark green pinnae; tan scales on stipe and rachis
Woodwardia virginica (Virginia Chain-Fern)
pinnae lobes short and blunt



Thelypteris palustris..... Marsh Fern

- FROND** PINNATE-PINNATIFID: lacy delicate appearance; fronds 18–30” tall; pinnae don’t taper near base but stop abruptly – really long stipe; fertile fronds have segments inrolled; pinnules not lobed
- RHIZOME** long-creeping; fronds distant
- SPORES** medial but appearing closer to edge because of the curled margin; about 8 sori on each side of midvein
- VEINS** some forked between the pinnule midveins and the margins
- GROWTH** wet meadows and swamps – a wide variety of wet situations
- SIMILAR** *Dryopteris ludoviciana* (Florida Shield Fern)
dark green pinnae; tan scales on stipe and rachis
Woodwardia virginica (Virginia Chain-Fern)
pinnae lobes short and blunt, veins netted
Thelypteris interrupta (Shiny Thelypteris)
pinnae very shiny; veins run from base to cut between pinnules

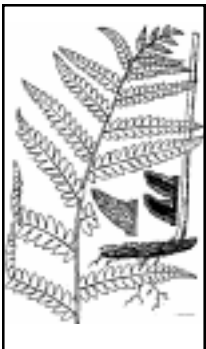




Dryopteris ludoviciana.....Florida Shield Fern

Other common names: Southern Shield Fern, Southern Wood Fern

- FROND** PINNATE-PINNATIFID: lower pinnae strikingly larger and wider than upper pinnae; lustrous dark green, leathery; rhizome, stipe and rachis with tan scales; stipe 1/4 frond length; fertile pinnae noticeably contracted; pinnule edges appear scalloped
- RHIZOME** short-creeping, horizontal, has tan scales
- SPORES** fertile fronds bear sori only in upper half; fertile pinnae much narrower than sterile ones; sori round, 2-3 on each side of midvein
- VEINS** free
- GROWTH** wet woods, swamps, margins of cypress swamps
- SIMILAR** *Thelypteris palustris* (Marsh Fern)
pinnae very narrow, 12x longer than wide
Thelypteris interrupta (Shiny Thelypteris)
pinnae very shiny; veins run from base to cut between pinnules
Woodwardia virginica (Virginia Chain-Fern)
pinnae lobes short and blunt



Woodwardia virginica..... Chain Fern

Other common names: Virginia Chain-fern

- FROND** PINNATE-PINNATIFID: pinnae alternate; thin fronds 1.5–2' long; pinnae lobes triangular-shaped, short, blunt, smooth-margined; fertile and sterile fronds alike ; pinnae deeper cut than *T. interrupta*
- RHIZOME** long-creeping, slender
- SPORES** linear on both sides of pinna midrib and along pinnule midrib
- VEINS** areas enclosed by veins appear chain-like in a single series along leaflet midveins; then ,free to margin
- GROWTH** likes acidic bogs and swamps; prefers edges to open areas around the bases of trees or among cypress knees
- SIMILAR** *Thelypteris palustris* (Marsh Fern)
pinnae very narrow, 12x longer than wide
Thelypteris interrupta (Shiny Thelypteris)
pinnae very shiny; veins run from base to cut between pinnules
Dryopteris ludoviciana (Florida Shield Fern)
dark green pinnae; tan scales on stipe and rachis



Woodwardia:
chain-like vein
pattern top,
frond above, sori
left

Thelypteris resinifera..... Wax-Dot Maiden Fern

Other common names: Glandular Maiden Fern

FROND: PINNATE-PINNATIFID: 3–3.5' tall; lower surface conspicuously resin-dotted (reddish-brown); lower pinnae of blade eared (lobed); pinnules lean toward tip instead of being at nearly right angles to pinna midvein; rachis brownish below blade & yellowish above; pinnules taper at base of blade as well as at tip

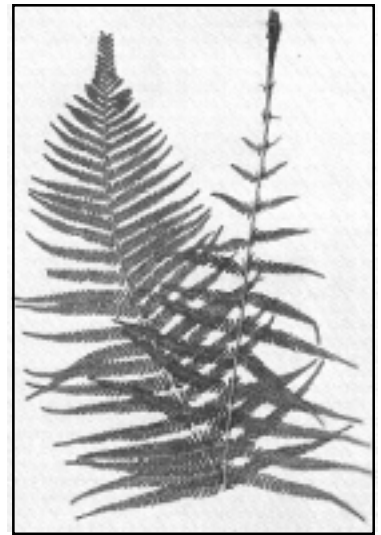
RHIZOME erect, stout

SPORES strongly medial between margin and midvein

VEINS free

GROWTH terrestrial, prefers moist or dry woods

SIMILAR *Thelypteris interrupta* (Shiny Thelypteris)
base pinnules don't taper in, sori marginal
Dryopteris ludoviciana (Florida Shield Fern)
base pinnules don't taper in
Thelypteris palustris (Marsh Fern)
base pinnules don't taper in



Tectaria heracleifolia Broad Halberd Fern

Other common names: Eared Halberd Fern

FROND: PINNATE-PINNATIFID: 14–28" tall and 6–12" wide; one to four pairs of pinnae; lowest pinnae (at base) deeply lobed and pointing down; dark shiny green; rachis becomes midvein of terminal pinna

RHIZOME woody, stout, ascending

SPORES conspicuous on lower surfaces of pinnae in single rows along either side of veins

VEINS netted

GROWTH terrestrial on shady limestone outcroppings, rocky hammocks

SIMILAR *Tectaria incisa* (Incised Halberd Fern)
not dark green or shiny; lower pinnae lack lobes (ears)

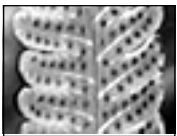




Thelypteris kunthii Wood Fern

Other common names: Widespread Maiden Fern

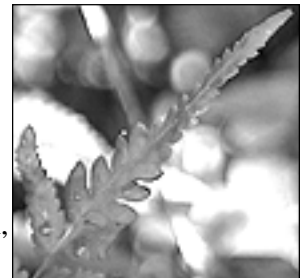
- FROND:** PINNATE-PINNATIFID: pinnules taper to a point but not as obvious as *T. interrupta*; stems and underside hairy, upperside somewhat hairy – feels velvet-like; pinnae lobes separated; base pinnules long (don't taper in); tip tapers to a noticeable "tail"; 22–45" tall, 6–12" wide
- RHIZOME** short- to long-creeping
- SPORES** 3-5 spores parallel and on each side of pinnule midvein
- VEINS** free
- GROWTH** terrestrial, preferring moist or dry wood
- SIMILAR** *Thelypteris dentata* (Downy Shield Fern)
pinnules rounded; hairs on blade uniformly short



Thelypteris dentata (*RARE*) Downy Shield Fern

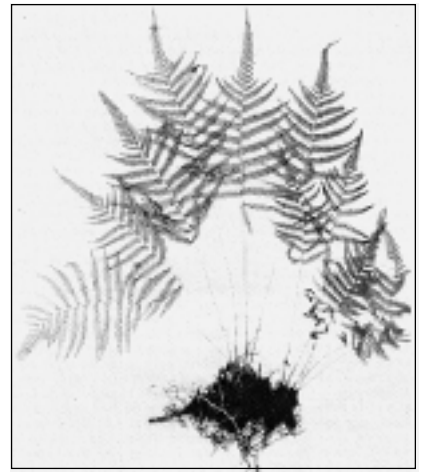
Other common names: Downy Maiden Fern, Downy Wood Fern

- FROND** PINNATE-PINNATIFID: **pinnules rounded**; pinnae hairy on both upper and lower surfaces – feels velvet-like; hairs uniformly short, shorter than sporangia; fronds are thin, a distinctive dull dark green; lower stems of fronds not covered with hairs; pinnae lobes closely spaced; 24–50" tall, 6–14" wide; stipe and rachis purplish
- RHIZOME** short-creeping
- SPORES** 3-5 spores parallel and on either side of pinnule midvein
- VEINS** free; base veins of each pair of adjacent pinna lobes unite into one vein which runs to the edge of the pinna, making a triangle
- GROWTH** moist woods
- SIMILAR** *Thelypteris kunthii* (Wood Fern)
pinnules taper to slight point, hairier
Thelypteris interrupta (Shiny Thelypteris)
only other fern with similar vein pattern, but it is **not** hairy and does not have as pronounced a "tail" at the tip of the blade (*photo above*); it is also much more common



Thelypteris ovata (VERY RARE) Ovate Maiden Fern

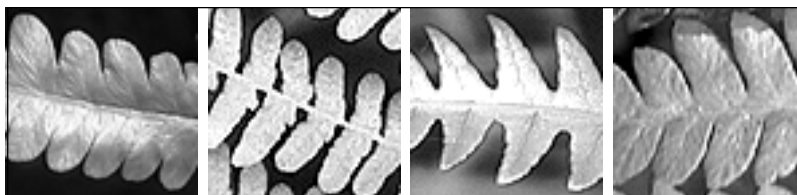
FROND	PINNATE-PINNATIFID: frond oval-shaped rather than triangular; fronds 22–50” tall, 4–20” wide; pinnae about 1/2 inch wide and cut 3/4 way to pinna midvein; hairy below
RHIZOME	short to long creeping
SPORES	sori on either side of pinnule midvein
VEINS	free
GROWTH	moist woods
SIMILAR	none here



More random notes about identification...

If the fern is not readily indentifiable using the guide on pages 2-3, look for other clues

- Note where the fern is growing: Some prefer sun while others prefer shade; some prefer wet areas (*A. danaeifolium*) while others are prefer drier areas (*P. vittata*); some prefer rocky outcroppings (*Tectaria spp.*) while others are found only in sandy soils or muddy areas.
- Note when the fern is growing: some fronds disappear or shrivel as the dry season progresses and/or as temperatures drop (*V. lineata*, *M. torresiana*, *P. polypodioides*, *P. aureum*). Others are the first to colonize an area after a burn (*W. virginica*).
- The appearance of some ferns changes according to where they are growing. *B. serrulatum* is small, stiff, and erect in dry areas, but it is larger, lush, and arching in wet areas.
- Sometimes the sori aren't apparent, and you can't get close enough to the fern to see the veins on the underside of the blades, and the rhizomes are buried under debris and other plants. So look for other clues like the shape of the pinnules and how closely they're cut to the midvein.. It's not always as accurate, but it's a start.



From left to right:

Thelypteris interrupta (Shiny Thelypteris)
Thelypteris palustris (Marsh Fern)
Woodwardia virginica (Chain Fern)
Thelypteris kunthii (Wood Fern)



Osmunda cinnamomea..... Cinnamon Fern

FROND PINNATE-PINNATIFID: blades with a tuft of rusty hairs at the base of each pinna; stipe and rachis with abundant cinnamon hairs, especially in spring; blade light green and glossy; 30–48” tall, 5–10” wide; fertile fronds (spore stalks) arise in late spring and collapse by mid-summer; pinnule tips rounded; pinnae opposite

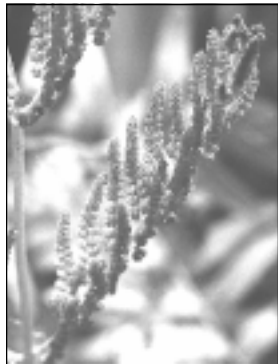
RHIZOME long-creeping; fronds distant

SPORES do not appear on leaves, but on separate leafless frond; spore-bearing frond grows from rhizome separate from sterile fronds

VEINS free, forking

GROWTH swamps and other wet, moist soils

SIMILAR sterile frond looks like a Thelypteris, but no Thelypteris has the rusty hairs at the base of each pinna; Royal Fern is the only other fern that bears spores on a unique structure rather than the pinna underside



Osmunda regalis Royal Fern

FROND: BI-PINNATE: openly branched fronds; pinnule edges serrated; 24–60” tall, 10–20” wide; stipe half the frond length; light green; smallest separate leaflets are unlobed regular pinnules

RHIZOME short-creeping

SPORES sporangia borne on reduced pinnae at the top of vegetative fronds – they look as though they’re on a separate stalk (*photo left bottom*); greenish before maturity, turning red-brown and withering with age

VEINS free

GROWTH grows in terrestrial clumps on wet and moist grounds

SIMILAR none

NOTE: Both ferns on this page – *O. cinnamomea* and *O. regalis* – are unique in that spores are borne on separate fronds (stalks) and not on the pinna themselves. In both, the sori are initially greenish when developing and turn a cinnamon brown color when mature.

Pteridium aquilinum Bracken Fern

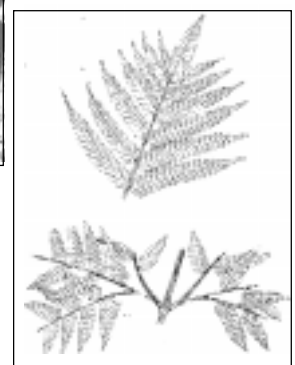
Other common names: Lacy Backen Fern

- FROND** BIPINNATE-PINNATIFID: giant-sized, 3–15' tall and 1–2 feet wide; blade broadly triangular with 3 distinct fronds per stem; stiff and wiry; every part of frond has same narrow width; fronds typically arch from the base ending with the tips pointing back toward the ground
- RHIZOME** long-creeping, subterranean deep in the soil, hairy
- SPORES** completely line edges of pinnae
- VEINS** free, forking
- GROWTH** open woods and meadows in full sun, weedy, abundant
- SIMILAR** Giant Brake Fern (*Pteris tripartita*)
seven fronds per stem



Pteris tripartita (*EXOTIC, RARE*) Giant Brake Fern

- FROND:** BIPINNATE-PINNATIFID: huge and tropical-looking; seven fronds per stem; 3–9' tall; stipe 1/3 frond length, naked; thick purple stem; shiny and smooth to the touch; stem first branches into three parts (hence the name “tripartita”) then each of the side branches branches again
- RHIZOME** ascending, stout
- SPORES** U-shaped line of spores line the pinnule margins
- VEINS** netted
- GROWTH** terrestrial, moist woo
- SIMILAR** Bracken Fern (*Pteridium aquilinum*)
three fronds per stem





Ctenitis sloanei Florida Tree Fern

- FROND:** BIPINNATE TO TRIPINNATE (bipinnate at top, tripinnate at bottom): 30–60” tall and 10–20” wide; stipe nearly half frond length; rachis and blade underside scaly and hairy
- RHIZOME** ascending with red-brown scales (in mature ferns, almost like a short trunk)
- SPORES** parallel to pinnae midvein, spaced about half way between midvein and margin
- VEINS** free
- GROWTH** moist woods
- SIMILAR** *Macrothelypteris torresiana* (Mariana Maiden Fern) pinnae angled from rachis giving a “stepped” appearance to each pinna



Macrothelypteris torresiana (EXOTIC) ..Mariana Maiden Fern

- FROND:** BIPINNATE TO TRIPINNATE (bipinnate at top, tripinnate at bottom): 24-42” tall and 10-20” wide; stipe whitish; blade broadly triangular; fine, lacy appearance; fronds light green; pinnae at slight angle to rachis and each other giving blade a mildly “stepped” appearance (*top photo*); pinnules also slightly stepped (*lower photo*)
- RHIZOME** short-creeping
- SPORES** along pinnae midvein, spaced about halfway between midvein and margin
- VEINS** free
- GROWTH** moist woods
- SIMILAR** *Ctenitis sloanei* (Florida Tree Fern)
pinnae in same plane giving a flatter appearance to blade



Tripinnate: cut once (*top photo left*); those cut again (*lower photo left*); cut third time (*photo above*)



Anemia adiantifolia Pine Fern

- FROND** BIPINNATE-PINNATIFID: blade triangular with pinnae wedge-shaped, coarsely toothed, leathery; to 20" long
- RHIZOME** short-creeping, clothed with dark hairs
- SPORES** borne on two erect, separate pinnae rising from the stipe, just below the sterile part of the blade
- VEINS** free
- GROWTH** pineland, shaded areas
- SIMILAR** none

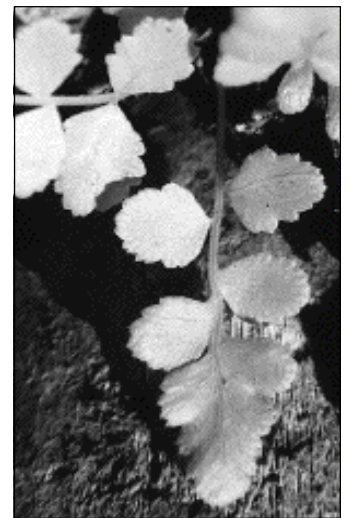


Lygodium microphyllum (EXOTIC) Climbing Fern

Other common names: Old World Climbing Fern

- FROND:** PALMATE: several feet long, 8–12" wide; pinna halves long-triangular and divided into several triangular segments; mature pinnules deeply lobed; rachis twining and tough like fish line
- RHIZOME** slender, creeping, subterranean, hairy; root mats are dense and fee thick
- SPORES** each frond is divided into a few hand-shaped pinnae bearing spores on each of the several stubby "fingers" on the pinnae margins
- VEINS** free
- GROWTH** open woods and more exposed sites near water; vine-like, smothers whole areas of vegetation by climbing on shrubs and small trees creating a canopy that shades out everything underneath; also provides a way for fire to reach the canopy of trees
- SIMILAR** Japanese Climbing Fern (*Lygodium japonicum*)
much smaller and thinner leaves; not known here

Climbing Fern
sterile fronds
top,
vining below

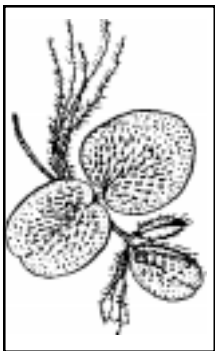
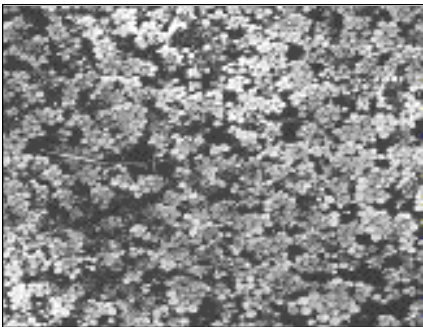




Ophioglossum palmata (*RARE*) Hand Fern

also *Cheiroglossa palmata*

FROND	PALMATE: fronds deeply lobed, hand-like, with several pendant fertile spikes; 4–12” long
RHIZOME	subterranean, fleshy, naked, erect
SPORES	sporangia large; several fertile spikes arise from the stipe near the base of the blade
VEINS	netted
GROWTH	epiphytic; prefers to grow in debris collected in old palm frond boots; also found on trunks of palmettos in pine areas
SIMILAR	none



Salvinia minima (*EXOTIC*) Water Spangles

FROND:	FLOATING: round or oval, undivided, opposite, 1/4–1/2” long; upper leaf surface clothed with stiff branched hairs which trap air and help plant stay upright (will flip back over when dropped upside-down in the water)
RHIZOME	floating on water surface or creeping on mud during dry-downs
SPORES	many fine “hairs” attached to the underside of the pair of leaves are actually a third submerged leaf bearing round sporocarps; spores released underwater from this leaf
VEINS	not really
GROWTH	floating fern; common where it’s too shady for water lettuce to occur
SIMILAR	sometimes misidentified as duckweed, whose leaves are only 1/3 as large and float individually

Azolla caroliniana Mosquito Fern

Other common names: Carolina Mosquito Fern

FROND WATER / FLOATING: leaves minute (less than 1/2 inch long), smooth, branch in equal forkings along rhizome; borne in two rows; each leaf has two round lobes, the upper one green, the lower one colorless; delicate, lacy appearance; in cooler temperatures, has reddish cast overall; frequently looks “mat-like” in appearance

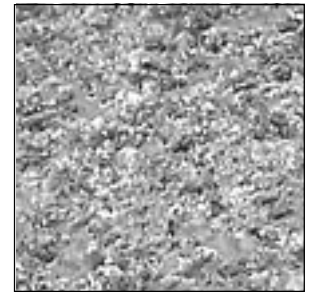
RHIZOME hair-like, branched; roots thread-like

SPORES sporangia produced in separate round structures (sporocarps) located in leaf axils

VEINS not really

GROWTH floating fern; open water, often with Salvinia

SIMILAR none



Marsilea vestita Water-clover

FROND WATER: leaves like a four-leaved clover; 1/4–1/2” long and wide; lightly hairy

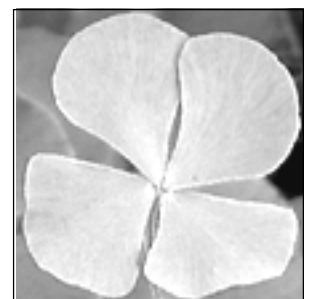
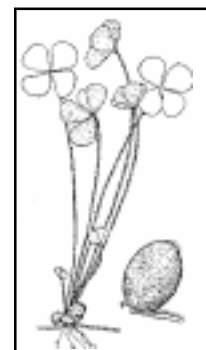
RHIZOME short-creeping; rooted in mud fronds appear to be floating

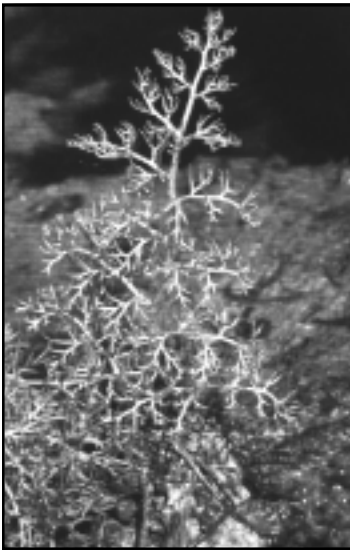
SPORES in round capsules (sporocarp) at base of stipe, 1/8–3/16” long, teeth short and blunt

VEINS not really

GROWTH edges of ponds, rivers, ditches, wet meadows, usually in standing water

SIMILAR none





Ceratopteris pteridoides (*VERY RARE*)..... Water Fern

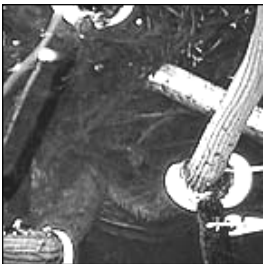
Other common names: *Floating Water Fern*, *Floating Antler Fern*

FROND:	WATER: sterile blade is usually simple to pinnate or palmate but sometimes pinnatifid; lobed with 3–7 broad lobes (which give it the common name “water horn”), fertile fronds to 2’ tall, sterile shorter; upright growth habit’ stipe thick (inflated) and spongy-looking, ridged
RHIZOME	short-creeping
SPORES	on edges of more slender fronds with edge curved inward to protect sori
VEINS	netted
GROWTH	free floating but sometimes rooted in quiet open water in cypress ponds
SIMILAR	<i>Ceratopteris thalictroides</i> (Water Horn Fern) stipe not inflated; fertile blades divided more; sterile blades pinnate to tripinnate rather than simple and deeply lobed



Sterile
blade
above.

Stipe
(stem) of
sterile
blade right.



Ceratopteris thalictroides (*EXOTIC*) Water Horn Fern

Other common names: *Water Sprite*

FROND:	WATER: an aquatic fern but with a rooted stem; two different fronds—fertile blade is tripinnate to quadripinnate, fine and lacy looking, pinnules linear; sterile blades ovate in outline, pinnate to tripinnate, margins deeply lobed; fronds to 4’ or less tall; stipe ridged but not inflated
RHIZOME	short-creeping, rooted in mud
SPORES	in 1-3 rows on lower surface of fertile fronds; often enclosed by leaf margins
VEINS	inconspicuous on fertile fronds, netted on sterile fronds
GROWTH	rooted in mud in slow-moving water
SIMILAR	<i>Ceratopteris pteridoides</i> (Water Fern) stipe really inflated toward base to 4” or so; sterile blade has simple to deeply lobed blade

Fern trivia...

Sex & the Single Fern

The life cycle of most ferns is a little strange in the plant world (almost like an herbiferous reincarnation), but anything that has worked for millions of years must be fairly effective.

Spores come from fronds of ferns, but the fronds do not come directly from the spores. Spores from the parent fall to the ground and with an enormous amount of luck (millions perish for every success), they find suitable moisture and light.

The tiny single-celled organism starts to grow by cell division. Soon orderly arrangements of cells form little green heart-shaped plants (Prothallia). These plants are only 1/2 inch or less across and lie flat on the ground, so most people never notice them. This is an independent plant with its own simple “root” system (rhizoids) to provide it with nutrients and water.

The Prothallium then grows male organs and female organs on its underside. The male organ (Antheridium) produces spermatoids which swim via a droplet of water to the egg produced by the female organ (Archegonium). That’s why many ferns are found in or around water and humidity – they need that drop of water.

The fertilized egg then begins to grow the Sporophyte, the plant that we know as a fern, and the Prothallium withers up and dies.

...and on the next day, Fern created firmament

An important factor in the continued ecological competitiveness of ferns is that many of them succeed by growing in marginal habitats where other plants cannot survive. Ferns have formed strategies for holding and forming soils for their own benefit, and in so doing they create little “islands” of land, improving the environment as a whole by allowing other soil-dependent plants to have a place to get a start.

Royal Fern forms hummocks in swamp areas that catch and hold organic material to form these small “islands” that help to form land from water.

The Chain Fern grows in wet, boggy areas where its rhizomes, fronds, and roots perform the same land-creating function there.

Royal heritage?

The name of the *Osmunda* family (Royal Fern and Cinnamon Fern) may have regal beginnings. According to some, the name *Osmunda* is said to be derived from the Norse god Thor (*Osmunda*). Others have traced its derivation from *os* (a bone) and *mundare* (to cleanse), in reference to the medicinal uses of the fern (see next column).

The fern is dedicated to Saint Christopher.

What the doctor ordered

RESURRECTION FERN

Native Americans heated the stem and leaves of Resurrection Fern, using the ointment to treat ulcers and sores. As a leaf tea, it was used in treating dizziness, headaches, and bleeding gums.

BRACKEN FERN

The Native Americans used Bracken Fern root tea to alleviate stomach cramps and diarrhea. Dried leaves were smoked to relieve headaches. The poulticed root was used on burns and sores. The wash was used to promote hair growth and as an astringent and a tonic.

ROYAL FERN

Modern herbal medicine suggests that *Osmunda* (both Royal Fern and Cinnamon Fern, although Cinnamon Fern is less potent) can be boiled with milk to create a mucilage that is useful in treating diarrhea.

Lore of early Britons suggests the root of the Royal Fern was of good effect in the cure of jaundice, when taken in its early stages (early stages of jaundice, not early stages of the fern). The roots and young ferns were made into an ointment for application to wounds, bruises and dislocations. A conserve of the root was used for rickets. It was also recommended for lumbago.

Why is a Boston Fern a Boston Fern when it can't survive in Boston?

N. exaltata is a tropical plant that barely manages to survive winters in North Florida. Forget about farther north– it starts to go with the first fall frost. Dead by winter!

So why is it a “Boston” fern when it’s a really a native of South Florida and

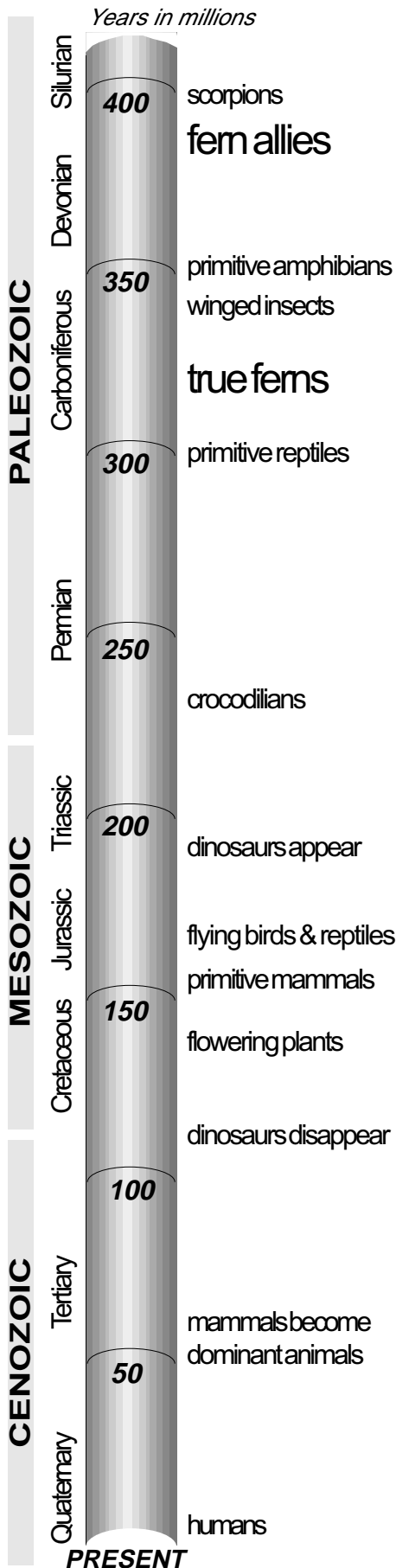
the West Indies?

According to *Taylor's Encyclopedia of Gardening*, a large shipment of sword ferns was delivered from Philadelphia to Boston in 1894 and one batch had more gracefully drooping, somewhat broader fronds than the others, and it also

grew faster. Pretty, fast growing, relatively easy to care for – a good house plant.

So the locals up there gave it the name *N. exaltata bostoniensis* and that name has been stuck to the sword fern family ever since.

Fern history...



Ferns, allies second evolutionary step from sea

Ferns and fern allies have been around for over 300 million years. They represent the second major step in the evolutionary development of land plants from marine plants: although they reproduced with spores like mosses (the first step), they added a vascular system (organs for transporting fluids within the plant).

This extra step in evolution is evidenced today in the time spent in each the two stages. Mosses are gametophytes; their sporophyte stage is so short that it's usually not noticed. Ferns, on the other hand, are sporophytes and it is the gametophyte stage that is short and often overlooked. The gametophyte stage of ferns are the small plants called prothallia (see "Sex & the Single Fern" on the opposite page).

Ferns were at their height during the Carboniferous Period (the Age of Ferns) and were the dominant vegetation at that time. During this era some fern-like groups actually evolved seeds (the seed ferns) making up perhaps half of the fern-like foliage in Carboniferous forests and much later giving rise to the flowering plants.

The majority of the ferns alive during the Carboniferous period became extinct, but some later evolved into our modern ferns.

Ferns and their allies remained the dominant form of vascular plant until the Mesozoic Era (the Age of the Dinosaurs) when seed bearing plants came into prominence.

Fossil evidence of ferns dates to the Devonian Era (345-395 million years ago) when they evolved from

the first vascular plants that had evolved in the Silurian Era (395-435 million years ago).

To make the transition from water to land in the Silurian, plants developed a way to obtain the water and nutrients that they needed for growth. They also needed to develop an epidermis that could retard the loss of water to the air and to develop a stomata in the epidermis to "breathe" with.

By the Devonian period, several different groups of plants had developed all of the necessary characteristics. Five classes of fern allies had arisen by this time, and from these early plants, the existing ferns and fern allies arose. The existing fern allies can be divided into four classes:

PSILOTOPSIDA have sporangia borne singly to the tips of main stems. The only living member derived from this group is the whisk fern, which is probably the most primitive vascular plant still in existence. It may be directly related to the first vascular plants to venture onto land.

LYCOPODIOPSIDA have a single sporangium borne in the axil of a scale-like or leaf-like sporophyll. This class is represented by the spikemosses, clubmosses, and quillworts.

EQUISETOPSIDA is represented today by only the horsetails, and only one species lives in Florida.

POLYPODIOPSIDA (Pteropsida) are the true ferns and are by far the most numerous of all of the fern-allies. There are over 12,000 species of ferns in the world today.

Illustrated Glossary

FERN PARTS

- FROND leaf of the fern; the two parts are
 BLADE top with green leaves
 STIPE bottom with no leaves
 (also called petiole)
- RACHIS frond stalk; it's also called the
midvein, midrib, or main axis
- PINNA the leaves on the blade;
 plural: *pinnae*
- PINNULES the segments on the pinna
- RHIZOME the stem of the fern; it's usually
 on or just beneath the surface of
 whatever the fern is growing on
- ROOT very slender except for Leather
 Fern are massive; grow along length
 of stem (rhizome)
- FIDDLEHEAD a new frond still curled up at the top
- SPORE one-celled reproductive unit of non-
 seed plants; mature sori are usually
 reddish-brown and are major keys
 to identifying most ferns;

associated terms

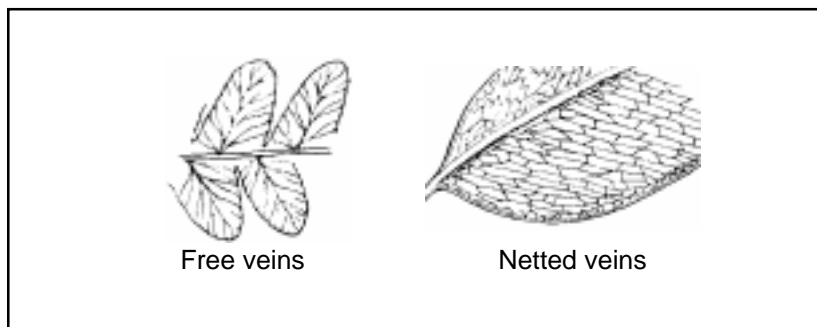
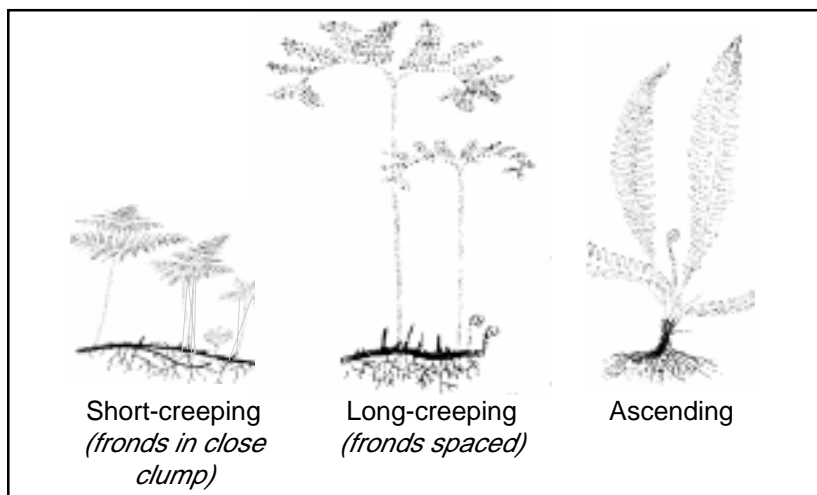
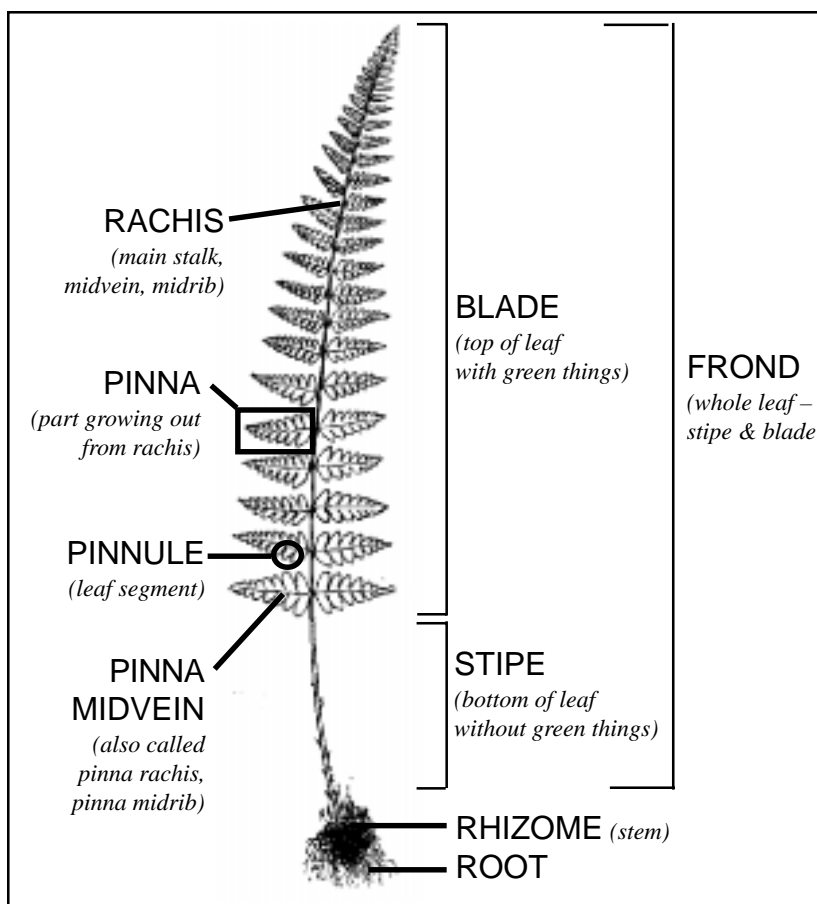
- SPORANGIUM a spore case
 SPORANGIA plural of *sporangium*
 SORUS a cluster of sporangia
 SORI plural of *sorus*

RHIZOMES

- SHORT-CREEPING the most common, resulting
 in a clump of fronds rising
 near each other; fronds look
 like they're in a vase
- LONG CREEPING fronds are spaced apart,
 forming a diffuse clump
- ASCENDING the rhizome rises at the tip or
 rarely forms a short trunk;
 also referred to as *erect*

VEINS

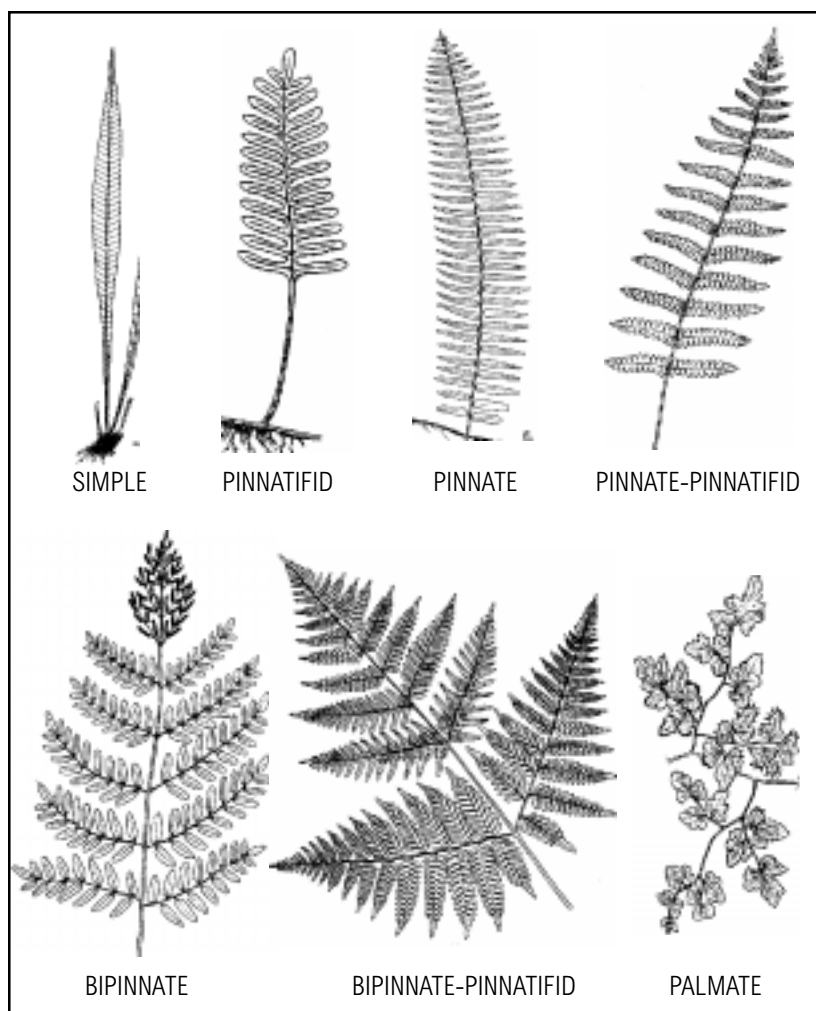
- FREE VEINS veins run from the midvein to the
 edge without forming any kind of
 network; sometimes they branch or
 fork (split); most ferns in North
 America have free veins
- NETTED VEINS ... veins link together, like netting or a
 network (*Strap Fern*)



Illustrated Glossary

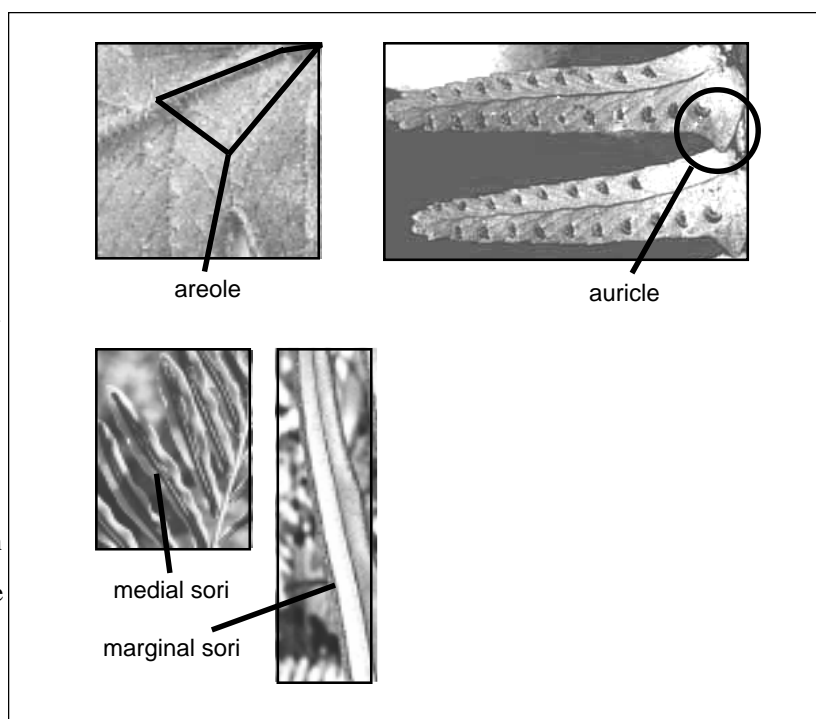
FERN LEAVES

- SIMPLE** undivided (*Strap Fern*)
- PINNATIFID** cut once but not all the way to the rachis (*Resurrection Fern*)
- PINNATE** blades divided into leaflets with each leaflet narrowly attached to the rachis (*Swamp Fern*)
- PINNATE-PINNATIFID**...separate leaflets on the rachis, and each leaflet has cuts (*Thelypteris*)
- BIPINNATE** each pinna has a rachis with its own separate little leaflets (*Royal Fern*)
- BIPINNATE-PINNATIFID**...twice-cut leaves with each pinna having its own leaflets, each of which is also cut (*Bracken Fern*)
- PALMATE** hand-shaped (*Climbing Fern*)
- TRIPINNATE** each pinna has a rachis with its own separate little leaflets; each of those leaflets is cut and each of the pinnules on those little leaflets is also cut (*Florida Tree Fern*)



OTHER FERN TERMS

- AREOLE** area enclosed by veins
- ARTICULATE** jointed
- AURICLE** an ear-shaped part, as the lobe at the base of a pinna in the sword ferns
- DIMORPHIC** fertile and sterile fronds have a distinctly different appearance
- FERTILE FROND** frond w/ spores
- STERILE FROND** frond w/o spores
- HAIR** form of stem or leaf covering; linear
- INDUSIUM** a flap covering the sori
- MARGINAL** along the edge or really close to it; usually refers to sori location
- MEDIAL** away from the edge & near the center; usually refers to sori location
- NODE** point on the stem where one or more leaves are attached
- SCALE** form of stem or leaf covering, usually just one cell thick
- SPOROCARP** hard, nut-like structure containing the sporangia



Why use scientific names instead of common names?

Scientific names are long, hard to pronounce, and hard to remember. So why use them? Accuracy. It avoids confusion. Some examples...

There's the native Boston fern, which is also the Wild Boston Fern and which we see all of the time, and there's the exotic Boston fern which is also the Wild Boston Fern and we may be seeing but don't know it. They're not the same plant. Some texts accurately call the Boston fern (the native one) the Sword Fern. And the one we've always called the Sword Fern? It's really the Giant Sword Fern.

Confused yet? What's the difference between the Cabbage Palm Fern, the Golden Serpent Fern, the Rabbit's Foot Fern, the Golden Polypody, and the Serpent Fern? Answer: nothing. They're all common names for the same plant. The

Resurrection Fern is the Gray Polypody, and the Tree Polypody, and the Scaly Polypody. The Shiny Thelypteris is the Swamp Shield Fern and is also the Hottentot Fern. The Ladder-brake Fern is the Chinese Brake Fern. And the Florida Shield Fern is the Southern Shield Fern and is also the Southern Wood Fern; the Wood Fern is also the Widespread Maiden Fern; and the Downy Maiden Fern is also the Downy Shield Fern and the Downy Wood Fern.

The Leather Fern only grows in salt marshes and brackish water and is not found in Corkscrew. The fresh water plant we have is the Giant Leather Fern. Then there are Marsh Ferns, a generic name used for 14 different individual species of ferns, one of which has the common name of the Marsh Fern.

That's why using common names isn't such a great idea.

Some Common Names

<u>Common Name</u>	<u>Real Name</u>
American Bird's Nest Fern	<i>Asplenium serratum</i>
Asian Sword Fern	<i>Nephrolepis multiflora</i>
Bird's Nest Fern	<i>Asplenium serratum</i>
Boston Fern	<i>Nephrolepis exaltata</i> , <i>Nephrolepis cordifolia</i>
Bracken Fern	<i>Pteridium aquilinum</i>
bracken ferns	any of the <i>Pteridium</i> species
brake ferns	any of the <i>Pteris</i> species
Broad Halberd	<i>Tectaria heracleifolia</i>
Cabbage Palm Fern	<i>Polypodium aureum</i>
Carolina Mosquito Fern	<i>Azolla caroliniana</i>
Chain Fern	<i>Woodwardia virginica</i>
Chinese Brake Fern	<i>Pteris vittata</i>
Cinnamon Vern	<i>Osmunda cinnamomea</i>
Climbing Fern	<i>Lygodium microphyllum</i> , <i>Lygodium japonicum</i>
Comb Fern	<i>Polypodium ptilodon</i>
Comb Polypody	<i>Polypodium ptilodon</i>
Cypress Fern	<i>Thelypteris serrata</i>
Downy Maiden Fern	<i>Thelypteris dentata</i>
Downy Marsh Fern	<i>Thelypteris kunthii</i>
Downy Shield Fern	<i>Thelypteris dentata</i>
Fishtail Sword Fern	<i>Nephrolepis biserrata</i> cv. 'Furcans'
Florida Shield Fern	<i>Dryopteris ludoviciana</i>
Giant Brake Fern	<i>Pteris tripartita</i>
Giant Leather Fern	<i>Acrostichum danaeifolium</i>
Giant Sword Fern	<i>Nephrolepis biserrata</i>
Gold Foot Fern	<i>Phlebodium (Polypodium) aureum</i>
Golden Polypody	<i>Phlebodium (Polypodium) aureum</i>
Golden Serpent Fern	<i>Phlebodium (Polypodium) aureum</i>
Grass Fern	<i>Vittaria lineata</i>
Gray Polypody	<i>Pleopeltis (Polypodium) polypodioides</i>
Greater Comb Fern	<i>Pecluma ptilodon</i>
Hand Fern	<i>Ophiglossum palmata</i>
Hottentot Fern	<i>Thelypteris interrupta</i>
Incised Halberd Fern	<i>Tectaria incisa</i>
Japanese Climbing Fern	<i>Lygodium japonicum</i>
Lacy Bracken Fern	<i>Pteridium aquilinum</i> , <i>Pteridium caudatum</i>
Ladder-Brake Fern	<i>Pteris vittata</i>

<u>Common Name</u>	<u>Real Name</u>
Leather Fern	<i>Acrostichum aureum</i> , <i>Acrostichum danaeifolium</i>
Long Strap Fern	<i>Campyloneurum phyllitidis</i>
Mariana Maiden Fern	<i>Thelypteris torresiana</i>
maidenhair ferns	any of the <i>Adiantum</i> species
Marsh Fern	<i>Thelypteris palustris</i>
marsh ferns	any of the <i>Thelypteris</i> species
Mosquito Fern	<i>Azolla caroliniana</i>
Old World Climbing Fern	<i>Lygodium microphyllum</i>
Ovate Maiden Fern	<i>Thelypteris ovata</i>
Pine Fern	<i>Anemia adiantifolia</i>
Rabbit's Foot Fern	<i>Phlebodium (Polypodium) aureum</i>
Resurrection Fern	<i>Pleopeltis (Polypodium) polypodioides</i>
Royal Fern	<i>Osmunda regalis</i>
Serpent Fern	<i>Polypodium aureum</i>
Shiny Thelypteris	<i>Thelypteris interrupta</i>
Shoestring Fern	<i>Vittaria lineata</i>
Southern Shield Fern	<i>Dryopteris ludoviciana</i>
Southern Wood Fern	<i>Dryopteris ludoviciana</i>
Strap Fern	<i>Campyloneurum phyllitidis</i> , <i>Campyloneurum costatum</i>
Swamp Fern	<i>Blechnum serrulatum</i>
Swamp Shield Fern	<i>Thelypteris interrupta</i>
Sword Fern	<i>Nephrolepis biserrata</i>
sword ferns	any of the <i>Nephrolepis</i> species
Toothed Lattice-vein Fern	<i>Thelypteris serrata</i>
Tree Polypody	<i>Polypodium polypodioides</i>
Tuberous Boston Fern	<i>Nephrolepis cordifolia</i>
Virginia Chain Fern	<i>Woodwardia virginica</i>
Wart Fern	<i>Phymatodes (Polypodium) scolopendria</i>
Water Clover	<i>Marsilea vestita</i>
Water Fern	<i>Ceratopteris pteridoides</i>
Water Horn Fern ..	<i>Ceratopteris pteridoides</i> , <i>Ceratopteris thalictroides</i>
Water Spangles	<i>Salvinia minima</i>
Water Sprite	<i>Ceratopteris thalictroides</i>
Whisk Fern	<i>Psilotum nudum</i>
Widespread Maiden Fern	<i>Thelypteris kunthii</i>
Wild Bird's Nest Fern	<i>Asplenium serratum</i>
Wild Boston Fern	<i>Nephrolepis exaltata</i> , <i>Nephrolepis cordifolia</i>
Wood Fern	<i>Thelypteris kunthii</i>
wood ferns	any of the <i>Thelypteris</i> species

Fern Places to Visit

with native ferns growing wild

Broward County

Fern Forest Nature Center ~ 201 S. Lyons Road ~ Pompano Beach FL 33063 ~ 954-970-0150

Collier County

Briggs Nature Center ~ 401 Shell Island Road ~ Naples FL 34113 ~ 239-774-8569

Corkscrew Swamp Sanctuary ~ 375 Sanctuary Road ~ Naples FL 34120 ~ 239-348-9151

Fakahatchee Strand State Preserve ~ P.O. Box 548 ~ Copeland FL 33926 ~ 239-695-4593

Lee County

Six Mile Cypress Slough Preserve ~ 7751 Penzance Crossing ~ Fort Myers FL 33912 ~ 239-432-2004

Calusa Nature Center ~ 3450 Ortiz Avenue ~ Fort Myers FL 33906 ~ 239-275-3435

Palm Beach County

Loxahatchee National Wildlife Refuge ~ 10216 Lee Road ~ Boynton Beach FL 33437 ~ 407-732-3684

Ferns on the Internet

American Fern Society<http://amerfernsoc.org>

good sections on fern basics and growing ferns, good links to other sites

Growing Ferns<http://www.ces.uga.edu/pubcd/B737-w.htm>

good section on fern basics and growing ferns (University of Georgia College of Agriculture & Environmental Sciences publication)

Staghorn Ferns for Florida.....http://edis.ifas.ufl.edu/scripts/htmlgen.exe?DOCUMENT_MGO15

they're native to the South Pacific, but here's everything you need to know about selecting, growing, and keeping staghorn ferns anyway (University of Florida IFAS publication)

South Florida Fern ID Guide<http://www.corkscrew.audubon.org/Wildlife/FernID/FernID.html>

an interactive guide based on this booklet, but with color photos

References for Identification

Lakela, Olga & Long, Robert. *Ferns of Florida*. Banyan Books: Miami FL. 1976

Mickel, John T. *How to Know the Ferns and Fern Allies*. William C. Brown: Dubuque Iowa, 1979.

NOTE: thorough, good reference and identification; deals with all ferns in North American; black-and-white

Nelson, Gil. *The Ferns of Florida*. Pineapple Press Inc.: Sarasota FL. 2000.

NOTE: excellent color plates; good introduction and background; good individual descriptions and annotations

Read, Bob. "Ferns and Fern Allies of Corkscrew Swamp Sanctuary." November, 1997.

NOTE: identification key handout on letter-size paper

Scofield, Doug. "Native Plants of South Florida." www.cassiakeyensis.com (*web site no longer exists*)

Small, John K. *Ferns of Tropical Florida*. The Science Press: New York, 1931. Reissued Micanopy Publishing.

NOTE: all b/w line drawings (drawings used in almost all other fern reference and identification books), no photos or color

Credits

Line drawings of fronds

Small, John K.. *Ferns of Tropical Florida*. The Science Press: New York, 1931.

Photographs

Brewer, Dick: all except

Genelle, Pierre (USF Herbarium): *D. ludoviciana*, *T. resinifera*, *T. ovata*

Nelson, Gil: *N. multiflora*, *C. pteridoides*

Scofield, Doug: *A. adiantifolia*, *O. palmata*, *A. caroliniana*

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Note: Using common names for ferns is very subjective at best, so not all are listed here. If you're accustomed to using a common name that isn't in this index, please see page 30 for a synonym or for the scientific name.