

KEY TO GENERA OF PTERIDOPHYTES IN ONTARIO

1. Leaves (called microphylls) needle-, scale-, or grasslike, with only one unbranching vein, the midvein **2** ("fern allies")
1. Leaves (called fronds) broader, with branching veins **8** (ferns)
2. Leaves attached side to side to form widely separated, more or less conspicuous rings around the ribbed and jointed stems *Equisetum* (Equisetaceae)
2. Leaves all separate, densely clothing the stems or forming a single tuft **3**
3. Leaves grass-like, forming a single tuft on a short, thick, unbranched, upright stem
. *Isoetes* (Isoetaceae)
3. Leaves scale- or needlelike, clothing elongate, branched, horizontal and/or upright stems .
4
4. Cones 4-sided or cylindrical, emerging directly from the tips of the branches; spores of 2 sizes (heterosporous) *Selaginella* (Selaginellaceae)
4. Cones cylindrical and more or less stalked or sporangia borne in axils of ordinary foliage leaves; spores of 1 size (homosporous) **5** (Lycopodiaceae; *Lycopodium* s.l.)
5. Sporangia borne in axils of vegetative leaves; no cone formed *Huperzia*
5. Sporangia borne in axils of specialized leaves which form a cone **6**
6. Erect stems unbranched, tipped with a single cone; sterile stems not ascending, often with obvious roots emerging along their length *Lycopodiella*
6. Erect stems branched, bearing one or more cones, or often sterile **7**
7. Branchlets usually flattened; cone stalks usually forking
Diphasiastrum
7. Branchlets usually round; cone stalks unbranched or unevenly branched . . *Lycopodium*
s.s.
8. Fronds sessile (unstaked) densely packed on the hidden stems, tiny, just 3 mm long
. *Azolla* (Azollaceae)
8. Fronds with a stipe (stalk), appearing single or separated, much larger **9**
9. Fronds with 4 wedge-shaped pinnae arranged like a 4-leaf clover. . *Marsilea*
(Marsileaceae)
9. Fronds simple or variously compound with more than 4 pinnae **10**
10. Each frond forking near the blade base into a photosynthetic sterile portion and an erect fertile portion **11** (Ophioglossaceae)
10. Fronds various, sometimes dimorphic or with distinct fertile pinnae, but never forking directly into sterile and fertile portions **12**
11. Sterile portion simple, fertile portion spike-like (unbranched) *Ophioglossum*
11. Sterile portion compound, fertile portion branched *Botrychium*
12. Fertile and sterile fronds or pinnae strongly dimorphic **13**
12. Fertile and sterile fronds or pinnae similar **17**

13. Fertile fronds with both fertile and sterile pinnae *Osmunda* (Osmundaceae)
13. Fertile fronds without any sterile pinnae, the fronds thus dimorphic **14**
14. Fertile fronds, although differing strongly from the sterile fronds in shape of pinnules, still appearing leaflike, remaining green and photosynthetic *Cryptogramma*
(Pteridaceae)
14. Fertile fronds soon turning brown, any leaf tissue, if present, shriveled around the sori . .

15. Fertile fronds with pinnae longest towards the tips, thus oblanceolate in outline
 *Matteucia* (Dryopteridaceae)
15. Fertile fronds with pinnae longest towards the base or middle, thus lanceolate in outline.
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16. Fertile fronds flimsy in texture, short-lived, 50 cm or more long .*Osmunda*
 (Osmundaceae)
16. Fertile fronds tough and woody, lasting over winter, usually less than 50 cm long
 *Onoclea* (Dryopteridaceae)
17. Blades simple, entire **18** (Aspleniaceae, in part)
17. Blades variously pinnatifid or pinnate **19**
18. Blades 10-20 cm long, narrowly triangular, widest at the base, tapering to a long, narrow
 point and sometimes rooting there *Camptosorus*
18. Blades 20-30 cm long, tongue-shaped, widest in the middle, the tip rounded or with a
 short
 point, not rooting *Phyllitis*
19. Sori clearly elongate **20**
19. Sori more or less round **25**
20. Sori along the veins **21**
20. Sori at the margin **23**
21. Sori almost all arranged in parallel chains on both sides of the veins
 *Woodwardia* (Blechnaceae)
21. Sori mostly not in pairs, usually single along any one vein **22**
22. Blades mostly less than 30 cm long (rarely to 50 cm) *Asplenium*
 (Aspleniaceae)
22. Blades 30—80 cm long *Diplazium* (Dryopteridaceae)
23. Overall blade outline more or less flabellate (fan-shaped), the sori discontinuous under the
 leading edge of the pinnules only *Adiantum* (Pteridaceae)
23. Overall blade outline more or less triangular, the sori continuous along both sides of the
 pinnules **24**
24. Fronds 8-50 cm tall, obviously longer than broad, pinnate to bipinnate, the stalk almost
 black and wiry *Pellaea* (Pteridaceae)
24. Fronds more than 60 cm tall about as broad as long, bipinnate pinnatifid, the stalk green
 or
 brown and thick *Pteridium* (Dennstaedtiaceae)
25. Sori definitely without an indusium **26**
25. Sori with an indusium (even if you can only find one!) **28**
26. Blades once pinnate or pinnatifid, more than 1½ times as long as wide, the largest pinnae
 near the middle *Polypodium* (Polypodiaceae)

26. Blade pinnate-pinnatifid to tripinnate, less than 1½ times as long as wide, the largest pinnae near the base **27**
27. Blade pinnate-pinnatifid or bipinnatifid, with tiny, sharp-pointed hairs *Phegopteris* (Thelypteridaceae)
27. Blade bipinnate to tripinnate, naked or with minute glands *Gymnocarpium* (Dryopteridaceae)
28. Indusium attached in the middle, umbrella-like, rigid *Polystichum* (Dryopteridaceae)
28. Indusium attached in other ways **29**
29. Indusium kidney-shaped, attached at its sinus **30**
29. Indusium not kidney-shaped **31**
30. Blades with numerous tiny, needle-shaped hairs *Thelypteris* (Thelypteridaceae)
30. Blades lacking hairs, although scales and minute glands may be present *Dryopteris* (Dryopteridaceae)
31. Indusium a cup nestling the sori right along the margin of the blade *Dennstaedtia* (Pteridaceae)
31. Indusium otherwise, not right at the margin **32** (Dryopteridaceae, in part)
32. Sori curving over the veins at the tip *Athyrium*
32. Sori round **33**
33. Indusium attached laterally, covering the sorus like a hood *Cystopteris*
33. Indusium attached under the sorus, nearly cup-like *Woodsia*

Adapted in part from J. T. Mickel. 1979. **How to know the ferns and fern allies**
and from Flora of North American Committee, eds. 1993. **Flora of North America, Vol. 1**