

**KEY TO GENERA OF GYMNOSPERMS WITH NATIVE OR CULTIVATED SPECIES IN  
SOUTHERN ONTARIO (not suitable for tender species and genera)**

1. Twigs completely leafless (deciduous gymnosperms in winter condition) . . . . . **2**
1. Twigs with leaves (evergreen gymnosperms or deciduous gymnosperms during the growing season) . . . . . **6**
2. 2-yr old and older twigs with spur shoots (persistent short side shoots less than 2 cm long) . . . . . **3**
2. 2-yr old and older twigs without spur shoots . . . . . **5**
3. Leaf scars with 2 bundle scars, widely spaced along the long shoots, and most bearing axillary spur shoots by the second year; seeds large (2 cm or more long), fleshy, wingless, solitary or paired at the end of a naked stalk . . . . . **Ginkgo** (ginkgo; Ginkgoaceae)
3. Leaf scars with 1 bundle scar, closely spaced, fewer than 1 in 5 bearing axillary spur shoots by the second year; seeds smaller (the body less than 1 cm long), dry, winged, in pairs on seed scales in a cone . . . . . **4**
4. Seed cones remaining intact at maturity, persisting on the twigs . . . . . **Larix** (tamarack, larch; Pinaceae)
4. Seed cones shattering at maturity, only a remnant left on the twigs . . . . . **Pseudolarix** (golden-larch; Pinaceae)
5. Twigs with prominent winter buds, these arranged oppositely or suboppositely; seed cones remaining intact at maturity . . . . . **Metasequoia** (dawn redwood; Cupressaceae)
5. Twigs with inconspicuous winter buds, the leaf scars arranged spirally; seed cones shattering at maturity . . . . . **Taxodium** (baldcypress; Cupressaceae)
6. Leaves fan-shaped (flabellate) . . . . . **Ginkgo** (ginkgo; Ginkgoaceae)
6. Leaves needle-shaped or scale-like . . . . . **7**
7. Seeds borne in fleshy structures which may or may not resemble typical cones . . . . . **8**
7. Seeds borne in obvious cones, these dry at maturity and woody or leathery . . . . . **10**
8. Leaves scale-like or short, sharp needles mostly less than 1 cm long, decussate or tricussate (in criss-cross pairs or trios). . . . . **Juniperus** (juniper; Cupressaceae)
8. Leaves longer, soft needles mostly more than 2 cm long, commonly distichous (extending out to the sides of the twig nearly in a single plane). . . . . **9**
9. Leaves alternate; mature seeds 1 cm long or less, seated openly in a bright red, fleshy, cup-shaped aril (which dries black and shriveled) . . . . . **Taxus** (yew; Taxaceae)
9. Leaves opposite (bijugate, i.e. in spiraling pairs, an arrangement somewhat obscured by their distichous spread); mature seeds 1.5 cm long or more, the hard kernel tightly and completely enclosed in a yellow to purple fleshy coating . . . . . **Cephalotaxaceae** (plum-yew, Taxaceae)
10. Leaves attached in distinct bundles (fascicles) of 2—5 together . . . **Pinus** (pine; Pinaceae) . . . . . **11**
10. Leaves attached singly, though sometimes densely crowded on spur shoots . . . . . **12**
11. Fascicles with 2—3 needles, surrounded at base by a persistent sheath of papery scale leaves

- (cataphylls) . . . . . *Pinus* subg. *Pinus* (hard or yellow pines)
11. Fascicles with (3—) 5 needles, cataphylls of the basal sheath deciduous . . . . .  
. . . . . *Pinus* subg. *Strobus* (soft or white pines)
12. Leaves of 2-yr old and older twigs borne on perennial spur shoots (persistent short side shoots  
less than 2 cm long) . . . . . **13**
12. Leaves of 2-yr old and older twigs not borne on spur shoots (although sometimes clustered in  
pseudo-whorls at intervals along the main shoots) . . . . . **15**
13. Seed cone scales with pointed tips; deciduous; pollen cones clustered . . . . .  
. . . . . *Pseudolarix* (golden-larch; Pinaceae)
13. Seed cone scales with rounded or flattened tips; deciduous or evergreen; pollen cones single .  
. . . . . **14**
14. Seed cones erect, 4 cm or more wide, shattering at maturity; evergreen . . . . .  
. . . . . *Cedrus* (true cedar; Pinaceae)
14. Seed cones with no particular orientation, no more than 3 cm wide, remaining intact at  
maturity; deciduous . . . . . *Larix* (tamarack, larch; Pinaceae)
15. Leaves alternate, predominantly needle-like . . . . . **16**
15. Leaves opposite or in whorls of 3—4, scale-like or needle-like . . . . . **23**
16. Seed cone scales with markedly thickened tips . . . . . **17**
16. Seed cone scales with thin tips . . . . . **20**
17. Photosynthetic leaves 8 cm or more long, in periodic pseudo-whorls separated by stretches  
with only scale leaves . . . . . *Sciadopitys* (umbrella pine; Sciadopityaceae)
17. Photosynthetic leaves less than 3 cm long, fairly uniformly distributed . . . . .
- 18**
18. Seed cones shattering at maturity; shoots annually deciduous; leaves often distichous, linear  
or scale-like . . . . . *Taxodium* (baldcypress; Cupressaceae)
18. Seed cones remaining intact at maturity; shoots persistent for two or more years; leaves  
arranged all around the shoots, curved awl-like . . . . . **19**
19. Foliage bluish green; seed cones at least 3 cm long. . *Sequoiadendron* (bigtree;  
Cupressaceae)
19. Foliage dark green; seed cones less than 2 cm long . . . . . *Cryptomeria* (sugi;  
Cupressaceae)
20. Needles attached to a persistent woody peg (sterigma) . . . . . **21**
20. Needles attached directly to the smooth twig or on a low pad . . . . . **22**
21. Needles predominantly distichous, flat, with prominent white stomatal bands beneath on  
either side of the midvein . . . . . *Tsuga* (hemlock; Pinaceae)
21. Needles radiating out all around the twigs, variably diamond-shaped in cross section, the  
stomatal bands usually not prominently whitened . . . . . *Picea* (spruce; Pinaceae)
22. Seed cones erect, shattering at maturity, the bracts exserted or not, if so, the lateral lobes  
rounded . . . . . *Abies* (fir; Pinaceae)
22. Seed cones pendent, remaining intact at maturity, the bracts exserted, the lateral lobes  
pointed . . . . . *Pseudotsuga* (douglas-fir; Pinaceae)

23. Shoots annually deciduous; leaves linear, distichous . . . . . *Metasequoia* (dawn redwood; Cupressaceae)
23. Shoots persistent for two or more years; leaves scale-like or needle-like, not distichous . . . **24**
24. Seed cones globular, the scales generally with a shield-shaped (peltate) face . . . . . **25**
24. Seed cones oblong, the scales generally somewhat paddle-like . . . . . **28**
25. Branchlets arranged in flattened sprays . . . . . **26**
25. Branchlets arranged 3-dimensionally . . . . . **27**
26. Seed cones with 2—3 pairs of scales . . . . . *Callitropsis* (yellow-cedar; Cupressaceae)
26. Seed cones with 4 or more pairs of scales . . . . . *Chamaecyparis* (sawara; Cupressaceae)
27. Seed cones indehiscent, berry-like, 1—10-seeded . . . . . *Juniperus* (juniper; Cupressaceae)
27. Seed cones dehiscent, leathery, 1-seeded . . . . . *Microbiota* (dwarf-cedar; Cupressaceae)
28. Lateral leaves of flattened branchlets widely expanded, strongly white-marked beneath . . . . . *Thujopsis* (hiba; Cupressaceae)
28. Lateral leaves of flattened branchlets not or only modestly expanded, all green or only modestly white-marked beneath . . . . . **29**
29. Seed cone scales with a strong subterminal hook; seeds wingless; branchlets vertically oriented . . . . . *Platycladus* (arborvitae; Cupressaceae)
29. Seed cone scales with a weak subterminal prickle; seeds 1—2-winged; branchlets horizontally oriented . . . . . **30**
30. Lateral and facial leaves dissimilar, about as long as the branchlets are wide; seed cones less than 2 cm long, with several pairs of fertile scales . . . . . *Thuja* (white-cedar; Cupressaceae)
30. Lateral and facial leaves similar, much longer than the branchlets are wide; seed cones more than 2 cm long, with one pair of fertile scales . . . . . *Calocedrus* (incense-cedar; Cupressaceae)