

Key to species on Dan N.'s Bear Island lists

1. Reproductive organs in cones. Trees with resinous, needle-like leaves. *Pinus virginiana*
1. Reproductive organs in flowers. Various but not exactly as above. 2.
 2. Leaf venation generally parallel; floral parts usually in 3s. "Monocots."
 3. Inflorescence a spathe (cylindrical naked axis covered with minute flowers) surrounded by a single large bract (spadix). *Arisaema triphyllum*
 3. Inflorescence not as above. 4.
 4. Perianth absent or inconspicuous; inflorescence of one or more spikelets; leaves linear or narrowly lanceolate.
 5. Perianth inconspicuous, of green or brown scales; spikes arranged in an umbel. *Luzula echinata*
 5. Perianth absent; spikelets arranged in a panicle or raceme.
 6. Leaves and bracts 3-ranked. *Carex* (Cyperaceae)
 6. Leaves and bracts 2-ranked. Poaceae
 4. Perianth conspicuous; flowers not in spikelets; leaves broad (except in *Muscari*).
 7. Woody vines with prominent prickles. *Smilax* spp.
 7. Herbaceous, unarmed.
 8. Leaves 3, venation reticulate. *Trillium sessile*
 8. Leaves indefinite in number; venation parallel.
 9. Leaves all basal.
 10. Perianth with a prominent corona. *Narcissus* sp.
 10. Corona absent.
 11. Leaves linear. *Muscari botryoides*
 11. Leaves broad. *Erythronium*
 12. Perianth white. *Erythronium albidum*
 12. Perianth yellow. *Erythronium americanum*
 9. Leaves all cauline.
 12. Flowers white, in terminal panicles. *Smilacina racemosa*
 12. Flowers yellow or greenish, solitary or paired in leaf axils.
 13. Tepals united for most of their length; flowers paired. *Polygonatum biflorum*
 13. Tepals free; flowers solitary. *Uvularia sessilifolia*
 2. Leaf venation generally reticulate; floral parts usually in 4s or 5s. "Dicots."
 14. Evergreen succulents of rock outcrops.
 15. Spiny; stems succulent. *Opuntia humifusa*
 15. Unarmed; leaves succulent. *Sedum ternatum*
 14. Not succulent, rarely evergreen.
 16. Trees, shrubs, or woody vines.
 17. Petals united; calyx and corolla always well-defined. **1. Sympetalous woody dicots.**
 17. Petals separate or absent. **2. Apetalous or polypetalous woody dicots**
 16. Herbaceous plants.
 17. Petals united to form a tube, at least below.
 18. Flowers in heads, enclosed in a tight involucre of bracts. Asteraceae (all key under **4. Sympetalous actinomorphic herbs.**)
 18. Flowers not in heads.
 19. Corolla strongly zygomorphic, usually bilabiate. **3. Sympetalous zygomorphic herbs.**
 19. Corolla radially symmetrical. **4. Sympetalous actinomorphic herbs.**
 17. Petals free to base.
 20. Corolla bilaterally symmetrical. **5. Zygomorphic polypetalous herbs**
 20. Corolla radially symmetrical. **6. Actinomorphic polypetalous herbs**

MONOCOT FAMILIES CYPERACEAE

1. Perigynium glabrous.
2. Female flowers crowded. *Carex careyana*

2. Female flowers remote. *Carex laxiflora*
1. Perigynium pubescent.
 3. Plant us. less than 20 cm tall, its base strongly fibrous from old disintegrating leaves. *Carex nigromarginata*.
 3. Plant us. 20-45 cm tall, its base scarcely fibrous.
 4. xxx. *Carex albicans*
 4. xxx. *Carex pensylvanica?*

POACEAE (GRAMINEAE)

1. Flowers 1 per spikelet.
2. Leaves linear; panicle dense, spikelike, the spikelets crowded. *Anthoxanthum odoratum*
2. Leaves lanceolate; panicle open, the spikelets well separated. *Dichanthelium ravenelii*
1. Flowers 2-several per spikelet.
 3. Spikelets rounded in cross section. *Melica mutica*
 3. Spikelets keeled. *Poa*
 4. Plants spreading by elongate stolons. *Poa cuspidata*
 4. Plants without spreading stolons.
 5. Ligule 4-6 mm long; coarse perennials with large inflorescences, lower inflorescence branches usually ascending. *Poa trivialis*
 5. Ligule ca 1 mm long.
 6. Soft annuals, panicles 1-8 cm long, spikelets tightly clustered, lower inflorescence branches usually ascending. *Poa annua*
 6. Coarse tufted perennials, panicles 10-20 cm long, spikelets not clustered, lower inflorescence branches usually reflexed. *Poa sylvestris*

DICOTS

Woody

1. Sympetalous woody dicots

1. Leaves opposite or whorled.
 2. Inflorescences terminal.
 3. Inflorescence surrounded by petaloid bracts; leaves entire, secondary veins turning aside before reaching margins. *Cornus florida*
 3. Inflorescence without prominent bracts; leaves toothed, secondary veins extending ± straight to margins. *Viburnum*
 4. Leaves 3-lobed. *V. acerifolium*
 4. Leaves unlobed.
 5. Leaves finely toothed, secondary veins not especially prominent. *V. prunifolium*
 5. Leaves coarsely toothed, secondary veins deeply impressed. *V. rafinesqueanum*
 2. Inflorescences axillary.
 6. Leaves compound. *Fraxinus*
 7. Twigs glabrous. *F. americana*
 7. Twigs hairy. *F. pensylvanica*
 6. Leaves simple.
 8. Flowers radially symmetrical; corolla-lobes threadlike. *Chionanthus virginicus*
 8. Flowers bilaterally symmetrical; corolla-lobes much broader. *Lonicera*
 9. Woody vines. *L. japonica*
 9. Shrubs.
 10. Leaves strongly acuminate. *L. maackii*
 10. Leaves broadly acute, obtuse, or mucronate. *L. xylosteum*

1. Leaves alternate.

11. Trees.
 12. Corollas small, green, radially symmetrical. *Nyssa sylvatica*
 12. Corollas large, lavender, bilaterally symmetrical. *Paulownia tomentosa*
11. Shrubs.
 13. Plants trailing; leaf bases cordate. *Epigaea repens*
 13. Plants erect or ascending; leaf bases not cordate.
 14. Ovary superior; corolla not urceolate, pure white or pink.
 15. Corolla tubular proximally, deeply lobed; stamens 5, projecting forward from the corolla. *Rhododendron periclymenoides*

15. Corolla bowl-shaped, scarcely lobed; stamens 10, inserted in pockets in the corolla. *Kalmia latifolia*
14. Ovary inferior; corolla urceolate, greenish.
 16. Underside of leaf glandular-dotted. *Gaylussacia baccata*
 16. Underside of leaf not glandular-dotted.
 17. Anthers exserted from corolla. *Vaccinium stamineum*
 17. Anthers immersed in corolla. *Vaccinium pallidum*

2. Apetalous or polypetalous woody dicots

1. Leaves opposite or whorled.
 2. Low shrubs with simple unlobed leaves.
 3. Flowers solitary in leaf axils; petals green, stamens 4. *Euonymus alata*
 3. Flowers in cymes (terminal and upper leaf axils); petals yellow, stamens many. *Hypericum prolificum*
 2. Small to large trees, leaves lobed or compound.
 4. Inflorescences terminal.
 5. Leaves simple and lobed; petals green. *Acer saccharum*
 5. Leaves 3-foliolate; petals white. *Staphylea trifolia*
 4. Inflorescences axillary.
 6. Flowers long-pedicellate, in long dangling inflorescences; leaves compound. *Acer negundo*
 6. Flowers sessile or subsessile, in dense clusters; leaves simple and lobed.
 7. Petals present; ovaries glabrous; branchlets spreading or ascending; leaves lobed less than halfway to base. *Acer rubrum*
 7. Petals none; ovaries villous; branchlets pendulous; leaves lobed more than halfway to base. *Acer saccharinum*
 1. Leaves alternate.
 8. Inflorescences unisexual, at least male flowers sessile in pendulous catkins or glomerules (erect catkins in *Salix*).
 9. Male and female inflorescences of one or more dense spherical glomerules. *Platanus occidentalis*
 9. Male flowers in catkins; female flowers various but not as above.
 10. Male and female flowers both numerous in elongate catkins.
 11. Secondary veins of leaves curving and not reaching margins.
 12. Leaves triangular. *Populus deltoides*
 12. Leaves linear. *Salix nigra*
 11. Secondary veins of leaves running straight to margins.
 13. Intact woody cone-like infructescences persisting from previous year. Shorelines. *Alnus serrulata*
 13. Infructescences not woody, disintegrating on tree and not persisting. Understorey of woods.
 14. Bark smooth. *Carpinus caroliniana*
 14. Bark scaly. *Ostrya virginiana*
 10. Male flowers in catkins; female inflorescences few-flowered.
 15. Leaves compound. *Carya*
 15. Leaves simple, lobed or not. *Quercus*
 16. Leaves linear, entire, inrolled in bud. *Quercus phellos*
 16. Leaves broader, lobed or crenate, imbricate in bud.
 17. Leaves lobed, the lobes bristle-tipped.
 18. Leaf blade lobed for 0.7-0.95 of its width, with 2-3(-4) lobes on each side. Tufts of hairs in vein axils large and conspicuous, each hair with 9-19 rays. *Quercus palustris*
 18. Leaf blade lobed for 0.25-0.88 of its width, with 3-5 lobes on each side. Tufts of hairs in vein axils small and inconspicuous or absent, each hair with 5-9 rays. *Quercus rubra*
 17. Leaves lobed or crenate, lobes or crenae rounded, without bristles.
 19. Leaves crenate, with 8-12 lateral veins; bark grey, splitting into persistent ridges. *Quercus montana*
 19. Leaves lobed, with (3-)4-6 lateral veins; bark grey or almost white, exfoliating as thin plates or scales.

20. Young growth pale green, covered with white deciduous tomentum; bark almost white, exfoliating as thin plates. *Quercus alba*
20. Young growth yellow, hairs yellow or brownish, spreading, persistent; bark grey, ridged and scaly. *Quercus stellata*
8. Inflorescences bisexual, not catkins or pendent glomerules (if inflorescence is pendent, then flowers pedicellate).
20. Leaves compound.
21. Low arching or prostrate brambles with prickly leaves and stems. *Rubus* cf. *flagellaris*?
21. Upright shrubs or trees or climbing vines, unarmed (with stipular spines only in *Robinia*).
22. Leaves 3-foliate.
23. Small trees; leaflets undivided; stigmas 2. *Ptelea trifoliata*
23. Woody vines climbing by adventitious roots; leaflets deeply cleft; stigmas 3. *Toxicodendron radicans*
22. Leaves pinnately compound with many leaflets.
24. Trees with pendent inflorescences.
25. Foul-smelling trees with radially symmetrical greenish flowers. *Ailanthus altissima*
25. Odorless trees with white flowers that are strongly bilaterally symmetrical. *Robinia pseudoacacia*
24. Shrubs with erect inflorescences.
26. Twigs and petioles glabrous or finely puberulent. *Rhus glabra*
26. Twigs and petioles densely shaggy. *Rhus typhina*
20. Leaves simple.
27. Leaves 3-veined from base.
28. Ovaries numerous; leaves truncate. *Liriodendron tulipifera*
28. Ovary solitary; leaves rounded or acuminate.
29. Small trees; leaves rounded.
30. Flowers bilaterally symmetrical, petals pink. *Cercis canadensis*
30. Flowers radially symmetrical; petals green. *Sassafras albidum*
29. Large trees; leaves acuminate.
30. Stamens numerous; bark not corky; pedicels fused to bracts. *Tilia americana*
30. Stamens 5; bark covered with corky warts and ridges; pedicels without bracts. *Celtis occidentalis*
27. Venation pinnate.
31. Evergreen; leaf margins spinose. *Ilex opaca*
31. Deciduous; leaves unarmed.
32. Petals green, brown, or purple-brown, ovaries not enclosed in a hypanthium.
33. Flowers in sessile umbels in leaf axils; leaves toothed; canopy trees.
34. Flowers on long drooping pedicels; fruit ciliate. *Ulmus americana*
34. Flowers nearly sessile, tightly clustered; fruit glabrous. *Ulmus rubra*
33. Flowers solitary or in clusters of 2-4; leaves entire; shrubs or small trees of understorey.
35. Flowers large, solitary, purple-brown. *Asimina triloba*
35. Flowers small, paired, greenish. *Lindera benzoin*
32. Petals white, pink, or yellow, ovaries enclosed in a hypanthium.
36. Flower yellow; hypanthium longer than sepals, petals none. *Dirca palustris*
36. Flower white or pink; petals present, much longer than hypanthium.
37. Ovary and style 1 per flower.
38. Inflorescence an elongate raceme. *Prunus serotina*
38. Inflorescence an umbel.
39. Flowers subtended only by bud-scales (leaves, if any, from different buds); sepals pubescent. *Prunus americana*
39. Flowers subtended by reflexed scale-like green bracts; sepals glabrous. **Prunus avium*
37. Ovaries and styles 2-5 per flower.
40. Petals obovate; flowers in short, umbel-like racemes; leaf primordia inrolled in bud.
41. Anthers yellow; leaves densely tomentose. **Malus sylvestris*

- 41. Anthers red; leaves glabrous or weakly villous.
- 42. Styles 2-3; young plants very thorny. **Pyrus calleryana*
- 42. Styles 5; young plants seldom thorny. **Pyrus communis*
- 40. Petals narrow, oblanceolate; flowers in longer racemes; leaf primordia folded along midrib in bud.
- 43. Inflorescence ascending. *Amelanchier canadensis*
- 43. Inflorescence lax, horizontal or pendent.
- 44. Shrubs stoloniferous, colonial, to 2 m tall. *Amelanchier nantucketensis* [not confirmed]
- 44. Shrubs not colonial, usually taller.
- 45. Undersides of leaves tomentose. *Amelanchier arborea*
- 45. Undersides of leaves glabrous (sometimes sparingly pubescent when young). *Amelanchier laevis*

3. Sympetalous zygomorphic herbs.

- 1. Plant white, yellow, or brown, parasitic.
- 2. Yellow or yellow-brown; stems thick, scaly; stamens exserted. *Conopholis americana*
- 2. White; stems slender, naked; stamens immersed. *Orobanche uniflora*
- 1. Plant green, photosynthetic.
- 3. Corollas rotate; stamens 2, exserted.
- 4. Leaves wider than long, 3-5-lobed. **Veronica hederifolia*
- 4. Leaves longer than wide, unlobed. *Veronica persica*
- 3. Corollas tubular; stamens 4.
- 5. Stems trailing and mat-forming; leaf blade reniform, all leaves green. **Glechoma hederacea*
- 5. Stems erect; leaf blade triangular, upper leaves purple. **Lamium purpureum*

4. Sympetalous actinomorphic herbs.

- 1. Inflorescence a head. Asteraceae
- 3. All corollas ligulate (the tube split down one side to form a flat strap).
- 4. Involucre 1.5-2.5 cm long, outermost phyllaries reflexed; heads solitary on an unbranched scape. *Taraxacum officinale*
- 4. Involucre 3-10 mm long, all phyllaries appressed; stem often branched, heads often more than one per stem.
- 5. Perennial, 1-2 feet high; pappus of bristles only; all leaves entire, veins and underside purple. *Hieracium venosum*
- 5. Annual, less than 1 foot high; pappus of alternating scales and bristles; outer leaves entire, inner lobed, all green. *Krigia virginica*
- 3. Corollas tubular, or corollas of central flowers (disk flowers) tubular surrounded by a ring of peripheral flowers (rays) having flat corollas.
- 6. Head discoid; phyllaries straw-coloured. *Antennaria plantaginifolia*
- 6. Head radiate; phyllaries green.
- 7. Leaves opposite. *Arnica acaulis*
- 7. Leaves alternate.
- 8. Rays white or pinkish. *Erigeron philadelphicus*
- 8. Rays yellow.
- 9. Large leaves basal and caudate. *Senecio aureus* [=Packeria]
- 9. Large leaves basal, white-tomentose beneath; heads on scaly unbranched pedicels. *Tussilago farfara*
- 1. Inflorescence not a head.
- 10. Leaves opposite or apparently whorled.
- 11. Corolla strongly salverform. *Phlox*
- 12. Leaves subulate. *Phlox subulata*
- 12. Leaves laminate. *Phlox divaricata*
- 11. Corolla not salverform.
- 13. Leaves whorled (or apparently so).
- 14. Inflorescence axillary; stems reclining, covered with retrorse teeth. **Galium aparine*
- 14. Inflorescence terminal; stems erect, without teeth. *Chimaphila umbellata*
- 13. Stipules small and different from the opposite leaves.
- 15. Evergreen. *Mitchella repens*

15. Green only in the warmer months. *Houstonia caerulea*
10. Leaves alternate.
 16. Flowers solitary, opposite the leaves. *Ellisia nyctelea*
 16. Flowers in helicoid inflorescences.
 17. Leaves entire. *Mertensia virginica*
 17. Leaves parted or compound.
 18. Petals fimbriate. *Phacelia purshii*
 18. Petals entire.
 19. Filaments glabrous, shorter than corolla tube. *Phacelia ranunculacea*
 19. Filaments pubescent, longer than corolla tube.
 20. Inflorescence with a well-developed axis; stem leaves small, not overtopping inflorescences, pinnately lobed. *Phacelia dubia*
 20. Inflorescence branching; stem leaves large, overtopping inflorescences, ± palmately lobed. *Hydrophyllum canadense*

5. Zygomorphic polypetalous herbs

xx add *Vicia caroliniana*

1. Petals overlapping.
 2. Leaves cauline; flowers yellow, spurred on one side, with one plane of symmetry. *Corydalis flavula*
 2. Leaves basal; flowers white, spurred on both sides, with two planes of symmetry. *Dicentra*
 3. Bases of corolla prolonged strongly backward into long spurs. *Dicentra cucullaria*
 3. Bases of corolla rounded, barely prolonged into shallow sacs. *Dicentra canadensis*
1. Petals spreading.
 4. Corolla green, petal blades ca the same size. *Hybanthus concolor*
 4. Corolla white, yellow, or blue, petal blades conspicuously different in size. *Viola*
 5. Plant acaulescent, all leaves basal; corolla usually deep blue.
 6. Leaves cordate, ca as wide as long, margins finely crenate. *Viola sororia*
 6. Leaves lanceolate, much longer than wide, with large teeth or lobes near base. *Viola sagittata*
 5. Leaves cauline; corolla white, yellow, or pale blue.
 7. Corolla yellow; stipules entire or crenulate. *Viola pubescens*
 7. Corolla white, pale blue or creamy; stipules strongly toothed or lobed
 8. Stipules pinnately lobed in lower half, upper half entire; corolla pale blue or creamy. *Viola bicolor*
 8. Stipules strongly toothed for their whole length; corolla white. *Viola striata*

6. Actinomorphic polypetalous herbs

1. Flowers with several separate ovaries.
 2. Petals strongly spurred, red with yellow mouths. *Aquilegia canadensis*
 2. Petals plane, never red.
 3. Petals white or pink.
 4. Inflorescence a raceme; leaves all basal.
 5. Leaves entire or toothed; stamens 10. *Saxifraga virginiensis*
 5. Leaves palmately lobed; stamens 5. *Heuchera americana*
 4. Flowers solitary or cymose; cauline leaves present (calyx-like in *Anemone americana*).
 6. Leaves compound; stigma sessile. *Thalictrum thalictroides* [*Anemonella*]
 6. Leaves lobed or parted; stigma terminating a short style.
 7. Basal leaves evergreen; involucral leaves sepal-like. *Anemone americana* [*Hepatica*]
 7. Basal leaves seasonal; involucral leaves deeply lobed, well separated from flowers. *Anemone quinquefolia*
 3. Petals yellow.
 8. Flower perigynous, subtended by an epicalyx of small bracts; stem reclining or prostrate; leaves 3-5-foliolate.
 9. Leaves 3-foliolate; bractlets 3-lobed. **Duchesnea indica*
 9. Leaves 5-foliolate; bractlets unlobed. *Potentilla canadensis*
 8. Flower hypogynous, without an epicalyx; stem erect or nearly so; leaves otherwise. *Ranunculus*
 10. All leaves undivided, merely crenate; sepals 3; stigma sessile. **Ranunculus ficaria*
 10. At least stem leaves deeply parted; sepals 5; stigma stigma terminating a short style.

11. Basal leaves undivided; petals small and inconspicuous. *Ranunculus abortivus*
 11. All leaves deeply parted or compound; petals showy.
 12. Base of stem bulbous. **Ranunculus bulbosus*
 12. Base of stem not bulbous. *Ranunculus hispidus* var. *nitidus*
1. Flowers with a single ovary.
 13. Stem long-creeping and rooting; leaves evergreen. *Asarum canadense*
 13. Stem erect or ascending, or plant acaulescent; leaves seasonal.
 14. Inflorescence a terminal leafless raceme.
 15. Fruit discoid or obcordate, scarcely longer than wide.
 16. Fruit obcordate. **Capsella bursa-pastoris*
 16. Fruit discoid.
 17. Stem leaves with auriculate bases. **Lepidium campestre*
 17. Stem leaves tapering to base. *Lepidium virginicum*
 15. Fruit cylindrical, several times as long as wide.
 18. Petals yellow.
 19. Stem leaves deeply pinnately lobed, bases not clasping. **Barbarea vulgaris*
 19. Stem leaves deeply toothed or weakly pinnately lobed, bases clasping. **Erysimum repandum*
 18. Petals white or greenish.
 20. Hairs branched.
 21. Lower leaves toothed. *Arabis laevigata*
 21. Lower leaves pinnately lobed. *Arabis lyrata*
 20. Hairs never branched.
 22. Leaves entire or toothed.
 23. Leaves with strong garlic odor when crushed. **Alliaria petiolata*
 23. Leaves without garlic odor. *Cardamine bulbosa*
 22. Leaves deeply lobed or parted.
 24. Leaves palmately lobed.
 25. Glabrous; teeth of leaflets short, rounded. *Cardamine angustata*
 25. Hairy; teeth of leaflets long, acute. *Cardamine concatenata*
 24. Leaves pinnately lobed.
 26. Petioles of stem leaves ciliate at base; most leaves basal. **Cardamine hirsuta*
 26. Petioles of stem leaves not ciliate at base; most leaves cauline. *Cardamine arenicola*
14. Inflorescence otherwise.
 27. Corolla yellow; leaves 3-foliolate.
 28. Flowers small; inflorescences terminal compound umbels. *Zizia aurea*
 28. Flowers showy; inflorescences axillary simple umbels.
 29. Stems erect or ascending, rooting only at base; stipules small, green. *Oxalis stricta*?
 29. Stems creeping and rooting at nodes; stipules large, purple or brown. *Oxalis corniculata*
 27. Corolla white or purple; leaves various.
 29. Leaves basal, flowers scapose (sometimes 1-2 stem leaves in *Podophyllum*).
 30. Leaves simple and lobed.
 31. Leaves peltate. *Podophyllum peltatum*
 31. Leaves not peltate. *Sanguinaria canadensis*
 30. Leaves compound.
 32. Petals 8, white; leaves 2-foliolate, not sour. *Jeffersonia diphylla*
 32. Petals 5, purple, rarely white; leaves 3-foliolate, very sour. *Oxalis violacea*
 29. Leaves cauline or basal and cauline; flowers not scapose.
 33. Inflorescence a compound umbel.
 34. Plant glabrous; fruit ca as wide as long. *Erigenia bulbosa*
 34. Plant pubescent; fruit much longer than wide.
 35. Hairs spreading; stipules ciliate on margins only. *Osmorhiza claytonii*
 35. Hairs appressed; stipules densely soft-hairy all over. *Osmorhiza longistylis*

33. Inflorescence not an umbel.
36. Sepals 2 or 3.
 37. Sepals 2, petals 5, pink; leaves linear and undivided. *Claytonia virginica*
 37. Sepals 3, petals 3, white; leaves compound. *Floerkea proserpinacoides*
36. Sepals 5.
 38. Leaves alternate.
 39. Leaves deeply parted; corollas purple. *Geranium maculatum*
 39. Leaves undivided; corollas white. *Comandra umbellata*
 38. Leaves opposite.
 40. Sepals fused into a ± united tube; petals white or pink. *Silene caroliniana*
 40. Sepals separate; petals white.
 41. Styles 3.
 42. Leaves petiolate, 1-3 cm long; stem cylindrical. **Stellaria media*
 42. Leaves subsessile, 2-9 cm long; stem 4-angled. *Stellaria pubera*
 41. Styles 5.
 43. Petals longer than sepals. *Cerastium arvense*
 43. Petals and sepals equal in length. **Cerastium vulgatum*