

Key to the Brassicaceae (Cruciferae) of Canada and Alaska

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Abbreviations

AK Alaska
YT Yukon
NT-M Northwest Territories - Mackenzie District
N-K Nunavut - Keewatin District
N-F Nunavut - Franklin District
NF Newfoundland
PE Prince Edward Island
NS Nova Scotia
NB New Brunswick
PQ Québec
ON Ontario
MB Manitoba
SK Saskatchewan
AB Alberta
BC British Columbia

Key to the Genera of Brassicaceae in Canada and Alaska

1. Pods less than 3 times longer than wide, variously shaped (silicles) 2
1. Pods greater than 3 times, often many times, longer than wide; more or less linear or narrowly oblong (silicles) 38
 2. Silicles compressed contrary to the plane of the septum; angustiseptate (*Coronopus*, *Physaria*, *Teesdalia*, *Iberis*, *Myagrum*, *Isatis*, *Cardaria*, *Lepidium*, *Thlaspi*, *Armoracia*, *Capsella*, *Lesquerella*, *Hutchinsia*) 3
 2. Silicles not compressed or flattened parallel to the plane of the septum 15
3. Silicles strongly didymous with deep sinuses between the halves, both proximally and distally 4
3. Silicles not didymous; sinuses, if present, shallow and mostly distal 5
 4. Valve surfaces rough-rugose or with raised veins and projections; valves 1-seeded, indehiscent; trichomes not radiate **21. *Coronopus***
 4. Valve surfaces smooth; valves with 2 or more seeds, dehiscent, trichomes radiate **46. *Physaria***
5. Flowers zygomorphic; petals usually unequal 6
5. Flowers actinomorphic; petals equal 7
 6. Median filaments appendaged at base; seeds 2 per locule; plants scapose **55. *Teesdalia***
 6. Median filaments not appendaged; seeds 1 per locule; plants not scapose **33. *Iberis***
7. Seeds 1 per locule or 1 per silicle 8
7. Seeds more than 1 per locule 11
 8. Silicles obcordate with prominent shoulders, together with pedicels closely appressed to the rachis, rigidly erect **42. *Myagrum***
 8. Silicles neither obcordate nor with prominent shoulders, variously divergent and not appressed 9
9. Silicles samaroid, usually pendent on slender pedicels; seeds 1 per silicle **35. *Isatis***
9. Silicles not samaroid, not pendent on slender pedicels; seeds 1 per locule 10
 10. Silicle valves rounded, indehiscent, plants rhizomatous **17. *Cardaria***
 10. Silicle valves flattened, at least on margins, dehiscent, plants not rhizomatous **36. *Lepidium***
11. Plants entirely glabrous or with simple trichomes only 12
11. Plants with at least some branched trichomes 13
 12. Cauline leaves sessile, auriculate; silicles usually winged; roots not fusiform **57. *Thlaspi***
 12. Cauline leaves petiolate to cuneate at the base; silicles not winged; roots fusiform **6. *Armoracia***
13. Silicles obovate-triangular in outline, widest at apex **15. *Capsella***
13. Silicles orbicular to oblong or elliptical, more or less uniform in width 14
 14. Petals yellow, silicles more or less orbicular or globose **37. *Lesquerella***
 14. Petals white to purplish, silicles longer than wide **32. *Hutchinsia***
- 15.⁽²⁾ Plants glabrous or with simple trichomes only (*Idahoa*, *Subularia*, *Armoracia*, *Rorippa*, *Aphragmus*, *Thysanocarpus*, *Lunaria*, *Draba*, *Cochlearia*, *Rapistrum*, *Crambe*, *Camelina*, *Cardaria*, *Bunias*) 16

- 15.⁽²⁾ Plants with at least some branched trichomes (*Alyssum*, *Lesquerella*, *Lobularia*, *Athysanus*, *Berteroa*, *Draba*, *Neslia*, *Camelina*, *Descurainia*) 30
16. Flowers solitary on slender peduncles (sometimes loosely racemose in old, robust plants) **34. *Idahoa***
16. Flowers in racemes, not single on naked peduncles 17
17. Plants aquatic, growing submersed for at least part of their life cycle 18
17. Plants terrestrial 20
18. Leaves linear, terete or subulate, without expanded blades, grasslike **54. *Subularia***
18. Leaves with expanded or highly divided blades, not grasslike 19
19. Submersed leaves highly divided into linear segments, emergent leaves mostly not lobed; septa perforate **6. *Armoracia***
19. Submersed leaves entire or merely dentate, emergent leaves lobed; septa non perforate **49. *Rorippa***
20. Inflorescences with a subumbellate foliar involucre **3. *Aphragmus***
20. Inflorescences without an involucre, mostly ebracteate and elongated 21
21. Silicles strongly compressed parallel to the plane of the septum 22
21. Silicles globose or slightly compressed laterally, often a little longer than wide, or wider than long 24
22. Silicles 1-seeded, indehiscent, nearly orbicular **58. *Thysanocarpus***
22. Silicles with more than 1 seed, dehiscent, usually longer than wide (except sometimes in *Lunaria*) 23
23. Silicles stipitate or narrowed to a stipelike base, often large and broadly oblong to orbicular; petals about 2 cm long **39. *Lunaria***
23. Silicles sessile, longer than wide; petals much smaller, less than 1 cm wide **25. *Draba***
24. Plants maritime, fleshy; boreal halophytes **19. *Cochlearia***
24. Plants from inland, not fleshy, nor boreal, nor halophytic 25
25. Silicles segmented 25a
25. Silicles non-segmented 26
- 25a. Segments longitudinally striate **48. *Rapistrum***
- 25a. Upper segment smooth **22. *Crambe***
26. Cauline leaves auriculate 27
26. Cauline leaves petiolate, cuneate at base or none 28
27. Silicle valves keeled, glabrous **14. *Camelina***
27. Silicle valves not keeled, densely pubescent with simple trichomes **17. *Cardaria***
28. Silicles rugose, hard, indehiscent; petals yellow **12. *Bunias***
28. Silicles smooth, not hard, dehiscent; petals various coloured (including yellow) 29
29. Basal leaves entire to slightly dentate; plants often scapose; petals white or yellow **25. *Draba***
29. Basal leaves pinnately lobed to deeply dentate; plants with leafy stems; petals yellow

- **49. Rorippa**
- 30.⁽¹⁵⁾ Trichomes centrally attached and with more than 2 nearly equal radiating branches 31
- 30.⁽¹⁵⁾ Trichomes asymmetrically branched, or with 2 appressed branches (malpighiaceae), branches not radiating from a central point of attachment (except malpighiaceae trichomes in *Lobularia*) 32
31. Silicles strongly flattened parallel to the plane of the septum, orbicular or nearly so; septa not nerved **2. Alyssum**
31. Silicles globose to longer than wide or wider than long, inflated or a little compressed; septa with a least a partial central nerve **37. Lesquerella**
32. Trichomes appressed and 2-branched (malpighiaceae) **38. Lobularia**
32. Trichomes irregularly branched 33
33. Silicles flattened parallel to plane of septum 34
33. Silicles not flattened, or only slightly compressed 36
34. Silicles orbicular or nearly so **7. Athysanus**
34. Silicles longer than wide 35
35. Petals white, deeply bifid; seeds winged; pedicels strictly erect and appressed to the rachis; plants more than 3 dm tall; introduced weed **9. Berteroa**
35. Petals white or yellow, entire or shallowly emarginate (petals 2-lobed with white flowers and less than 1 dm tall in *Draba verna*); seeds wingless; pedicels various but not as above; plants less than 2 dm tall; mostly native **25. Draba**
36. Silicles reticulate-pitted, usually wider than long, indehiscent, the walls hardened **44. Neslia**
36. Silicles smooth, longer than wide, or rarely, nearly globose, dehiscent, the walls not hardened 37
37. Cauline leaves auriculate, usually clasping **14. Camelina**
37. Cauline leaves cuneate at base or short-petioled **23. Descurainia**
- 38.⁽¹⁾ Plants glabrous or with simple trichomes only (*Thelypodium, Chorispora, Cakile, Raphanus, Rapistrum, Cardamine, Eruca, Diplotaxis, Sinapis, Conringia, Brassica, Erucastrum, Nasturtium, Barbarea, Schoenocrambe, Sisymbrium, Rorippa, Arabis, Draba, Smelowskia, Parrya, Eutrema, Hesperis, Braya, Alliaria, Arabidopsis*) 39
- 38.⁽¹⁾ Plants with at least some branched trichomes, these ranging from once-forked to highly branched (*Erysimum, Draba, Arabis, Braya, Matthiola, Malcolmia, Smelowskia, Descurainia, Hesperis, Arabis, Arabidopsis, Halimolobos*) 70
39. Stamens with long, equal or subequal filaments strongly exceeding the sepals and claws of the petals; siliques usually gynophorate **56. Thelypodium**
39. Stamens included to slightly exerted, not reaching more than 1 to 2 mm above the sepals or petal claws, mostly tetradynamous; siliques mostly sessile 40
40. Siliques transversely jointed, often breaking into segments, otherwise indehiscent; valves undifferentiated, reduced or obsolete 41
40. Siliques not transversely jointed or breaking transversely into segments, dehiscent by valves 44
41. Plants with conspicuous stipitate glands; seeds embedded in cavities of septum .. **18. Chorispora**
41. Plants without stipitate glands; seeds not embedded in septum 42

42. Styles absent; cotyledons accumbent; plants maritime, fleshy **13. *Cakile***
42. Styles present, cotyledons conduplicate, plants inland, not fleshy 43
43. Silique segments markedly different, lower seedless, upper greater than 2-seeded, more than 10 times longer than the lower **47. *Raphanus***
43. Silique segments nearly equal, both segments usually with 1 or 2 seeds **48. *Rapistrum***
44. Valves of siliques not extending to the siliques edges, opening by coiling from the base upward, sometimes explosively; replum narrowly margined **16. *Cardamine***
44. Valves of siliques extending laterally to silique edges, rigidly opening without coiling; replum not margined 45
45. Siliques with definite beaks, these either 1- or up to 3-seeded, or seedless 46
45. Siliques without definite beaks, styles sometimes beaklike in shape, but clearly demarcated from the apex of the valves 51
46. Seeds biserially arranged in each locule 47
46. Seeds uniserially arranged in each locule 48
47. Beaks strongly flattened, ensiform; stigmas with decurrent lobes; petals with conspicuous dark brown or purple veins **26. *Eruca***
47. Beaks usually terete, style-like; stigmas entire or with non-decurrent lobes; petals not conspicuously veined **24. *Diplotaxis***
48. Valves with 3 to 7 nerves **51. *Sinapis***
48. Valves with one prominent midnerve, lateral veins inconspicuous and often anastomosing 49
49. Leaves entire, cordate-amplexicaule; siliques strongly 4-angled; cotyledons incumbent; seeds striate **20. *Conringia***
49. Leaves (at least the lowermost) pinnately lobed or dentate, upper very rarely auriculate or amplexicaule; siliques terete or flattened, sometimes slightly 4-angled; cotyledons conduplicate; seeds reticulate 50
50. Inflorescences ebracteate; seeds globose; siliques usually terete or flattened, rarely slightly 4-angled **10. *Brassica***
50. Inflorescences (at least the lower part) bracteate; seeds oblong; siliques often slightly 4-angled **27. *Erucastrum***
51. Basal and lower cauline leaves mostly pinnately lobed (rarely bipinnate), upper very rarely subentire 52
51. Basal and lower cauline leaves entire, dentate to shallowly-lobed but not pinnate 56
52. Petals white or purplish **43. *Nasturtium***
52. Petals yellow 53
53. Siliques and stems angled; plants erect, usually fleshy, often of moist places; cotyledons accumbent **8. *Barbarea***
53. Siliques and stems terete; plants erect or decumbent, mostly not fleshy, habitats dry or wet; cotyledons incumbent or accumbent 54
54. Siliques 2 to 10 cm long or, if shorter, closely appressed to the rachis; basal rosettes not formed; seeds uniserial 55
54. Siliques less than 1.5 cm long; pedicels divaricate; basal rosettes often present; seeds biserial or

- sometimes uniseriate **49. *Rorippa***
55. Plants rhizomatous; perennial native **50. *Schoenocrambe***
55. Plants not rhizomatous; annual introduced weeds **52. *Sisymbrium***
56. Plants rhizomatous **50. *Schoenocrambe***
56. Plants not rhizomatous 57
57. Plants caespitose with thick underground caudices or woody at the base; stems mostly less than 2 dm tall 58
57. Plants not caespitose with thick underground caudices nor woody at base; stems often but not always more than 2 dm tall 62
58. Plants woody toward base, caudex elevated, branches free of old leaf bases **5. *Arabis***
58. Plants not woody towards base, caespitose; caudex often underground,, branches usually thickened with old leaf bases 59
59. Seeds wingless and marginless 60
59. Seeds winged or marginal 61
60. Seeds biseriate **25. *Draba***
60. Seeds uniseriate **53. *Smelowskia***
61. Seeds with spongy rimlike margins all around; flowering stems scapose; petals mostly purple, rarely white **45. *Parrya***
61. Seed wings dense and not spongy or rimlike, distal to all around; flowering stems with at least some leaves; petals usually white **5. *Arabis***
62. Silique septa nearly lacking; flowering stems unbranched **29. *Eutrema***
62. Silique septa entire; flowering stems usually branched 63
63. Flowers showy, petals purple, greater than 1.5 cm long; garden escape **31. *Hesperis***
63. Flowers scarcely showy, petals various colours, less than 1 cm long 64
64. Siliques compressed parallel to septum 65
64. Siliques semiterete to terete 66
65. Seeds biseriate, wingless **25. *Draba***
65. Seeds uniseriate, sometimes imperfectly so, rarely biseriate, winged at least distally .. **5. *Arabis***
66. Plants scapose to 1 or 2 leaves on flowering stems **11. *Braya***
66. Plants with leafy flowering stems 67
67. Leaves reniform or cordate; seeds striate **1. *Alliaria***
67. Leaves linear to lanceolate or oblong; seeds not striate 68
68. Flowers small, petals less than 4 mm long; cauline leaves auriculate; widespread weeds or plants of saline places in mountain valleys and the plains **4. *Arabidopsis***
68. Flowers much larger; petals never less than 5 mm long 69
69. Flowers yellow; plants of the arid regions of western North America **49. *Rorippa***

69. Flowers white to pinkish; plants of the Great Slave region of the District of Mackenzie, Northwest Territories **43. *Nasturtium***
- 70.⁽³⁸⁾ Siliques compressed contrary to plane of septum **28. *Erysimum***
- 70.⁽³⁸⁾ Siliques compressed parallel to the plane of the septum or terete or nearly so 71
71. Siliques flattened parallel to the plane of the septum 72
71. Siliques terete or nearly so, sometimes slightly 4-angled 73
72. Seeds wingless (very rarely winged), biseriolate **25. *Draba***
72. Seeds winged at least distally, uniseriate or sometimes imperfectly so **5. *Arabis***
73. Trichomes malpighiaceae **28. *Erysimum***
73. Trichomes not malpighiaceae 74
74. Plants scapose **11. *Braya***
74. Plants with leaves on the flowering stems 75
75. Stigma lobes each with a lateral horn or swelling in fruit **41. *Matthiola***
75. Stigma lobes without an outgrowth or stigmas not lobed 76
76. Stigmas connate along their entire length; siliques sharply pointed **40. *Malcolmia***
76. Stigma lobes free, or stigmas obtuse or conical in mature siliques; siliques not pointed, mostly obtuse 77
77. Plants with a well-developed branched, usually underground caudex, caespitose . **53. *Smelowskia***
77. Plants without a well-developed caudex or the caudex elevated, rarely caespitose 78
78. At least some leaves pinnate, bipinnate or occasionally tripinnate **23. *Descurainia***
78. Leaves entire to somewhat lobed, not pinnate or more highly divided 79
79. Petals purple, greater than 1.8 cm long; flowers fragrant, showy; inner sepals conspicuously saccate; garden escape **31. *Hesperis***
79. Petals white or rarely, purplish or yellowish, less than 1.5 cm long; flowers not fragrant or showy; inner sepals not saccate or only slightly so 80
80. Cauline leaves sessile and auriculate 80a
- 80a. Trichomes much branched, usually dendritic; petals white; siliques terete; seeds wingless; cotyledons incumbent **30. *Halimolobos***
- 80a. Trichomes various; petals usually yellow or purple, rarely white; siliques usually flattened; seeds winged; cotyledons accumbent **5. *Arabis***
80. Cauline leaves cuneate at base or petioled 81
81. Siliques glabrous, not torulose; fruiting pedicels 5 to 10 mm long; annual alien weeds **4. *Arabidopsis***
81. Siliques usually pubescent, often torulose; fruiting pedicels mostly less than 5 mm long; native perennials or biennials **11. *Braya***

1. **Alliaria** Scop., Fl. Carniol., ed. 1, 515, 1760. Type species of genus is *Alliaria petiolata* (M.Bieb.) Cavara & Grande (*Erysimum alliaria* L.).
 1. *Alliaria petiolata* (M.Bieb.) Cavara & Grande (= *Alliaria officinalis* Andr. ex M.Bieb.), (NB, PQ, ON, BC). Introduced from Europe.
2. **Alyssum** L., Sp. Pl. 2: 250, 1753. Type species of genus is *Alyssum montanum* L.
 1. *Alyssum alyssoides* (L.) L. (PQ, ON, MB, AB, BC). Introduced from Eurasia.
 2. *Alyssum desertorum* Stapf (sMB, sSK, AB, sBC). Introduced from Europe.
 3. *Alyssum murale* Waldst. & Kit. (PQ, ON, AB, BC). Introduced from Europe.
 4. *Alyssum obovatum* (C.A.Mey.) Turcz. (= *Alyssum americanum* Greene). (AK, YT). Native.
 1. Cauline leaves broadly spatulate to obovate, obtuse to rounded at apex, densely overlapping; low humifuse, profusely branched plants, usually with both sterile and fertile shoots present 4. *Alyssum obovatum*
 1. Cauline leaves linear to oblanceolate, usually acute at apex, not densely overlapping; plants erect or stems decumbent toward base, simple or usually few branched at base and without sterile shoots (except *A. murale*) 2
 2. Plants perennial; stems 3 to 7 dm tall; pedicels very slender and divaricately ascending; branches of inflorescences subumbellate; ovules 1 per locule 3. *A. murale*
 2. Plants annual; stems less than 3 dm tall; pedicels stout and at right angles or widely divaricately ascending; inflorescences racemose; ovules 2 per locule 3
 3. Siliques glabrous or nearly so, deciduous; cauline leaves linear to linear-oblanceolate . . . 2. *A. desertorum*
 3. Siliques uniformly pubescent, persistent; cauline leaves narrowly obovate or linear-oblanceolate 1. *A. alyssoides*
3. **Aphragmus** Andr. ex DC., Prodr. 1: 209, 1824. Type species of genus is *Aphragmus eschscholzianus* Andr. ex DC.
 1. *Aphragmus eschscholzianus* Andr. ex DC. (AK, YT, BC, rare). Native.
4. **Arabidopsis** Heynh. in Holl. & Heynh., Clav. Gen. Fl. Sachsen 1: 538, 1842. Type species of genus is *Arabidopsis thaliana* (L.) Heynh. (*Arabis thaliana* L.).
 1. *Arabidopsis salsuginea* (Pallas) O.E.Schulz (= *Thellungiella salsuginea* (Pallas) O.E. Schulz), (YT, NT-M, MB, SK, AB, BC). Native.
 2. *Arabidopsis thaliana* (L.) Heynh. (PQ, ON, BC). Introduced from Eurasia.
 1. Cauline leaves cuneatae at the base; stems pubescent toward base with simple spreading trichomes; basal leaves pubescent with dendritic 2- to 4-rayed trichomes 2. *A. thaliana*
 1. Cauline leaves sessile and auriculate, clasping; plants completely glabrous 1. *A. salsuginea*
5. **Arabis** L., Sp. Pl. 2: 664, 1753. Type species of genus is *Arabis alpina* L.
 1. *Arabis alpina* L. (N-K; N-F; NF; nPQ & Gaspé; nON; nMB). Native.
 - 2a. *Arabis arenicola* (Richardson ex Hook.) Gelert var. *arenicola* (NT-M, N-K, N-F, NF, nON, nSK). Native.
 - 2b. *Arabis arenicola* var. *pubescens* S.Watson (N-K, PQ, nON, MB, SK). Native.
 3. *Arabis boivinii* G.A.Mulligan (YT, rare; PQ, Gaspé; sSK). Native.
 4. *Arabis calderi* G.A.Mulligan (swYT, NT-M, swAB, BC). Native.

5. *Arabis canadensis* L. (swPQ, sON). Native.
6. *Arabis caucasica* Willd. (= *Arabis alpina* subsp. *caucasica* (Willd.) Briq.), (NB, PQ, ON, BC). Introduced from Asia. Persisting locally as a garden escape.
7. *Arabis codyi* G.A.Mulligan (YT, BC). Native.
8. *Arabis columbiana* Macoun (YT, BC). Native.
9. *Arabis depauperata* A.Nelson & Kennedy (sBC). Native.
- 10a. *Arabis divaricarpa* A.Nelson var. *divaricarpa* (AK, YT, NT-M, NB to BC). Native.
- 10b. *Arabis divaricarpa* var. *dacotica* (Greene) B.Boivin (seAK; YT; NT-M; PQ, rare; nON, MB, SK, AB, BC). Native.
11. *Arabis drepanoloba* Greene (AK, YT, swAB, seBC). Native.
12. *Arabis drummondii* A.Gray (AK, YT, NT-M, NF, NS, NB to BC). Native.
13. *Arabis eschscholtziana* (Hopkins) Rollins (AK, YT, BC). Native.
14. *Arabis exilis* A.Nelson (YT, swSK, AB, BC). Native.
15. *Arabis glabra* (L.) Bernh. (= *Turritis glabra* L.), (AK, YT, NB, PQ to BC). Probably both native and introduced.
- 16a. *Arabis hirsuta* (L.) Scop. var. *hirsuta* (sBC, rare). Possibly introduced from Europe.
- 16b. *Arabis hirsuta* var. *pyncocarpa* (Hopkins) Rollins (AK, YT, NT-M, NS, NB to BC). Native.
- 17a. *Arabis holboellii* Hornem. var. *holboeillii* (Greenland). Native.
- 17b. *Arabis holboellii* var. *consanguinea* (Greene) G.A.Mulligan (AK, YT, SK, AB, BC). Native.
- 17c. *Arabis holboellii* var. *retrofracta* (Graham) Rydb. (AK, YT, NT-M, PQ to BC). Native.
- 17d. *Arabis holboellii* var. *secunda* (Howell) Jepson (AK; YT; NT-M; PQ, rare but common in Gaspé; ON, rare; SK to BC). Native.
18. *Arabis kamtschatica* (Fisch. ex DC.) Ledeb.(= *Arabidopsis lyrata* subsp. *kamchatica* (Fisch. ex DC.) O’Kane & Al-Shehbaz), (AK, YT, NT-M, nSK, swAB, BC). Native.
19. *Arabis laevigata* (Mühl.) Poir. (swPQ, sON). Native.
20. *Arabis lemmonii* S.Watson (AK, YT, swAB, sBC). Native.
21. *Arabis lignifera* A. Nelson (nw & sBC). Native.
22. *Arabis lyallii* S.Watson (NT-M, sON, MB, SK, AB, BC). Native.
23. *Arabis lyrata* L. (= *Arabidopsis lyrata* (L.) O’Kane & Al-Shehbaz subsp. *lyrata*), (AK, NT-M, sON, MB, SK, AB, BC). Native.
24. *Arabis microphylla* Nutt. ex Torr. & A.Gray (PQ, Percé in Gaspé; southcentral BC). Native.
25. *Arabis murrayi* G.A.Mulligan (YT, swAB, sBC). Native.
26. *Arabis nuttallii* B.L.Rob. (YT, swAB, seBC). Native.
27. *Arabis petraea* (L.) Lam. (= *Arabis media* N. Busch) (AK, YT). Native.
28. *Arabis pinetorum* Tidestrom (AK, YT, NT-M, MB to BC). Native.
29. *Arabis shortii* (Fern.) Gleason (sON, Essex Co.). Native.
30. *Arabis sparsiflora* Nutt. ex Torr. & A.Gray (sBC, Penticton & Princeton). Native.

1. Bases of middle cauline leaves all attenuate, cuneate, obtuse to truncate, never clasping stems 2
1. Bases of middle cauline leaves always auriculate-, hastate-, to sagittate-clasping stems 10
2. Siliques strongly descending to pendulous 3
2. Siliques ascending to erect 4
3. Stems 3 to 9 dm high; biennials, usually lacking caudex leaves as plants mature; caudex leaves, if present, glabrous or with simple to once-branched trichomes to 0.5 mm long; siliques 2.0 to 3.25 mm wide; seeds prominently winged 5. *A. canadensis*
3. Stems usually less than 3 dm high; perennials with persistent caudex leaves; surfaces of caudex leaves with short-stalked (less than 0.063 mm long) semistellate trichomes mostly 0.125 mm wide; siliques 1.5 to 2.0 mm wide; seeds only slightly winged 14. *A. exilis*
4. Siliques strongly ascending to erect; surfaces of caudex leaves glabrous or with short-stalked (less

- than 0.063 mm long) semidendritic to dendritic trichomes mostly 0.125 mm wide
 25. *A. murrayi*
4. Siliques ascending; surfaces of caudex leaves with simple or medium- to long-stalked (0.063 mm long or longer) 1- to 2-branched, -forked or -rayed trichomes from 0.25 to 1.5 mm long or wide
 5
5. Some caudex leaf blades with a larger terminal segment and 2 to many much smaller lateral segments or prominent lobes 6
5. All caudex leaf blades entire, sparingly toothed or with one to few pairs of shallow to deep lobes; none of leaf blades with a larger terminal segment and smaller lateral segments or prominent lobes 7
6. Petals 6.0 to 8.0 mm long; siliques 0.75 to 1.0 mm wide; beaks of siliques 0.5 to 1.0 mm long, much longer than wide; surfaces of caudex leaves with few to many simple trichomes 0.75 to 1.25 mm long; larger terminal segments of caudex leaves usually ovate 23. *A. lyrata*
6. Petals (4.0) 5.0 to 5.5 mm long; siliques 1.25 to 1.5 mm wide; beaks of siliques usually less than 0.5 mm long, shorter to slightly longer than wide; surfaces of caudex leaves usually glabrous, rarely with few to scattered 2-forked or -rayed trichomes to 0.75 mm long; larger terminal segments of caudex leaves usually broadly ovate to orbicular 18. *A. kamtschatica*
7. Petals (4.5) 7.0 to 8.0 mm long; outer sepals prominently saccate at base; surfaces of caudex leaves mostly with simple trichomes 0.75 to 1.5 mm long 26. *A. nuttallii*
7. Petals 4.0 to 5.5 mm long; outer sepals weakly saccate; surfaces of caudex leaves glabrous or mostly with branched or rayed trichomes less than 0.75 mm long or wide 8
8. Siliques subterete with prominent midvein from base to apex, 0.75 to 1.0 (1.25) mm wide; surfaces of caudex leaves mostly with medium-stalked (0.063 to 0.125 mm long) 2- to 3-rayed trichomes 27. *A. petraea*
8. Siliques flattened, prominent midvein absent towards apex, 1.5 to 2.5 (3.0) mm wide; surfaces of caudex leaves glabrous or with simple and long-stalked (over 0.125 mm long) branched or rayed trichomes 9
9. Plants glabrous, except for occasional simple trichomes on leaf margins . . . 2a. *A. arenicola* var. *arenicola*
9. Plants with copious simple, 1- to 2-branched and long-stalked 2-rayed trichomes on stem and leaf surfaces
 2b. *A. arenicola* var. *pubescens*
10. Caudex leaves glabrous, or absent when plants mature 11
10. Caudex leaves present and hairy 17
11. Siliques erect-appressed to rachis 12
11. Siliques descending, spreading, ascending to strongly ascending 13
12. Siliques subterete; petals yellow, about as long as sepals; biennials with basal leaves few or absent as plants mature; bases of stems with spreading trichomes 15. *A. glabra*
12. Siliques strongly flattened; petals whitish to purplish, about twice as long as sepals; short-to long-lived perennials with caudex leaves persisting as plants mature; bases of stems glabrous or with malpighiaceae trichomes 12. *A. drummondii*
13. Inflorescences secund 20. *A. lemmonii*
13. Inflorescences symmetrical 14
14. Siliques strongly ascending (2.0) 2.25 to 3.5 mm wide; stems 1.0 to 2.5 (4.0) dm high; persistent perennials with much branched, many stemmed, caudexes 22. *A. lyallii*

14. Siliques descending, spreading to ascending, 0.75 to 2.0 mm wide; stems (2) 3 to 10 dm high; biennials or short-lived perennials with basal leaves often absent as plants mature; single to few stemmed 15
15. Siliques up to 25 mm long and 0.75 mm wide, with a scattered simple to once-forked puberulence 29. *A. shortii*
15. Siliques more than 25 mm long and 0.75 wide, glabrous, petals longer than 2.0 mm 16
16. Cauline leaves more than 10 mm wide; basal leaves usually absent; siliques spreading and strongly downwardly arcuate 19. *A. laevigata*
16. Cauline leaves mostly less than 10 mm wide; basal leaves mostly persisting; siliques descending, spreading to ascending, straight to slightly arcuate 10a. *A. divaricarpa* var. *divaricarpa*
17. Surfaces of caudex leaves with simple trichomes only; siliques spreading and strongly downwardly arcuate 19. *A. laevigata*
17. Surfaces of caudex leaves with with some forked or rayed trichomes; if siliques are spreading and strongly downwardly arcuate, the trichomes on surfaces of caudex leaves are all forked or rayed 18
18. Siliques all strongly descending, pendulous to downwardly-appressed to rachis 19
18. Siliques slightly descending, spreading, strongly ascending to erect-appressed to rachis 24
19. At least one-half of fruiting pedicels semigeniculate to geniculate at their bases 20
19. Fruiting pedicels gradually to abruptly reflexed near their bases, never semigeniculate or geniculate . . . 22
20. All fruiting pedicels strongly geniculate at their bases; siliques 1.0 to 1.5 mm wide; middle and upper cauline leaves revolute at edges 17c. *A. holboellii* var. *retrofracta*
20. About one-half of fruiting pedicels semigeniculate to geniculate at their bases; siliques 1.25 to 2.5 mm wide; middle and upper cauline leaves flat at edges 21
21. Siliques 1.75 to 2.5 mm broad 17a. *A. holboellii* var. *holboellii*
21. Siliques 1.25 to 1.5 mm broad 17d. *A. holboellii* var. *secunda*
22. Undersurfaces of caudex leaves mostly with short-stalked (less than 0.063 mm long), semidendritic to dendritic, unbranched to few-branched, 2- to 3-forked trichomes 0.25 to 0.35 mm long; these trichomes often semi-appressed to leaf surfaces and pointing towards apices 28. *A. pinetorum*
22. Undersurfaces of caudex leaves with sessile to medium-stalked (to 0.125 mm long) semistellate to stellate, unbranched to many-branched, 3- and 4-rayed trichomes, from 0.125 to 0.35 mm wide 23
23. Middle cauline leaves weakly auriculate-, hastate- to sagittate-clasping stems; undersurfaces of caudex leaves with short-stalked (less than 0.063 mm long) semistellate trichomes, mostly 0.125 mm wide 14. *A. exilis*
23. Middle cauline leaves strongly auriculate-, hastate- to sagittate-clasping stems; undersurfaces of caudex leaves with nearly sessile stellate trichomes, mostly 0.25 to 0.35 mm wide 17b. *A. holboellii* var. *consanguinea*
24. Undersurfaces of caudex leaves mostly with medium- to long-stalked (over 0.063 mm long) rayed or forked trichomes; simple trichomes on surfaces of caudex leaves present or absent 25
24. Undersurfaces of caudex leaves mostly with sessile to short-stalked (less than 0.063 mm long) rayed or forked trichomes; simple trichomes on surfaces of caudex leaves absent 33

25. Siliques arcuate-spreading to arcuate-descending 26
25. Siliques mostly straight and ascending, strongly ascending to erect-appressed to rachis 27
26. Undersurfaces of caudex leaves mostly with 2- and 3-forked trichomes; fruiting plants usually have sterile rosettes with strongly ascending leaves 30. *A. sparsiflora*
26. Undersurfaces of caudex leaves mostly with 3- and 4-rayed trichomes; fruiting plants lacking sterile rosettes 8. *A. columbiana*
27. Cauline and caudex leaves with similar dentate to subdentate margins; flowering stems spreading to ascending 28
27. Cauline and caudex leaves not similarly dentate to subdentate; flowering stems erect 29
28. Petals less than 10 mm long and 3.5 mm wide; plants self-compatible, forming well-developed siliques; undersurfaces of caudex leaves mostly with unbranched cruciform trichomes 0.25 mm wide 1. *A. alpina*
28. Petals more than 10 mm long and 3.5 mm wide; self incompatible; isolated plants with aborted siliques; undersurfaces of caudex leaves mostly with short-branched cruciform to 5- or more-rayed trichomes 6. *A. caucasica*
29. Siliques ascending; caudex leaves with unbranched to few-branched, 2- and 3-rayed, medium-stalked (0.063 to 0.125 mm long) trichomes; siliques 1.5 to 1.75 mm wide 7. *A. codyi*
29. Siliques strongly ascending to erect-appressed to rachis; caudex leaves with simple to medium-(0.063 to 0.125 mm) and long- (over 0.125 mm) stalked 2- to 3-forked trichomes; siliques 1.0 to 1.75 mm wide 30
30. Biennials; petals yellow; outer sepals not saccate at bases; siliques subterete; middle and upper cauline leaves glabrous and glaucous 15. *A. glabra*
30. Biennials to short-lived perennials; petals white to purple; outer sepals saccate at bases; siliques strongly flattened; middle and upper cauline leaves pubescent, at least at bases, not glaucous 31
31. Petals small, 3 to 5 mm long; siliques 1.1 mm wide or narrower, erect-appressed to rachis; outer sepals moderately saccate at bases; cauline leaves approximate to remote 32
31. Petals larger, (6)7 to 9(9.5) mm long; siliques 1.25 to 1.75 mm wide, somewhat divergent; outer sepals prominently saccate at bases; cauline leaves remote 13. *A. eschscholtziana*
32. Mostly perennials; siliques beakless or nearly so 16a. *A. hirsuta* var. *hirsuta*
32. Biennials to short-lived perennials; beaks of siliques mostly 0.5 to 1.25 mm long 16b. *A. hirsuta* var. *pycnocarpa*
33. Undersurfaces of caudex leaves with unbranched to few short-branched 2- to 3-rayed or forked trichomes 34
33. Undersurfaces of caudex leaves with unbranched to many-branched 3- and 4-rayed trichomes 43
34. Siliques strongly descending, descending to ascending 37
34. Siliques erect, often appressed to rachis 35
35. Undersurfaces of rosette or caudex leaves with malpighiaceae trichomes only 12. *A. drummondii*
35. Undersurfaces of caudex leaves mostly with sessile 3-rayed trichomes or short-stalked 2- and 3-rayed trichomes 36
36. Undersurfaces of caudex leaves mostly with unbranched, sessile, 3-rayed trichomes 0.25 to 0.35

- mm wide; rays of trichomes appressed to leaf surfaces; bases of middle cauline leaves strongly clasping stems 4. *A. calderi*
36. Undersurfaces of caudex leaves glabrous or with mostly unbranched to few-branched, short-stalked 2- and 3-rayed trichomes 0.125 mm wide; rays and branches of trichomes elevated from leaf surfaces; bases of middle cauline leaves cuneate, truncate to very weakly auriculate 2. *A. murrayi*
37. Siliques to 25 mm long and 0.75 mm wide with a scattered, simple to bifurcate puberulence; petals up to 2.0 mm long 29. *A. shortii*
37. Siliques more than 25 mm long and 0.75 mm wide, glabrous; petals longer than 2.0 mm 38
38. Stems 0.7 to 2.5 (4.0) dm high; perennials with persistent, often branched, caudexes 39
38. Stems (2)3 to 10 dm high; biennials or short-lived perennials with compact caudexes that tend to become reduced in size as plants mature 41
39. Siliques 2.0 to 3.5 mm wide; undersurfaces of caudex leaves with sessile to short-stalked (less than 0.063 mm long) unbranched to 2-branched, 3-rayed trichomes from 0.25 to 0.35 mm wide; siliques spreading to ascending or strongly ascending; inflorescences symmetrical to secund 40
39. Siliques 1.5 to 1.75 mm wide; undersurfaces of caudex leaves with medium-stalked (0.063 to 0.125 mm long), unbranched to few-branched, 2- and 3-forked trichomes from 0.125 to 0.25 mm long; siliques ascending; inflorescences symmetrical 7. *A. codyi*
40. Undersurfaces of caudex leaves with short-stalked, semistellate 1- to 2-branched, 3-rayed trichomes; siliques spreading to ascending; inflorescences secund 11. *A. drepanoloba*
40. Undersurfaces of caudex leaves with sessile to short-stalked, unbranched, 3-rayed trichomes; siliques strongly ascending; inflorescences symmetrical 22. *A. lyallii*
41. Undersurfaces of caudex leaves with unbranched to many prominently branched, sessile to short-stalked, 3-rayed trichomes, mostly less than 0.35 mm wide 42
41. Undersurfaces of caudex leaves with unbranched to few weakly branched, short-stalked, 3-rayed trichomes, mostly more than 0.35 mm wide 10b. *A. divaricarpa* var. *dacotica*
42. Undersurfaces of caudex leaves with unbranched, sessile or nearly sessile, 3-rayed trichomes with rays appressed to leaf surfaces; inflorescences symmetrical; siliques descending, spreading to ascending 10a. *A. divaricarpa* var. *divaricarpa*
42. Undersurfaces of caudex leaves with short-stalked, 3-rayed trichomes; the rays elevated above the leaf surfaces with numerous prominent branches; inflorescences semisecund to secund; siliques slightly to strongly descending 3. *A. boivinii*
43. ⁽³³⁾ Trichomes on undersurfaces of caudex leaves mostly less than 0.25 mm wide; siliques 1.25 to 2.0 mm wide 44
43. ⁽³³⁾ Trichomes on undersurfaces of caudex leaves mostly 0.25 or more mm wide; siliques 1.5 to 3.0 mm wide 45
44. Trichomes on undersurfaces of caudex leaves mostly between 0.125 and 0.25 mm wide; inflorescences secund; siliques mostly spreading 20. *A. lemmonii*
44. Trichomes on undersurfaces of caudex leaves mostly 0.125 mm wide; inflorescences symmetrical; siliques mostly ascending 24. *A. microphylla*
45. Inflorescences secund; siliques 2.25 to 3.0 mm wide 11. *A. drepanoloba*
45. Inflorescences symmetrical to slightly secund; siliques 1.5 to 2.0 mm wide 46

46. Siliques strongly ascending to erect; trichomes on undersurfaces of basal leaves short-stalked, semidendritic; stems 5 to 20(40) cm high 9. *A. depauperata*
46. Siliques spreading to descending; trichomes on undersurfaces of caudex leaves nearly sessile, semistellate to stellate; stems 30 to 60 cm high 47
47. Inflorescences symmetrical; trichomes on undersurfaces of caudex leaves mostly 0.25 mm wide; strongly perennial; frequently many-stemmed 21. *A. lignifera*
47. Inflorescences slightly secund; trichomes on undersurfaces of caudex leaves more than 0.25 mm wide; biennial or shortlived perennials; usually one to few stemmed 3. *A. boivinii*
6. ***Armoracia*** P.Gaertn., B.Mey. & Scherb., *nom. conserv.*, Oekon Fl. Wetterau 2: 426, 1800. Type species of genus is *Armoracia rusticana* P.Gaertn., B.Mey. & Scherb. (*Cochlearia armoracia* L.).
1. *Armoracia lacustris* (A.Gray) Al-Shehbaz & V.Bates (= *Neobeckia aquatica* (Eaton) Greene), (sPQ, sON). Native.
2. *Armoracia rusticana* P.Gaertn., B.Mey. & Scherb. (PE, NB to BC). Introduced from Eurasia.
1. Plants aquatic; submersed and tufted leaves highly divided, usually lacinate with hairlike segments; styles 2 to 3 mm long 1. *A. lacustris*
1. Plants terrestrial; basal leaves simple, up to 5 dm long; styles less than 1 mm long 2. *A. rusticana*
7. ***Athysanus*** Greene, Bull. Calif. Acad. Sci. 1: 72, 1885. Type species of genus is *Athysanus pusillus* (Hook.) Greene (*Thysanocarpus pusillus* Hook.).
1. *Athysanus pusillus* (Hook.) Greene (sBC). Native.
8. ***Barbarea*** W.T.Aiton, *nom. conserv.*, Hortus Kew., ed. 2, 4: 109, 1812. Type species of genus is *Barbarea vulgaris* (L.) W.T.Aiton (*Erysimum barbarea* L.).
1. *Barbarea orthoceras* Ledeb. (AK, YT, NT-M, NF, NB to BC). Native.
2. *Barbarea stricta* Andrz. (sPQ). Introduced from Europe.
3. *Barbarea verna* (Mill.) Aschers. (NF, BC). Introduced from Europe.
4. *Barbarea vulgaris* (L.) W.T.Aiton (NF, PE, NS, NB, PQ, ON, MB, AB, BC). Introduced from Eurasia.
1. Uppermost leaves pinnatifid to pinnatisect 2
1. Uppermost leaves simple, dentate 3
2. Basal leaves with 4 to 10 pairs of lateral lobes; siliques 4.0 to 7.0 cm long; pedicels stout, greater than 1 mm thick; petals 6.0 to 8.0 mm long 3. *B. verna*
2. Basal leaves usually with fewer than 4 pairs of lateral lobes; siliques 2.0 to 3.5 cm long, appressed to strongly ascending; pedicels slender, less than 1 mm thick; petals 3.0 to 5.0 mm long 1. *B. orthoceras*
3. Style 2.0 to 3.0 mm long in fruit; flower buds glabrous 4. *B. vulgaris*
3. Style 1.0 to 1.5 mm long in fruit; tips of flower buds pubescent 2. *B. stricta*
9. ***Berteroa*** DC., Reg. Veg. Syst. Veg. 2: 290, 1821. Type species of genus is *Berteroa incana* (L.) DC. (*Alyssum incanum* L.).
1. *Berteroa incana* (L.) DC. (NS, NB, PQ, ON, MB, SK, BC). Introduced from Europe.
10. ***Brassica*** L., Sp. Pl. 2: 666, 1753. Type species of genus is *Brassica oleracea* L.

1. *Brassica rapa* L. (= *Brassica campestris* L.), (AK, YT, NT-M, NF, NS, NB to BC). Introduced from Europe.
 2. *Brassica juncea* (L.) Czern. (NT-M), NF, PE, NS, NB to BC). Introduced from Eurasia.
 3. *Brassica napus* L. (NT-M, NF, NS, PQto SK, BC). Introduced from Eurasia.
 4. *Brassica nigra* (L.) W.D.J.Koch (NF, NS, NB, PQ, ON; SK, rare). Introduced from Eurasia.
 5. *Brassica oleracea* L. (NF, PE, PQ, ON). Rare garden escape, often not persisting. Introduced from Eurasia.
1. Upper stem leaves stalked or narrowed into a stalk-like base, not clasping 2
 1. Upper stem leaves one third to completely clasping stem, broadened at base 3
 2. Leaves green; pods appressed to stem, 1.0 to 2.0 cm, with mature pods more or less quadrangular; beak 1.5 to 3.0 mm; fruiting pedicels 1.5 to 3.0 mm long, appressed to stem 4. *B. nigra*
 2. Leaves glaucous; pods ascending, 3.0 to 5.0 cm, with mature pods slightly flattened perpendicular to partition; beak 5.0 to 10.0 mm long; fruiting pedicels 8.0 to 14.0 mm long, spreading 2. *B. juncea*
 3. Leaves fleshy, 1/3 clasping stem; petals over 13.0 mm long; beak less than 0.8 cm long, inflated, beak less than 1/7 length of valves 5. *B. oleracea*
 3. Leaves not fleshy, completely clasping stem, petals 6.0 to 13.0 mm long; beak 0.8 to 1.7 cm long, gradually tapering, 1/7 to 1/2 length of valves 4
 4. Petals 6.0 to 10.0 (rarely 11.5) mm long; beak usually 1.0 to 1.7 cm long, beak 1/3 to 1/2 (rarely 1/4) length of valves; plant not glaucous, often with simple trichomes on margins of basal leaves and lower stem nodes 1. *B. rapa*
 4. Petals 10.0 to 13.0 mm long; beak usually 0.8 to 1.0 cm, beak (rarely 1/4) 1/5 to 1/6 (rarely 1/7) length of valves; plant glaucous, glabrous 3. *B. napus*
- 11. *Braya* Sternb. & Hoppe, Denkschr. Königl.-Baier. Bot. Ges. Regensburg 1(1): 65, 1815. Type species of genus is *Braya alpina* Sternb. & Hoppe.**
1. *Braya glabella* Richardson (= *Braya purpurascens* (R.Br.) Bunge, = *Braya fernaldii* Abbe, = *Braya longii* Fern.), (AK, YT, NT-M, N-K, N-F, NF, PQ, AB, BC). Native.
 2. *Braya humilis* (C.A.Mey.) B.L.Rob. (= *Neotorularia humilis* (Ledeb.) Hedge), (AK, YT, NT-M, N-F, NF, PQ, ON, MB, AB, BC). Native.
 3. *Braya thorild-wulffii* Ostenf. (N-F). Native.
1. Stems scapose or rarely with a single entire leaf or bract; siliques ovoid to oblong; seeds usually biseriate 2
 1. Stems with 2 or more dentate leaves; siliques linear; seeds uniseriate 2. *B. humilis*
 2. Siliques 3 to 8 times longer than wide; stems ascending to erect, rarely decumbent to prostrate 1. *B. glabella*
 2. Siliques 1 to 2 times longer than wide; stems decumbent to prostrate 3. *B. thorild-wulffii*
- 12. *Bunias* L., Sp. Pl. 2: 669, 1753. Type species of genus is *Bunias erucago* L.**
1. *Bunias orientalis* L. (NS, NB, PQ, BC). Very rare and marginally persisting. Introduced from Europe.
- 13. *Cakile* Mill., Gard. Dict., ed. 4, 1, 1754. Type species of genus is *Cakile maritima* Scop.**
1. *Cakile maritima* Scop. (Coastal BC from QCIs south). Introduced from Europe.
 - 2a. *Cakile edentula* (Bigel.) Hook. var. *edentula* (AK, NF, PE, NS, NB, PQ, BC). Native in east, introduced in

- west.
- 2b. *Cakile edentula* var. *lacustris* Fernald (sON). Native.
1. Lower silique segment with 2 opposite horns on the sides prolonged upward into sharp triangular wedges, concave in between; petals 3 to 6 mm wide, lavender or less commonly white; leaves deeply pinnately lobed *I.C. maritima*
1. Lower silique segment with lateral horns and if sides are prolonged upward, the wedges less than 1.5 mm; petals less than 4.5 mm wide, often less than 3 mm, white to lavender; leaves toothed or shallowly lobed 2
2. Upper fruit segment plump, 5 to 9 mm wide, short beaked, the beak shorter than the seminiferous part, base without scarious margin; petals often fewer than 4 or reduced to bristles *2a. C. edentula* var. *edentula*
2. Upper fruit segment slender, 3 to 5 mm wide, long-beaked, the beak equalling or exceeding the length of the seminiferous part, base with a slight scarious border; petals 4, 5 to 7 mm long *2b. C. edentula* var. *lacustris*
- 14. *Camelina*** Crantz, Stirp. Austr., ed. 1, 1: 18, 1762. Type species of genus is *Camelina sativa* (L.) Crantz (*Myagrum sativum* L.).
1. *Camelina alyssum* (Mill.) Thell. (= *Camelina parodii* Ibarra & La Porte) (sMB, sSK, sAB). Introduced from Eurasia.
2. *Camelina microcarpa* Andr. ex DC. (NF, PE, NS, NB to BC). Introduced from Eurasia.
3. *Camelina sativa* (L.) Crantz (NT-M, PQ to BC). Introduced from Europe.
1. Siliques 7 to 12 mm long, truncate or rounded above; valves with a prominent midnerve at least to middle, often the full length; seeds oblong, ca. 2 times longer than wide, deeply grooved; stems sparsely pubescent to glabrous 2
1. Siliques 5 to 7 (8) mm long, obtuse at apex; valves obscurely nerved at base; seeds slightly longer than broad, finely alveolate-reticulate; stems conspicuously hirsute, especially towards the base *2. C. microcarpa*
2. Siliques obovoid to pyriform, with a rounded apex, distinctly longer than wide; leaves entire to weakly dentate *3. C. sativa*
2. Siliques depressed-globose, truncate at apex, nearly as wide as long; leaves usually strongly dentate or lobed *1. C. alyssum*
- 15. *Capsella*** Medik., *nom. conserv.*, Pfl.-Gatt. 1: 85, 1792. Type species of genus is *Capsella bursa-pastoris* (L.) Medik. (*Thlaspi bursa-pastoris* L.)
1. *Capsella bursa-pastoris* (L.) Medik. (AK, YT, NT-M, N-F, NF to BC). Introduced from Europe.
- 16. *Cardamine*** L., Sp. Pl. 2: 654, 1753. Type species of genus is *Cardamine pratensis* L.
1. *Cardamine angulata* Hook. (BC). Native.
2. *Cardamine bellidifolia* L. (AK, YT, NT-M, N-K, N-F, NF, PQ, AB, BC). Native.
3. *Cardamine bulbosa* (Schreb. ex Muhl.) Britton, Stern & Poggenb. (sPQ, sON, se MB). Native.
4. *Cardamine breweri* S. Watson var. *orbicularis* (Greene) Detling (BC). Native.
5. *Cardamine concatenata* (Michx.) O. Schwarz (= *Dentaria concatenata* Michx.), (NB, sPQ, sON). Native.
6. *Cardamine cordifolia* A. Gray var. *lyallii* (S. Watson) A. Nelson & J.F. Macbr. (BC). Native.
7. *Cardamine digitata* Richardson (AK, YT, NT-M, N-K, N-F). Native.

8. *Cardamine diphylla* (Michx.) A.W.Wood (= *Dentaria diphylla* Michx.), (NS, NB, PQ, ON). Native.
9. *Cardamine douglassii* Britton (sON). Native.
10. *Cardamine flexuosa* With. (NF). Introduced from Europe.
11. *Cardamine hirsuta* L. (ON, BC). Introduced from Europe.
12. *Cardamine impatiens* L. (sON). Introduced from Eurasia.
13. *Cardamine maxima* (Nutt.) A.W.Wood (= *Dentaria maxima* Nutt.), (NB, sPQ, sON). Native.
14. *Cardamine microphylla* Adams (AK, YT, NT-M). Native.
15. *Cardamine nuttallii* Greene var. *nuttallii* (= *Dentaria tenella* Pursh), (sBC). Native.
16. *Cardamine occidentalis* (S.Watson) Howell (BC). Native.
17. *Cardamine oligosperma* Nutt. ex Torr. & A.Gray (BC). Native.
18. *Cardamine parviflora* L. var. *arenicola* (Britton) O.E.Schulz (NT-M, NS, PQ to BC). Native.
19. *Cardamine pennsylvanica* Muhl. ex Willd. (AK, YT, NT-M, NF, PE, NS, NB to BC). Native.
20. *Cardamine pratensis* L. (AK, YT, NT-M, N-K, N-F, NF, NS, NB to BC). Native.
21. *Cardamine purpurea* Cham. & Schlecht. (AK, YT). Native.
22. *Cardamine regeliana* Miq. (AK, specimens from Otter Is. grown by T.J.Crovello, & also on Attu Is.). Native.
23. *Cardamine umbellata* Greene (AK, YT, NT-M, AB, BC). Native.
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1. Leaves simple, without lateral lobes cut to the midrib 2
1. Leaves compound, with petiolate leaflets or lobes cut to midrib 6
2. Plants low, mostly less than 1 dm tall 3
2. Plants more than 1 dm tall 4
3. Plants basically scapose, rarely with 1 or 2 cauline leaves; terrestrial, basal leaves numerous 2. *C. bellidifolia*
3. Plants with mostly stem leaves; semi-aquatic 22. *C. regeliana*
4. Rhizomes bulbiferous; lower cauline leaves ovate to oblong, cuneate to truncate below 5
4. Rhizomes elongated to condensed but not bulbiferous; lower cauline leaves orbicular, cordate 6. *C. cordifolia*
5. Upper stems with conspicuous spreading trichomes; lower cauline leaves more or less truncate below; petals usually pink or purplish 9. *C. douglassii*
5. Upper stems with minute appressed trichomes or glabrous; lower cauline leaves usually cuneate below; petals usually white 3. *C. bulbosa*
6. Stems gradually narrowing below toward an abrupt fragile junction with swollen rhizomes; rhizome leaves separate from the stem-rhizome axis are usually present; cauline leaves palmately divided into leaflets or lobes cut to the midrib, rarely subpalmate 7
6. Stems widest at base and narrowing upward or continuous with rhizomes without interruption, or plants with a taproot or fibrous root system; rhizome leaves separate from the stem-rhizome axis are wanting; cauline leaves pinnately divided into leaflets or lobes cut to the midrib 10
7. Rhizome and cauline leaves distinctly different 15. *C. nuttallii*
7. Rhizome and cauline leaves similar 8
8. Rhizomes elongated, more or less uniform in diameter or with alternately enlarged and constricted areas; stems above the leaves usually glabrous 9
8. Rhizomes jointed, formed of segments joined by slender fragile connectives; stems above the leaves sometimes glabrous or with spreading trichomes 5. *C. concatenata*

9. Rhizomes with alternately enlarged and slightly constricted areas; cauline leaves usually 3; trichomes on the leaflet margins spreading, conspicuous 13. *C. maxima*
9. Rhizomes uniform in diameter; cauline leaves usually 2; trichomes on the leaflet margins appressed, minute 8. *C. diphylla*
10. Stems smoothly continuous with the rhizomes which lack tuberlike swellings; rhizomes mostly smooth, long, slender, and with few rootlets but often branched 11
10. Stems joined abruptly to swollen rhizomes or with a fibrous taproot system; rhizomes scaly if elongated, thickened and with numerous rootlets 12
11. Cauline leaves erect, digitately 5- or less frequently 3-lobed, upper sessile or nearly so; lobes linear, acuminate 7. *C. digitata*
11. Cauline leaves spreading, mostly 5-lobed, upper petiolate; lobes ovate to broadly obovate 14. *C. microphylla*
12. Leaves numerous with 13 to 19 incised leaflets, densely overlapping, more than 1 dm long, little reduced upward on the stems 12. *C. impatiens*
12. Leaves with less than 15 leaflets (if over 11 then not incised), less than 1 dm long, reduced upward, usually remote 13
13. Plants annual or appearing to be annual or biennial based on the nature of the root system 14
13. Plants evidently perennial based on the root system 19
14. Basal leaves numerous, rosulate and persistent; stem bases and adjacent petioles with spreading trichomes 15
14. Basal leaves few or none, not rosulate; lower stems and leaves glabrous or sometimes sparsely hirsute 17
15. Stems several to numerous, outer decumbent, usually less than 2 dm tall; siliques narrow, 1 mm or less wide, stamens 4 11. *C. hirsuta*
15. Stems 1 or few, erect, usually more than 2 dm tall; siliques wider, 1.5 to 2 mm wide 16
16. Terminal lobes of upper cauline leaves obovate to oblanceolate, slightly longer than lateral lobes; terminal lobes of basal leaves usually cuneate at the base; petals about 2 mm long 17. *C. oligosperma*
16. Terminal lobes of upper cauline leaves oblanceolate to linear, much longer than the lateral lobes; terminal lobes of basal leaves usually cordate at the base; petals about 3 mm long 23. *C. umbellata*
17. Cauline leaves 2 to 4 cm long; leaflets narrowly linear, neither decurrent on the rachis nor petiolate; plant with taproot; typically growing on shallow soil over rock 18. *C. parviflora*
17. Cauline leaves 4 to 10 cm long; leaflets orbicular to broadly oblong, either decurrent on rachis or petiolate
18. Leaflets or segments decurrent on the rachis, broadly oblong; stems erect, not flexuose 19. *C. pensylvanica*
18. Leaflets petiolate, orbicular to oval; stems flexuose 10. *C. flexuosa*
19. Flowers large, petals 8 to 15 mm long; styles 3 to 6 mm long except in *C. angulata* which is singular by having horizontally elongated rhizomes 20
19. Flowers smaller, petals mostly less than 5 mm long; styles less than 2 mm long; rhizomes, if present, vertical or swollen, not laterally elongated 21

20. Cauline leaves distinctly pinnately parted with 7 to 15 usually oblong or linear lobes, often pectinate 20. *C. pratensis*
20. Cauline leaves trifoliate, 3- or infrequently 5-lobed; leaflets and lobes ample 1. *C. angulata*
21. Plants caespitose, usually *ca* 1 dm tall or less; inflorescences subumbellate; petals usually purple, strongly unguiculate; arctic and subarctic 21. *C. purpurea*
21. Plants not caespitose, mostly 2 dm or more tall; inflorescences elongated; petals white, not unguiculate 22
22. Basal leaves mostly simple; rhizomes slightly elongated, without tuberlike swellings 4. *C. breweri*
22. Basal leaves pinnately lobed; rhizomes tuberlike at the stem base 16. *C. occidentalis*
- 17. *Cardaria* Desv., J. Bot. Agric. 3: 163, 1815. Type species of genus is *Cardaria draba* (L.) Desv. (*Lepidium draba* L.).**
1. *Cardaria chalepensis* (L.) Hand.-Mazz. (= *Cardaria draba* subsp. *chalepensis* (L.) O.E. Schulz), (ON to BC). Introduced from Asia.
2. *Cardaria draba* (L.) Desv. (ON to BC). Introduced from Eurasia.
3. *Cardaria pubescens* (C.A.Mey.) Jarmol. (MB to BC). Native of Eurasia.
1. Silicles and sepals with short simple trichomes; silicles strongly inflated, ovoid to subglobose 3. *C. pubescens*
1. Silicles and sepals glabrous (sepals of *C. chalepensis* rarely with a few simple trichomes); silicles inflated but not ovoid to subglobose 2
2. Silicles cordate, usually constricted at septum, especially towards the base 2. *C. draba*
2. Silicles subreniform to broadly obovate, if orbicular larger than 3.5 x 3.5 mm .. 1. *C. chalepensis*
- 18. *Chorispora* R. Br. ex DC., *nom. conserv.*, Syst. Nat. 2: 435, 1821. Type species of genus is *Chorispora tenella* (Pallas) DC. (*Raphanus tenellus* Pallas)**
1. *Chorispora tenella* (Pallas) DC. (SK, AB, BC; very rare and mostly not persisting). Introduced from southwest Asia.
- 19. *Cochlearia* L., Sp. Pl. 2: 647, 1753. Type species of genus is *Cochlearia officinalis* L.**
1. *Cochlearia groenlandica* L. (AK, YT, NT-M, N-K, N-F, NF, PQ, ON, MB, BC). Native.
2. *Cochlearia sessilifolia* Rollins (AK). Native.
3. *Cochlearia tridactylites* DC. (NF, PQ). Native.
1. Siliques mostly slightly wider than long to nearly orbicular in outline; style more than 0.5 mm long; blades of rosette leaves cordate or less frequently truncate at base; cauline leaves dentate 3. *C. tridactylites*
1. Siliques longer than wide, ellipsoid or broadly oblong to ovoid; style less than 0.5 mm long; blades of rosette leaves cuneate at base or infrequently nearly truncate, or rosette leaves not formed; cauline leaves entire to dentate 2
2. Rosette and lower cauline leaves petiolate; siliques ovoid to subellipsoid, usually 3 to 6 mm long; seeds lacking trichomes; cotyledons absent 1. *C. groenlandica*
2. Rosette leaves not formed; cauline leaves all sessile, obovate to oblong, cuneate at base; siliques broadly oblong to ellipsoid, 8 to 12 mm long; seeds with white, waxy, scale-like trichomes; cotyledons often present 2. *C. sessilifolia*

20. **Conringia** Heist. ex Fabr., Enum. 160, 1759. Type species of genus is *Conringia orientalis* (L.) Dumort.
1. *Conringia orientalis* (L.) Dumort. (NF, PE, NS, NB to BC; rare in BC). Introduced from Eurasia.
21. **Coronopus** Zinn, *nom. conserv.*, Cat. Pl. Hort. Gott. 325, 1757. Type species of genus is *Coronopus ruellii* All. (*Cochlearia coronopus* L.)
1. *Coronopus didymus* (L.) Sm. (NF, rare; NS, NB, PQ, BC). Introduced from South America or Eurasia.
2. *Coronopus squamatus* (Forssk.) Asch. (rare in NS, NB, PQ, ON). Introduced from Europe.
1. Siliques with deep sinuses above and below, didymous; valves reticulate to rugose; styles obsolete
..... 1. *C. didymus*
1. Siliques without sinuses, subreniform; valves with coarse raised veins and protruding processes; style evident
..... 2. *C. squamatus*
22. **Crambe** L., Sp. Pl. 2: 671, 1753. Type species of genus is *Crambe maritima* L.
1. *Crambe abyssinica* Hochst. (SK, temporary casual grown for oil seed experiments; should not be considered as part of the Canadian flora). Introduced from Eurasia.
23. **Descurainia** Webb & Berth., *nom. conserv.*; Hist. Nat. Canaries (Phyt. Canar.) 3, sect. 1: 72, 1836. Type species of genus is *Descurainia sophia* (L.) Webb ex Prantl (*Sisymbrium sophia* L.)
1. *Descurainia incana* (Bernh. ex Fisch. & C.A.Mey.) Dorn (= *Descurainia richardsonii* (Sweet) O.E.Schulz), (AK, YT, NT-M, NB to BC) Native.
- 2a. *Descurainia incisa* (Engelm. ex A.Gray) Britton var. *incisa* (YT, BC). Native.
- 2b. *Descurainia incisa* var. *viscosa* (Rydb.) G.A.Mulligan, (PQ, only at one location, may be mislabelled; swAB, BC). Native.
- 3a. *Descurainia pinnata* var. *brachycarpa* (Richardson) Fernald (NT-M; PQ, rare; ON to BC). Native.
- 3b. *Descurainia pinnata* var. *intermedia* (Rydb.) C.L.Hitchc. (BC). Native.
- 3c. *Descurainia pinnata* var. *nelsonii* (Rydb.) M.E.Peck (YT; AB to SK, rare; BC). Native.
4. *Descurainia sophia* (L.) Webb. (YT, NT-M, PE, NS, NB to BC). Introduced from Europe.
5. *Descurainia sophioides* (Fisch. ex Hook.) O.E.Schulz (AK, YT, NT-M, N-F, MB, BC). Native.
1. Siliques rounded to obtuse at apex, clavate or subclavate; styles very short; seeds most frequently in 2 rows
..... 2
1. Siliques acute or acuminate at apex, linear to narrowly oblong; styles usually evident; seeds in one row
..... 4
2. Stems glandular and moderately pubescent 3a. *D. pinnata* var. *brachycarpa*
2. Stems eglandular, or if glandular then otherwise only sparsely pubescent or glabrous 3
3. Petals 1.5 mm long or less; pedicels less than 6 mm; siliques less than 8 mm long
..... 3c. *D. pinnata* var. *nelsonii*
3. Petals 2.0 mm long or longer; pedicels more than 6 mm; siliques more than 8 mm long
..... 3b. *D. pinnata* var. *intermedia*
4. Developing siliques overtopping the subumbellate inflorescences; raceme glandular
..... 5. *D. sophioides*
4. Developing siliques well below apex of the elongating inflorescences; raceme eglandular except for *D. incisa* var. *viscosa* 5

5. Siliques appressed and crowded on the rachises of the racemes; pedicels erect 1. *D. incana*
 5. Siliques on divaricately ascending to more widely spreading pedicels; pedicels not appressed to rachises of racemes 6
6. Leaves 2- to 3-pinnate; septa of the siliques with 3 indistinct nerves 4. *D. sophia*
 6. Leaves simply pinnate with the pinnae usually dentate or deeply incised; septa nerveless or with 1 indistinct nerve 7
7. Rachises of the inflorescences with spreading glandular trichomes 2b. *D. incisa* var. *viscosa*
 7. Rachises of the inflorescences pubescent with minute highly branched trichomes or glabrous; glandular trichomes absent 2a. *D. incisa* var. *incisa*
- 24. *Diplotaxis* DC., Syst. Nat. 2: 628, 1821. Type species of genus is *Diplotaxis muralis* (L.) DC. based on *Crucifera diplotaxis* Krause**
1. *Diplotaxis eruroides* (L.) DC. (PQ, York, Gaspé-Nord in 1904 & Ville Laval in 1961). Introduced from Europe.
 2. *Diplotaxis muralis* (L.) DC. (PE, NS, NB to AB). Introduced from Europe.
 3. *Diplotaxis tenuifolia* (L.) DC. (NS, NB, PQ, ON; BC, rare on Vancouver Island). Introduced from Europe.
1. Pedicels and sepals hirsute; petals white, pink or purple veined; lowest fruiting pedicels 0.5 to 1 cm long, bracteate 1. *D. eruroides*
 1. Pedicels and sepals glabrous; petals yellow; lowest fruiting pedicels 1 to 3.5 cm long, ebracteate 2
2. Annual or biennial; stems herbaceous; leaves mostly basal; siliques sessile 2. *D. muralis*
 2. Perennial; stems woody toward base; leaves mostly cauline; siliques on stipes 1 to 2 mm long 3. *D. tenuifolia*
- 25. *Draba* L., Sp. Pl. 2: 642, 1753. Type species of genus is *D. incana* L.**
1. *Draba albertina* Greene (= *D. stenoloba* var. *nana* (O.E.Schulz) C.L.Hitchc.), (YT, AB, BC). Native.
 2. *Draba aleutica* E.Ekman ex Hultén (AK, Rat Island of Aleutian Islands). Native.
 3. *Draba alpina* L. (AK, YT, NT-M, N-K, N-F, NF, nPQ, nON, nBC). Native.
 4. *Draba arabisans* Michx. (shores of NF, NS, NB; PQ, shores of St. Lawrence R.; ON, shores of Lake Ontario, Manitoulin Island, Lake Superior and Lake Temiskaming). Native.
 5. *Draba aurea* M.Vahl (= *D. manganensis* (M.Vict.) Fernald), (AK, YT, NT-M, N-K, NF, PQ, nON, nMB, nSK, nAB, nBC). Native.
 6. *Draba borealis* DC. (AK, YT, NT-M, N-F, AB, BC). Native.
 7. *Draba cana* Rydb. (= *D. lanceolata* of many authors, not Royle), (AK, YT, NT-M; local NB, PQ, ON; AB, BC). Native.
 8. *Draba cinerea* Adams (AK, YT, NT-M, N-K, N-F, nPQ, nON, nSK, nBC). Native.
 9. *Draba corymbosa* R.Br. ex DC. (AK, YT, NT-M, N-F, nPQ). Native.
 10. *Draba crassifolia* Graham (AK, YT, NT-M, N-K, N-F, PQ, AB, BC). Native.
 11. *Draba densifolia* Nutt. ex Torr. & A.Gray (central AK, swAB, seBC). Native.
 12. *Draba fladnizensis* Wulf. (AK, YT, NT-M, N-K; AB, rare Jasper & Banff; nBC). Native.
 13a. *Draba glabella* Pursh var. *glabella* (= *D. hirta sensu* Amer. authors, not L.), (AK, YT, NT-M, N-K, N-F, NF; NB, rare; PQ, ON, MB, BC). Native.
 13b. *Draba glabella* var. *pycnosperma* (Fernald & Knowlton) G.A.Mulligan (= *D. pycnosperma* Fernald & Knowlton), (NF, PQ). Native.
 14. *Draba grandis* Langsd. (= *Draba hyperborea* (L.) Desv., = *Nesodraba grandis* (Langsd.) E.L. Greene), (AK, BC). Native seacoast plant.
 15. *Draba hatchiae* G.A.Mulligan (AK, Jutwick Is.). Native.

16. *Draba incana* L. (N-K, NF, PE, NB, PQ, ON, MB). Native.
 17. *Draba incerta* Payson (AK, YT, AB, BC; Gaspé PQ report probably false). Native.
 18. *Draba juvenilis* Kom. (= *Draba longipes* Raup), (AK, YT, NT-M, AB, BC). Native.
 19. *Draba kananaskis* G.A.Mulligan (AK, Kenai Pen.; YT; AB, Kananaskis range). Native.
 20. *Draba kluanei* G.A.Mulligan (YT, Kluane Nat. Park). Native.
 21. *Draba lactea* Adams (= *D. allenii* Fernald), (AK, YT, N-K, N-F, NF, NS, NB, PQ, ON, MB, BC?). Native.
 22a. *Draba lonchocarpa* Rydb. var. *lonchocarpa* (AK, YT, NT-M, AB, BC). Native.
 22b. *Draba lonchocarpa* var. *thompsonii* Rollins (BC). Native.
 22c. *Draba lonchocarpa* var. *vestita* O.E.Schulz (AK, Seward Pen.; YT; BC, coastal area). Native.
 23. *Draba macounii* O.E.Schulz (AK, YT, NT-M, AB, BC). Native.
 24. *Draba murrayi* G.A.Mulligan (AK, YT). Native.
 25. *Draba nemorosa* L. (AK, rare; NT-M, N-F, rare; PQ, rare; ON to BC). Native, but has colonized outside of its original native habitats.
 26. *Draba nivalis* Liljebl. (AK, YT, NT-M, N-K, N-F, NF, PQ, ON, MB, AB, BC). Native.
 27. *Draba norvegica* Gunn. (= *D. clivicola* Fernald & *D. rupestris* R.Br.), (NT-M, e end of Great Slave Lake; N-K, NF, NS, PQ). Native.
 28. *Draba oblongata* R.Br. ex DC. (= *D. groenlandica* E.Ekman), (N-K, N-F). Native.
 29. *Draba ogilviensis* Hultén (YT, Ogilvie Mtns.). Native.
 30. *Draba oligosperma* Hook. (YT, NT-M, AB, BC). Native.
 31. *Draba palanderiana* Kjellm. (= *D. caesia* of many authors, not Adams), (AK, YT, NT-M; BC,rare). Native.
 32. *Draba pauciflora* R. Br. (= *Draba adamsii* Ledeb., = *D. oblongata* of many authors, not R.Br. ex DC.), (AK, Barrow area; N-F). Native.
 33. *Draba paysonii* J.F.Macbr. (AK, AB, BC). Native, at high elevations.
 34. *Draba porsildii* G.A.Mulligan (AK, YT, NT-M, AB, BC). Native.
 35. *Draba praealta* Greene (AK, YT, NT-M. AB, BC). Native.
 36. *Draba reptans* Lam. (sON, sMB, sSK, sAB, sBC). Native.
 37. *Draba ruaxes* Payson & H.St.John (AK, YT, BC). Native, at very high elevations.
 38. *Draba scotteri* G.A.Mulligan (YT, Kluane Nat. Park). Native.
 39. *Draba sibirica* (Pall.) Thell. (Greenland). Native.
 40. *Draba stenoloba* Ledeb. (AK, YT, NT-M, AB, BC). Native.
 41. *Draba stenopetala* Trautv. (AK, YT). Native.
 42. *Draba subcapitata* Simmons (N-K, N-F). Native.
 43. *Draba ventosa* A.Gray (YT, AB, BC). Native, at high elevations.
 44. *Draba verna* L. (= *Erophila verna* L.), (NB, rare; sPQ, sON, sAB, sBC). Introduced from Europe.
 45. *Draba yukonensis* A.E.Porsild (AK, Chitina; YT, vicinity of Mackintosh Lodge). Native.

1. All or most silicles abort early; seed set zero or very low; pollen fertility low or zero (rare in nature; morphology tending toward parent contributing most chromosomes F1 *Draba* hybrids
 1. Most silicles mature and produce seed; pollen fertility high in sexual species, zero in apomictic species
 2
2. Matted perennial with creeping stolons terminating in leafy rosettes 2a
 2. Annuals, biennials, or perennials with simple or multiple caudex; non-stoloniferous 3
- 2a. Leaves glabrous or with simple or forked trichomes on margins 29. *D. ogilviensis*
 2a. Surfaces of leaves with malpighiaceous to sessile trifold or cruciform trichomes 39. *D. sibirica*
3. Plants completely glabrous 4
 3. Plants at least partly pubescent 6

4. Style less than 0.15 mm long; petals yellow 10. *D. crassifolia*
4. Style more than 0.15 mm long; petals white 5
5. Stem of fruiting plant less than 10 cm tall; arctic-alpine 21. *D. lactea*
5. Stem of fruiting plant more than 10 cm tall 18. *D. juvenalis*
6. Large succulent plant with leaves up to 30 cm long and silicles 18 to 22 mm long; seeds 1.5 cm long, black
..... 14. *D. grandis*
6. Small non-succulent plants with leaves shorter than 15 cm long and silicles less than 18 mm long; seeds
less than 0.5 cm, brown 7
7. Style less than 0.15 mm long 8
7. Style more than 0.15 mm long 17
8. Annual or biennial plants of non-arctic lowland habitats 9
8. Perennial plants of arctic and alpine habitats 11
9. Petals deeply bilobed, white; cauline leaves absent 44. *D. verna*
9. Petals emarginate, yellow; cauline leaves present 10
10. Silicles about six times as long as broad 36. *D. reptans*
10. Silicles less than three times as long as broad 25. *D. nemorosa*
11. Lower surfaces of leaves glabrous or with simple to multiforked hairs; cruciform to stellate hairs
absent 12
11. Lower surfaces of leaves predominately with cruciform to stellate hairs 13
12. Petals white, about twice length of sepals 42. *D. subcapitata*
12. Petals yellow, about equalling sepals 10. *D. crassifolia*
13. Lower surfaces of leaves predominantly with stellate hairs 14
13. Lower surfaces of leaves predominantly with cruciform hairs 15
14. Cauline leaves more than 10; two or more flowers or fruits in axils of stem leaves; eastern, low arctic or
boreal cliffs 16. *D. incana*
14. Cauline leaves less than 10; zero to one flower or fruit in axils of stem leaves; pedicels spreading; western
alpine 35. *D. praealta*
15. Petals shorter than to equalling sepals; cauline leaves absent 32. *D. pauciflora*
15. Petals about twice length of sepals; cauline leaves usually one or two, rarely zero or three to four 6
16. Upper surfaces of some caudex leaves with mainly trifid and cruciform hairs less than 0.25 mm wide;
stems mainly with dendritic trichomes less than 0.25 mm long 40. *D. stenoloba*
16. Upper surfaces of all caudex leaves glabrous or with mainly simple or bifid hairs; stems mainly with simple
to bifurcate hairs 0.25 to 0.35 mm long 1. *D. albertina*
- 17.⁽⁷⁾ Silicles mainly with short-stalked cruciform or stellate hairs 18
17.⁽⁷⁾ Silicles glabrous or with simple to forked hairs 21
18. Leaf surfaces with stellate hairs only or rarely also a few simple hairs at base and apex 19
18. Leaf surfaces with simple, forked and stellate hairs, simple hairs usually predominant 20

19. Cauline leaves (3)5 to 8(12); usually some flowers or silicles in leaf axils; fruiting racemes usually occupying top half of stem; silicles narrower at base and apex, frequently twisted; pedicels usually appressed to stem 7. *D. cana*
19. Cauline leaves (zero)one to four(five); inflorescences leafless; fruiting racemes occupying top third of stem; silicles narrowed equally at base and apex, not twisted; pedicels spreading to semierect 8. *D. cinerea*
20. Upper surfaces of leaves with simple hairs only; lowest pedicel usually shorter than silicle 45. *D. yukonensis*
20. Upper surfaces of leaves with simple and stellate hairs; lowest pedicel equalling to twice the length of silicle 28. *D. oblongata*
21. Lower surfaces of leaves predominantly with simple to many-forked hairs 22
21. Lower surfaces of leaves predominantly with cruciform to stellate hairs 31
22. Stems with four to five leaves 15. *D. hatchiae*
22. Stems leafless 22a
- 22a. Lower surfaces of leaves with mainly four- to many-forked hairs 23
- 22a. Lower surfaces of leaves mainly with simple to three-forked hairs 25
23. Forked hairs less than 0.25 mm broad, concentrated towards apex of leaves, mainly seven- to many-forked 21. *D. lactea*
23. Forked hairs more than 0.25 mm broad, uniformly distributed on lower surfaces of leaves, mainly less than seven-forked 24
24. Petals white, about equalling sepals; silicles elliptic or broadly elliptic 42. *D. subcapitata*
24. Petals yellow, about twice length of sepals; silicles ovate or broadly ovate, glabrous 3. *D. alpina*
25. Stem glabrous 12. *D. fladnizensis*
25. Stem pubescent 25a
- 25a. Stems with one or two leaves 20. *D. kluanei*
- 25a. Stems leafless 26
26. Silicles pyriform to orbicular 2. *D. aleutica*
26. Stems ovate or elliptic 27
27. Petals narrower than sepals; stigma capitate 41. *D. stenopetala*
27. Petals broader than sepals; stigma bilobed 28
28. Style more than 0.5 mm long; pollen fertility rarely high, but if so, leaves coriaceous with tips inrolled; apomictic 11. *D. densifolia*
28. Style less than 0.5 mm long; pollen fertility high; leaves not coriaceous with tips inrolled; sexual 29
29. Petals white, about equalling sepals; silicles elliptic or broadly elliptic 42. *D. subcapitata*
29. Petals yellow, about twice length of sepals; silicles ovate or broadly ovate 30
30. Lower leaf surfaces with some simple hairs; silicles usually glabrous, inflorescence usually elongate 3. *D. alpina*
30. Lower leaf surfaces mostly with 5- to 8-branched short to rarely medium-stalked semidendritic trichomes;

- silicles puberulent; inflorescence usually corymbose 9. *D. corymbosa*
- 31.⁽²¹⁾ Lower surfaces of leaves mainly with cruciform hairs 31a
- 31.⁽²¹⁾ Lower surfaces of leaves mainly with stellate hairs 36
- 31a. Style 1.5 to 2.0 mm long 24. *D. murrayi*
- 31a. Style less than 1 mm long 32
32. Stem leaves (2)3 to 6(10); fruiting stems usually more than 15 cm high 6. *D. borealis*
32. Stem leaves zero to 2(3); fruiting stems usually less than 15 cm high 33
33. Lowest pedicels shorter than silicles; basal leaves compacted 34
33. Lowest pedicels usually about same to twice length of silicles; basal leaves loosely tufted 35
34. Petals white; stem rarely with one leaf; upper leaf surfaces with some stellate hairs; inflorescence usually elongate 34. *D. porsildii*
34. Petals yellow; stem leafless; upper leaf surfaces lacking stellate hairs; inflorescence usually corymbose 23. *D. macounii*
35. Cruciform trichomes on lower leaf surfaces mostly 0.5 mm wide, sessile or nearly so, with occasional small branches; caudex multibranching with small compacted rosettes at base of flowering stems; racemes 1- to 5-flowered; petals 3.0 to 4.0 mm long, yellow 19. *D. kananaskis*
35. Cruciform trichomes on lower leaf surfaces to 0.25 mm, short- to medium-stalked with occasional small branches; caudex rarely multibranching, but if so, leaves at base of flowering stems loose; racemes more than 5-flowered; petals 4.0 to 7.5 mm long, white 18. *D. juvenalis*
36. Lower surfaces of leaves mainly with long-stalked stellate hairs 37
36. Lower surfaces of leaves predominantly with short-stalked or sessile stellate hairs 39
37. Long-stalked stellate hairs on both leaf surfaces (apomictic) 43. *D. ventosa*
37. Only undersurfaces of leaves with long-stalked stellate hairs; upper leaf surfaces with long, simple or once- or twice-forked hairs (sexual or apomictic) 38
38. Stem and pedicels with simple, rarely forked hairs; leaves greater than 2 mm broad; pollen fertility high; sexual 37. *D. ruaxes*
38. Stem and pedicels with stellate and forked, rarely simple, hairs; leaves less than 2 mm broad; pollen fertility zero; apomictic 33. *D. paysonii*
39. Stellate hairs on lower surfaces of leaves mainly with nine or more rays 40
39. Stellate hairs on lower surfaces of leaves mainly with eight or less rays 47
40. Stellate hairs on lower surfaces of leaves sessile; pollen fertility zero; apomictic 30. *D. oligosperma*
40. Stellate hairs on lower surfaces of leaves stalked; pollen fertility high; sexual 41
41. Stellate hairs less than 0.2 mm in diameter 42
41. Stellate hairs more than 0.2 mm in diameter 43
42. Both leaf surfaces canescent with stellate hairs; stems and pedicels canescent with stellate hairs; rays of stellate hairs mainly parallel to leaf surfaces 26. *D. nivalis*
42. Stellate hairs mostly on underside of green leaf, especially towards apex; stem and pedicels

- usually glabrous; rays of stellate hairs pointing in many directions 21. *D. lactea*
43. Cauline leaves 2 to 10, rarely fewer; stem over 10 cm high 13a. *D. glabella* var. *glabella*
43. Cauline leaves zero to one; stem less than 10 cm high (occasionally taller in *D. incerta*) 44
44. Petals yellow 44a
44. Petals white 45
- 44a. Plant up to 15.0 cm tall and up to 10 stemmed; underside of caudex leaves with asymmetrical stellate trichomes; pedicels ascending, mostly equalling or longer than silicles; silicles narrowly ovate, glabrous or with bifurcate to several-furcate puberulence, silicles to 9 mm long and 4.5 mm wide 17. *D. incerta*
- 44a. Plant up to 10.0 cm tall and 1 to 4(5) stemmed; underside of caudex leaves with symmetrical stellate trichomes; pedicels ascending to strongly ascending, mostly shorter than silicles; silicles mostly lanceolate to narrowly ovate with a predominantly simple puberulence; silicles to 14 mm long and 2.5 mm wide 38. *D. scotteri*
45. Petals over 4.0 mm long; style over 0.5 mm long; some silicles frequently abort; silicles narrowly elliptic 31. *D. palanderiana*
45. Petals 4.0 mm or shorter; style less than 0.5 mm long; silicles never abort; silicles narrowly oblong 46
46. Silicles less than 2 mm wide 22a. *D. lonchocarpa* var. *lonchocarpa*
46. Silicles more than 2 mm wide 22b. *D. lonchocarpa* var. *thompsonii*
- 47.⁽³⁹⁾ Stellate hairs on lower surfaces of leaves mainly sessile 4. *D. arabisans*
- 47.⁽³⁹⁾ Stellate hairs on lower surfaces of leaves mainly stalked 48
48. Stems with zero to two leaves 48a
48. Stems with four or more leaves 50
- 48a. Silicles with predominantly simple puberulence; flowers yellow 38. *D. scotteri*
- 48a. Silicles glabrous; flowers white 49
49. Stems with one or two leaves, usually more than 2 mm broad; silicles appressed to stem; stem and pedicels frequently pubescent 22c. *D. lonchocarpa* var. *vestita*
49. Stems leafless or rarely with one leaf, less than 2 mm broad; silicles spreading; stem and pedicels usually glabrous 34. *D. porsildii*
50. Stems with more than 10 leaves; pedicels appressed to stem 51
50. Stems with less than 10 leaves; pedicels spreading 52
51. Style less than 0.5 mm long; petals white 16. *D. incana*
51. Style more than 0.5 mm long; petals yellow 5. *D. aurea*
52. Lowest pedicel about same length to twice length of silicle; some of cruciform and stellate hairs long-stalked; petals creamy yellow 35. *D. praealta*
52. Lowest pedicel shorter than silicle; all cruciform and stellate hairs are short-stalked; petals white 53
53. Style more than 0.5 mm long 6. *D. borealis*
53. Style less than 0.5 mm long 54
54. Upper surfaces of basal leaves mainly with simple to three-forked hairs 27. *D. norvegica*

54. Upper surfaces of basal leaves mainly with stellate hairs 55
55. Fruit inflated 13b. *D. glabella* var. *pycnosperma*
 55. Fruit not inflated 13a. *D. glabella* var. *glabella*
26. ***Eruca*** Mill., Gard. Dict., Abr. ed. 4, 1754. Type species of genus is *Eruca vesicaria* (L.) Cav.
1. *Eruca vesicaria* (L.) Cav. subsp. *sativa* (Mill.) Thell. (PQ, ON, SK, BC). Rare casual, introduced from Eurasia.
27. ***Erucastrum*** C.Presl, Fl. Sicula 1: 92, 1826. Type species of genus is *Erucastrum virgatum* C.Presl.
1. *Erucastrum gallicum* (Willd.) O.E.Schulz (NT-M, NF, PE, NS, NB to BC). Introduced from Eurasia.
28. ***Erysimum*** L., Sp. Pl. 2: 660, 1753. Type species of genus is *Erysimum cheiranthoides* L.
1. *Erysimum angustatum* Rydb. (AK, YT). Native.
 2. *Erysimum arenicola* S.Watson (BC, Vancouver Island and Whistler). Native.
 3. *Erysimum asperum* (Nutt.) DC. (MB, SK, AB). Native.
 3a. *Erysimum cheiri* (L.) Crantz (YT, sw BC; very rare). Introduced from Europe.
 4. *Erysimum cheiranthoides* L. (AK, YT, NT-M, NF, PE, NB to BC). Introduced from Eurasia.
 5. *Erysimum coarctatum* Fernald (AK, YT, NT-M; rare in NF, PQ, ON, AB; BC). Native.
 6. *Erysimum hieraciifolium* L. (NS, NB, PQ, ON, SK). Introduced from Eurasia.
 7. *Erysimum inconspicuum* (S.Watson) MacMill. (rare YT, NS, NB; PQ to BC). Native.
 8. *Erysimum pallasii* (Pursh) Fernald (AK, YT, NT-M, N-F; AB, Jasper Nat. Park). Native.
 9. *Erysimum repandum* L. (ON, Essex & Kent Counties). Introduced from Eurasia.
1. Petals 13 to 35 mm long, mostly more than 5 mm wide (except in *E. pallasii*); seeds more than 2 mm long 2
 1. Petals less than 12 mm long, less than 3 mm wide; seeds less than 2 mm long 5
2. Siliques rigidly spreading nearly at right angles to the rachis, tetragonal; valves strongly ribbed, densely pubescent between the ribs and sparsely pubescent on the ribs, giving a striped appearance 3. *E. asperum*
 2. Siliques divaricately ascending to erect, compressed; valves not strongly ribbed, more or less evenly pubescent, not markedly striped 3
3. Lower pedicels often bracteate; petals purple; plants often dwarfed 8. *E. pallasii*
 3. Lower pedicels not bracteate; petals yellow; plants 0.5 to 2 dm tall 4
4. Siliques torulose, somewhat twisted; siliques with beaklike styles and prominent broad stigmatic apices, tapered above 2. *E. arenicola*
 4. Siliques straight, not torulose or twisted, usually blunt or more or less abruptly narrowed to the style; stigmatic apices variable 4a
- 4a. Leaves linear, crowded, caudex usually multicipital; plants to 2 dm tall; petals yellow; native of western Yukon and Alaska 1. *E. angustatum*
 4a. Leaves mostly lanceolate to oblanceolate, broad to narrow, usually dentate; caudex usually simple; plants usually more than 2 dm tall; petals orange yellow; known only from rare garden escapes at Whitehorse, Yukon, and on Vancouver Island, BC 3a. *E. cheiri*
5. Pedicels thick, more or less the same diameter as the siliques; siliques widely spreading at right angles to the rachis or nearly so, moniliform; axes of the mature raceme gyrate .. 9. *E. repandum*

5. Pedicels slender or at least markedly less in diameter than the siliques; siliques divaricately ascending to erect, not moniliform; axes of the mature raceme straight 6
6. Annual or winter annual; pedicels very slender, one-third to one-half length of the siliques or more; siliques mostly less than 2 cm long 4. *E. cheiranthoides*
6. Biennial or perennial; pedicels thicker, less than one-half the length of the siliques; siliques mostly more than 2 cm long 7
7. Siliques erect and closely appressed to the rachis; inner surface of valves glabrous; plants with mostly sessile 3- to 4-parted trichomes; branches nearly erect and somewhat appressed to main axis 6. *E. hieracifolium*
7. Siliques spreading to strongly ascending, not closely appressed to rachis; inner surface of valves glabrous or with sessile trichomes; plants with mostly malpighiaceae trichomes; branches divaricately ascending, not appressed to main axis 8
8. Inner surface of valves pubescent, rarely glabrous; siliques less than 1.25 mm wide; seeds less than 1.25 mm long; sepals not gibbous at base; petals sulphur yellow, less than 2 mm wide; pedicels and siliques strongly ascending 7. *E. inconspicuum*
8. Inner surface of valves glabrous, rarely pubescent; siliques more than 1.25 mm wide; seeds more than 1.5 mm long; sepals gibbous at base; petals orange-yellow, more than 2 mm wide; pedicels and siliques spreading 5. *E. coarctatum*

29. *Eutrema* R.Br., Chlor. Melvill. 193, 1823. Type species of genus is *Eutrema edwardsii* R.Br.

1. *Eutrema edwardsii* R.Br. (AK, YT, NT-M, N-K, N-F, PQ, MB, AB, BC). Native.

30. *Halimolobos* Tausch., Flora 19: 410, 1836. Type species of genus is *Halimolobos lasiolobus* (Link) O.E.Schulz (*Arabis lasioloba* Link)

1. *Halimolobos mollis* (Hook.) Rollins (= *Arabidopsis bursifolia* (DC.) Botsch.), (AK, YT, NT-M, N-F). Native.
2. *Halimolobos virgata* (Nutt.) O.E.Schulz (sSK, seAB). Native.
3. *Halimolobos whitedii* (Piper) Rollins (BC, Sibley, W of Midway, W. Speadborough, May 18, 1903, specimen in CAN). Native.

1. Cauline leaves sessile, auriculate and clasping the stems 2
1. Cauline leaves petiolate or sessile and usually cuneate at base, not auriculate 3. *H. whitedii*
2. Stems usually single from the base, virgately branched above; plants not caespitose, pubescent above with branched appressed trichomes; siliques terete 2. *H. virgata*
2. Stems usually several, branched beginning near the base; plants usually caespitose, sparsely pubescent with mostly simple spreading trichomes to glabrous above; siliques slightly compressed parallel to the septum 1. *H. mollis*

31. *Hesperis* L., Sp. Pl. 2: 663, 1753. Type species of genus is *Hesperis matronalis* L.

1. *Hesperis matronalis* L. (NF, PE, NS, PQ to BC). Introduced from Europe.

32. *Hutchinsia* R.Br., in W.T.Aiton, Hort. Kew., ed. 2, 4: 82, 1812. Type species of genus is *Hutchinsia petraea* (L.) R.Br. (*Lepidium petraeum* L.)

1. *Hutchinsia procumbens* (L.) Desv. (NF, MB, SK, BC; rare throughout). Introduced from Eurasia.

- 33. *Iberis* L., Sp. Pl. 2: 648, 1753. Type species of genus is *Iberis semperflorens* L.**
1. *Iberis amara* L. (AK, NS, ON; rare escape from cultivation). Introduced from Europe.
 2. *Iberis umbellata* L. (PE, NS, PQ, ON, BC; rare escape from cultivation). Introduced from Europe.
1. Flowering and fruiting raceme umbelliferous 2. *I. umbellata*
 1. Flowering and fruiting raceme racemose 1. *I. amara*
- 34. *Idahoa* A.Nelson & J.F.Macbr., Bot. Gaz. 56: 474, 1913. Type species of genus is *Idahoa scapigera* (Hook.) A.Nels. & J.F.Macbr. (*Platyspermum scapigerum* Hook.)**
1. *Idahoa scapigera* (Hook.) A.Nelson & J.F.Macbr. (sBC). Native.
- 35. *Isatis* L., Sp. Pl. 2: 670, 1753. Type species of genus is *Isatis tinctoria* L.**
1. *Isatis tinctoria* L. (NF, PQ, ON, rare and probably not persisting; BC, sparingly naturalized in Fraser Valley and on Vancouver Island). Introduced from Europe.
- 36. *Lepidium* L., Sp. Pl. 2: 643, 1753. Type species of genus is *Lepidium latifolium* L.**
1. *Lepidium aucheri* Boiss. (sON, Toronto). Introduced from Europe.
 2. *Lepidium bourgeauanum* Thell. (AK, YT, NT-M, NF, NB to BC). Native.
 3. *Lepidium campestre* (L.) R.Br. (NF, PE, NS, NB, PQ, ON, AB, BC). Introduced from Europe.
 - 4a. *Lepidium densiflorum* Schrad. var. *densiflorum* (YT, NT-M, NF, PE, NS, NB to BC). Native.
 - 4b. *Lepidium densiflorum* var. *elongatum* (Rydb.) Thell. (AK, YT, AB, BC). Native.
 - 4c. *Lepidium densiflorum* var. *macrocarpum* G.A.Mulligan (YT, NB, ON to BC). Native.
 - 4d. *Lepidium densiflorum* var. *pubicarpum* (A.Nelson) Thell. (BC). Native.
 5. *Lepidium heterophyllum* (DC.) Benth. (BC). Introduced from Europe.
 6. *Lepidium latifolium* L. (sPQ, sAB, sBC). Introduced from Eurasia.
 7. *Lepidium oxycarpum* Torr. & A.Gray (sBC, Cadboro Bay, Vancouver Is., by Macoun in 1893). Introduced from further south, but probably not naturalized.
 8. *Lepidium perfoliatum* L. (swPQ, sON, SK, AB, BC). Introduced from Eurasia.
 9. *Lepidium ramosissimum* A.Nelson (YT, NT-M, PQ, MB to BC). Native.
 10. *Lepidium ruderale* L. (NF, PE, NS, NB to SK). Introduced from Eurasia.
 11. *Lepidium sativum* L. (NT-M, PE, NS, NB to BC). Introduced from Europe.
 12. *Lepidium virginicum* L. (AK, NF, PE, NS, NB, PQ, ON, BC). Native.
1. Middle and upper leaves suborbicular, deeply cordate, clasping with a closed sinus and slightly overlapping lobes, thus appearing as if perfoliate 8. *L. perfoliatum*
 1. Middle and upper leaves linear to broadly lanceolate, if clasping not appearing as if perfoliate 2
2. Silicles 5 to 6 mm long 3
 2. Silicles 2 to 3.5 mm long 5
3. Middle and upper leaves not clasping, silicles on strongly ascending to appressed pedicels 11. *L. sativum*
 3. Middle and upper leaves clasping the stem, silicles on spreading pedicels 4
4. Annual or biennial with usually a single erect stem; anthers yellow; silicles covered with small white vesicles; style included to slightly exerted from shallow apical notch 3. *L. campestre*
 4. Perennial with numerous ascending stems; anthers violet; silicles with few or no vesicles; style mostly exerted from shallow apical notch 5. *L. heterophyllum*

5. Glaucous perennial 50 to 130 cm high, with rhizomes; leaves thickish and rugose, lanceolate to broadly lanceolate 6. *L. latifolium*
5. Annual or biennial, 5 to 40 cm high, leaves not rugose, linear to lanceolate 6
6. Silicles bidentate at apex, the sinus well developed 7
6. Silicles merely retuse or acuminate at apex, with a shallow sinus 8
7. Fruiting pedicels spreading to sigmoid 7. *L. oxycarpum*
7. Fruiting pedicels strongly ascending to erect-appressed 1. *L. aucheri*
8. Silicles puberulent, at least on margin 9
8. Silicles glabrous 11
9. Silicles 2.5 to 3 by 1.5 to 2 mm, nearly elliptic, narrowed into acute apical teeth; inflorescence congested into numerous axillary racemes as well as terminal ones 9. *L. ramosissimum*
9. Silicles 3 to 3.5 by 2.5 to 3 mm, round-obcordate to short oblong-obovate, rounded to abruptly curved into obtuse apical teeth; inflorescence a single raceme or of sparsely branched racemes 10
10. Silicles puberulent only on margins 4b. *L. densiflorum* var. *elongatum*
10. Silicles uniformly puberulent 4d. *L. densiflorum* var. *pubicarpum*
11. Silicles oval, orbicular to rotund; petals conspicuous, as long or slightly longer than sepals 12. *L. virginicum*
11. Silicles ovate, obovate to round-obcordate; petals shorter than sepals or lacking 12
12. Silicles ovate to obovate, narrowed into acutish apical teeth 13
12. Silicles round obcordate to short-obovate, rounded to abruptly curved into obtuse apical teeth 14
13. Middle and upper cauline leaves blunt-tipped; lower cauline and rosette leaves bipinnatifid; petals absent 10. *L. ruderale*
13. Middle and upper cauline leaves acute-tipped; lower cauline and rosette leaves incised; petals present, but shorter than the sepals 2. *L. bourgeauanum*
14. Silicles averaging 2.5 mm long; pedicels slightly flattened, crowded, more than 9 pedicels per cm 4a. *L. densiflorum* var. *densiflorum*
14. Silicles averaging 3 to 3.5 mm long; pedicels conspicuously flattened, less crowded, usually less than 9 pedicels per cm 4c. *L. densiflorum* var. *macrocarpum*
- 37. *Lesquerella*** S.Watson, Proc. Amer. Acad. Arts 23: 249, 1888. Type species of genus is *Lesquerella occidentalis* (S.Watson) S.Watson.
1. *Lesquerella alpina* (Nutt. ex Torr. & A.Gray) S.Watson (sSK, sAB). Native.
2. *Lesquerella arctica* (Wormsk. ex Hornem.) S.Watson (AK, YT, NT-M, N-K, N-F, NF, PQ, MB, AB, BC). Native.
3. *Lesquerella arenosa* (Richardson) Rydb. (MB, SK, AB). Native.
4. *Lesquerella calderi* G.A.Mulligan & A.Porsild (AK, YT, NT-M). Native.
5. *Lesquerella douglasii* S.Watson (BC). Native.
1. Pedicels simply recurved in a single arch, not straight or sigmoid; infrutescences usually secund 3. *L. arenosa*
1. Pedicels sigmoid, curved or straight, not recurved in a single arch; infrutescences not secund 2

2. Basal and lowermost leaves narrow, 1 to 5 mm wide, usually with no clear distinction between blade and petiole; leaves in a tuft at stem bases but not rosulate; basal and cauline leaves somewhat similar 1. *L. alpina*
2. Basal and lowermost leaves with a definite blade, more than 5 mm wide, usually abruptly expanded from petiole to blade; basal leaves often rosulate; basal and cauline leaves different 3
3. Ovules 2 per locule, rarely 3 or 4; styles more than 2.5 mm long; siliques obovoid to globose, pubescent on the exterior 5. *L. douglasii*
3. Ovules 4 or more per locule; styles 1 to 2 mm long; siliques not as above, glabrous to pubescent on the exterior 4
4. Petals (4)5 to 6(7) mm long and about one-half as broad above the middle; petals gradually narrowed below middle to base about 1 mm wide; silicles less than 7 mm long, frequently much smaller, never constricted at replum; stellate trichomes on flowering stems from 0.4 to 0.5 mm wide 2. *L. arctica*
4. Petals (6)7 to 9(10) mm long, nearly as broad above middle; petals abruptly narrowed below middle to base about 1 mm wide; silicles usually more than 7 mm long, frequently constricted at replum; stellate trichomes on flowering stems mostly 0.2 to 0.3 mm wide 4. *L. calderi*

38. *Lobularia* Desv., *nom. conserv.*, J. Bot. Agric. 3: 162, 1815. Type species of genus is *Lobularia maritima* (L.) Desv. (*Clypeola maritima* L.)

1. *Lobularia maritima* (L.) Desv. (NS, sPQ, sON, BC; sporadic garden escape, not persisting except on Vancouver Island, BC.). Introduced from the western Mediterranean region.

39. *Lunaria* L., Sp. Pl. 2: 653, 1753. Type species of genus is *Lunaria rediviva* L.

1. *Lunaria annua* L. (NS, PQ, ON, MB, BC; sporadic garden escape, rarely persisting). Introduced from Europe.

40. *Malcolmia* (L.) W.T.Aiton, *nom. conserv.*, Hort. Kew. ed. 2, 4: 121, 1812. Type species of genus is *Malcolmia maritima* (L.) W.T.Aiton (*Cheiranthus maritimus* L.)

1. *Malcolmia maritima* (L.) W.T.Aiton (ON, rare garden escape that probably does not persist). Introduced from Europe.

41. *Matthiola* W.T.Aiton, *nom. conserv.*, Hort. Kew. ed. 2, 4: 119, 1812. Type species of genus is *Matthiola incana* (L.) W.T.Aiton (*Cheiranthus incanus* L.)

1. *Matthiola longipetala* (Vent.) DC. (= *Matthiola bicornis* (Sm.) DC.), (ON, SK, AB; rare garden escape, probably not persisting). Introduced from Europe.

42. *Myagrum* L., Sp. Pl. 2: 640, 1753. Type species of genus is *Myagrum perfoliatum* L.

1. *Myagrum perfoliatum* L. (PQ, collected by Mr. Brodie at Gallow's Hill, PQ, on July 24, 1895; probably not persisting). Introduced from Europe.

43. *Nasturtium* W.T.Aiton, Hort. Kew., ed. 2, 4: 109, 1812 *nom. conserv.* Type species of genus is *Nasturtium officinale* W.T.Aiton (*Sisymbrium nasturtium-aquaticum* L.) *Typ. conserv.*

1. *Nasturtium crystallinum* (Rollins) G.A.Mulligan (sNT-M, rare). Introduced from Asia.

2. *Nasturtium microphyllum* Boenn.ex Rechb. (NF, PE, NB, PQ, ON, MB, AB, BC). Introduced from Europe.
3. *Nasturtium officinale* W.T.Aiton (NS, NB, PQ, rare; ON, AB, BC). Introduced from Europe.
1. Terrestrial; persistent perennial with thick fleshy roots; cauline leaves entire or nearly so
 1. *N. crystallinum*
1. Aquatic or semi-aquatic with creeping or floating stems that root at nodes; cauline leaves pinnate with remote lateral leaflets 2
2. Mature siliques 1 to 1.5 mm wide, terete or nearly so; seeds mostly uniseriate, moderately reticulate with 100 to 150(175) polygonal depressions on each side 2. *N. microphyllum*
2. Mature siliques 2 to 3 mm wide, compressed contrary to septum; seeds biseriate, coarsely reticulate-foveolate with less than 50 polygonal depressions on each side 3. *N. officinale*
44. *Neslia* Desv., *nom. conserv.*, J. Bot. Agric. 3: 162, 1814. Type species of genus is *Neslia paniculata* (L.) Desv.
1. *Neslia paniculata* (L.) Desv. (AK, YT, NT-M, PE, NS, NB to BC; sporadic except common in grainfields of MB to BC). Introduced from Europe.
45. *Parrya* R.Br., Chlor. Melvill. 195, 1823. Type species of genus is *Parrya arctica* R.Br.
1. *Parrya arctica* R.Br. (YT, rare on Herschel Island; NT-M, N-K, N-F). Native.
2. *Parrya nudicaulis* (L.) Regel (AK, YT, NT-M). Native.
1. Plants glabrous; petals ca 12 mm long; sepals ca 5 mm long; siliques short, 2.5 to 3 cm long, 6 to 7 mm wide; leaves 1 to 3(4) cm long, usually entire 1. *P. arctica*
1. Plants glabrous or with glandular trichomes; petals 12 to 20 mm long; sepals 5.5 to 9 mm long; siliques 3 to 6.5 cm long, 4 to 6 mm wide; leaves 3 to 10 cm long, entire or irregularly serrate or dentate
 2. *P. nudicaulis*
46. *Physaria* (Nutt. ex Torr. & A.Gray) A.Gray, Gen. Illustr. 1: 162, 1848. Type species of genus is *Physaria didymocarpa* (Hook.) A.Gray (*Vesicaria didymocarpa* Hook.).
1. *Physaria didymocarpa* (Hook.) A.Gray (sAB, sBC). Native.
47. *Raphanus* L., Sp. Pl. 2: 669, 1753. Type species of genus is *Raphanus sativus* L.
1. *Raphanus raphanistrum* L. (NF, PE, NS, NB, PQ, ON, SK, AB, BC; sometimes hybridizes with *R. sativus*, especially in BC). Introduced from Europe.
2. *Raphanus sativus* L. (NS, NB, PQ, ON, MB, SK, BC, sporadic escape from cultivation). Introduced from the Mediterranean region.
1. Siliques strongly constricted between the seeds, the body elongated, nearly uniform in diameter for most of its length and longitudinally grooved; petals sulphur-yellow, fading to white; seeds 4 to 12 per silique
 1. *R. raphanistrum*
1. Siliques not constricted between the seeds or only slightly so, the body largest below the middle and tapering toward the apex, smooth or very slightly grooved; petals purplish; seeds 1 to 3(5) per silique
 2. *R. sativus*
48. *Rapistrum* Crantz, *nom. conserv.*, Class. Crucif. Emend. 105, 1769. Type species of genus is *Rapistrum hispanicum* (L.) Crantz

1. *Rapistrum perenne* (L.) All. (SK, has persisted for several years at Grenfell). Introduced from Europe.
2. *Rapistrum rugosum* (L.) All. (ON, very rare and may not persist). Introduced from the Mediterranean region.
1. Biennial or perennial; styles conical, shorter than upper segments of the fruit 1. *R. perenne*
1. Annual; styles subulate, longer than the upper segments of the fruit 2. *R. rugosum*
- 49. *Rorippa*** Scop., Fl. Carniol., ed. 1, 520, 1760. Type species of genus is *Rorippa sylvestris* (L.) Besser (*Sisymbrium sylvestre* L.)
1. *Rorippa amphibia* (L.) Besser (SPQ). Introduced from Europe.
2. *Rorippa austriaca* (Crantz) Besser (MB, SK, AB). Introduced from Europe.
3. *Rorippa barbareaifolia* (DC.) Kitagawa (AK, YT, NT-M, nBC). Native.
4. *Rorippa calycina* (Engelm.) Rydb. (NT-M). Native.
- 5a. *Rorippa curvipes* Greene var. *curvipes* (SK, AB, BC). Native.
- 5b. *Rorippa curvipes* var. *truncata* (Jepson) Rollins (YT, rare). Native.
6. *Rorippa curvisiliqua* (Hook.) Bessey ex Britton (AK, BC). Native.
7. *Rorippa palustris* (L.) Besser (AK, YT, NT-M, N-K, NF, PE, NS, NB to BC). Native.
8. *Rorippa sinuata* (Nutt. ex Torr. & A.Gray) Hitchc. (SK, AB). Native.
9. *Rorippa sylvestris* (L.) Besser (NF, PE, NS, NB to BC). Introduced from Europe.
10. *Rorippa tenerrima* Greene (SK, AB, BC). Native.
1. Plants perennial, often with creeping underground roots or coarse lateral root system 2
1. Plants annual or biennial, usually with a taproot 6
2. Cauline leaves coarsely sinuate-dentate to deeply pinnatifid or lobed, terminal lobes similar to lateral 3
2. Cauline leaves entire or dentate, never lobed 5
3. Siliques globose to subglobose; sepals persistent; pedicels ascending, lower mostly less than 5 mm long 4. *R. calycina*
3. Siliques narrowly oblong to linear; sepals caducous; pedicels recurved or widely spreading and more than 5 mm long 4
4. Pedicels very slender, widely spreading to very slightly ascending; siliques mostly sterile, straight; leaf lobes usually few, cut to the midrib, not regularly paired, sharply toothed 9. *R. sylvestris*
4. Pedicels stouter, most often gently recurved; siliques fertile, usually curved upward; leaf lobes many, not cut to the midrib, regularly paired, entire, rarely with a few teeth 8. *R. sinuata*
5. Cauline leaves auriculate, middle and lower usually clasping; pedicels straight, divaricately ascending, plants terrestrial 2. *R. austriaca*
5. Cauline leaves not auriculate; pedicels weakly sigmoid to gently recurved; plants often aquatic 1. *R. amphibia*
6. Siliques with 4, rarely 6, valves; lower stems usually villous with long slender flattened trichomes; styles thick 3. *R. barbareaifolia*
6. Siliques with 2 valves; lower stems glabrous, hirsute or pilose 7
7. Siliques oblong to somewhat linear, uniform in width and less than 1.5 mm wide, slightly curved upward and inward 6. *R. curvisiliqua*
7. Siliques subglobose or broadly ovate and often somewhat constricted in the middle, mostly more than 2 mm wide 8

8. Plants low, more or less caespitose, mostly less than 1 dm tall; stems slender, several to many arising independently from a taproot crown 9
8. Plants taller and usually with 1 dominant stem from the base, greater than 1 dm tall and most often erect 11
9. Siliques rough with minute papillae, tapering towards apex, not constricted near centre; plants obviously annual 10. *R. tenerrima*
9. Siliques glabrous, only slightly tapered to a blunt apex, constricted near centre 10
10. Siliques ovoid to pyriform, tapering to an acute or somewhat obtuse apex; when fully grown mostly less than twice as long as wide 5a. *R. curvipes* var. *curvipes*
10. Siliques short-cylindrical, truncate at apex; when fully grown mostly more than twice as long as wide 5b. *R. curvipes* var. *truncata*
11. Plants mostly single-stemmed and branched above; siliques subglobose to broadly oblong, not irregular in outline or constricted near centre; stems hispid to glabrous 7. *R. palustris*
11. Plants several- to many-stemmed and branched beginning near base; siliques narrowly ovate to oblong with an irregular margin and often with a constriction near the centre; stems glabrous 10. *R. tenerrima*
- 50. *Schoenocrambe*** Greene, Pittonia 3: 124, 1896. Type species of genus is *Schoenocrambe linifolia* (Nutt.) Greene (*Nasturtium linifolium* Nutt.)
1. *Schoenocrambe linifolia* (Nutt.) Greene (AB, BC). Native.
- 51. *Sinapis*** L., Sp. Pl. 2: 668, 1753. Type species of genus is *Sinapis alba* L.
1. *Sinapis alba* L. (PE, PQ to BC, rare throughout as a casual escape from cultivation). Introduced from the Mediterranean region.
2. *Sinapis arvensis* L. (YT, NT-M, NF, NS, PE, NB to BC). Introduced from the Mediterranean region.
1. Pods or at least beak with white bristly trichomes; beak flattened, curved, equalling to or exceeding length of valves; beak seedless 1. *S. alba*
1. Pods glabrous or with bristly trichomes; beak glabrous, long-conical, straight, slightly winged, one-seeded, considerably shorter than length of valves 2. *S. arvensis*
- 52. *Sisymbrium*** L., Sp. Pl. 2: 657, 1753. Type species of genus is *Sisymbrium altissimum* L.
1. *Sisymbrium altissimum* L. (AK, YT, NT-M, NF, PE, NS, NB to BC). Introduced from Eurasia.
2. *Sisymbrium loesellii* L. (NB to BC). Introduced from Europe.
3. *Sisymbrium officinale* (L.) Scop. (NF, PE, NS, NB, PQ, ON). Introduced from Europe.
4. *Sisymbrium orientale* L. (Vancouver, BC; rare). Introduced from Eurasia
1. Siliques subulate, beaked, borne on stout pedicels closely appressed to the rachis 3. *S. officinale*
1. Siliques linear, terete, beakless, borne on spreading or loosely ascending pedicels 2
2. Siliques 2.5 to 4 cm long on slender pedicels about 1.25 cm long; pedicels much narrower than the siliques 2. *S. loesellii*
2. Siliques 5 to 10 cm long on thick pedicels about 0.5 cm long; pedicels nearly the same diameter as the siliques 3
3. Upper stem leaves with lobes or leaflets threadlike to linear; petals 6 to 8 mm long 1. *Sisymbrium altissimum*
3. Upper stem leaves more or less entire or with lobes or leaflets lanceolate to triangular;

petals 8 to 10 mm long 4. *S. orientale*

- 53. *Smelowskia*** C.A.Mey., in Ledeb., Icon. Pl. 2: 17, t. 151, 1830. Type species of genus is *Smelowskia alba* (Pallas) Regel (*Sisymbrium album* Pallas).
1. *Smelowskia borealis* (Greene) Drury & Rollins (= *Melanidion boreale* E.L. Greene) (AK, YT, NT-M). Native.
 - 2a. *Smelowskia calycina* (Stephan ex Willd.) C.A.Mey. var. *americana* (Regel & Herder) Drury & Rollins (YT, rare; AB, BC). Native.
 - 2b. *Smelowskia calycina* var. *porsildii* Drury & Rollins (AK). Native.
 3. *Smelowskia johnsonii* G.A.Mulligan (AK, Bering Strait). Native.
 4. *Smelowskia media* (Drury & Rollins) G.A.Mulligan (AK, YT, NT-M). Native.
 5. *Smelowskia ovalis* M.E.Jones (BC). Native.
 6. *Smelowskia pyriformis* Drury & Rollins (AK). Native.
1. Caudex mostly branched, slender, stems usually simple, each arising from a separate caudex branch; pedicels divaricate to ascending 2
 1. Caudex mostly simple, stout, more than 5 mm in diameter; stems branched from near base upward, becoming decumbent in fruit; pedicels widely divergent to arcuate 6
 2. Mature siliques oblong, tapering at both ends; sepals caducous; basal leaf bases strongly ciliate with long acicular trichomes 3
 2. Mature siliques ovate to slightly oblong, truncate at base; sepals persistent; basal leaf bases not ciliate 5. *S. ovalis*
 3. Basal leaves entire or very shallowly toothed at the tips; cauline leaves entire or very shallowly toothed 4
 3. Basal leaves pinnately lobed; cauline leaves pinnately lobed; caudex leaves broadly oblong to ovate ... 5
 4. Caudex leaves broadly oblong to ovate, densely covered with long, simple, white-villous trichomes 3. *S. johnsonii*
 4. Caudex leaves linear to narrowly spatulate, densely covered with short dendritic trichomes 2b. *S. calycina* var. *porsildii*
 5. Pedicels widely divaricate, angle of divergence 50° to 80°; siliques broadest above the middle; cauline leaves few-lobed, 2 or 3 per stem 4. *S. media*
 5. Pedicels ascending, angle of divergence less than 50°; siliques broadest at the middle and below; cauline leaves many-lobed, 3 to 7 per stem 2a. *S. calycina* var. *americana*
 6. Basal leaves pinnately cut to the midrib the full length of the blade, *ca* 9-lobed, petals white or cream-coloured; sepals tan, *ca* 1 mm long; siliques elongated, pear-shaped, 5 to 6 mm long, *ca* 2 mm wide 6. *S. pyriformis*
 6. Basal leaves palmately 3- to 5-lobed, lobes short; petals purple; sepals purple, *ca* 2.5 mm long; siliques broadly ovate to oblong or linear, 5 to 19 mm long, 3 to 6 mm wide 1. *S. borealis*
- 54. *Subularia*** L., Sp. Pl. 2: 642, 1753. Type species of genus is *Subularia aquatica* L.
1. *Subularia aquatica* L. var. *americana* (G.A.Mulligan & Calder) B.Boivin (AK, YT, NT-M, N-K, NF, NS, PQ, ON, MB, SK, BC). Native.
- 55. *Teesdalia*** R.Br. in W.T.Aiton, Hort. Kew., ed. 2, 4: 83, 1812. Type species of genus is *Teesdalia nudicaulis* (L.) R.Br. (*Iberis nudicaulis* L.)

1. *Teesdalia nudicaulis* (L.) R.Br. (swBC, sporadically naturalized). Introduced from Europe.
56. ***Thelypodium*** Endl., Gen. Pl. 876, 1838. Type species of genus is *Thelypodium laciniatum* (Hook.) Endl. (*Macropodium laciniatum* Hook.)
1. *Thelypodium laciniatum* (Hook.) Endl. (sBC). Native.
57. ***Thlaspi*** L., Sp. Pl. 2: 645, 1753. Type species of genus is *Thlaspi arvense* L.
1. *Thlaspi arcticum* A.E.Porsild (AK, YT). Native.
2. *Thlaspi arvense* L. (AK, YT, NT-M, NF to BC). Introduced from Europe.
3. *Thlaspi perfoliatum* L. (The only Canadian specimen identified as this species was revised to *Lepidium campestre*).
1. Plants annual, without nonflowering leaf clusters or a branching caudex; basal leaves few and shed before fruiting is complete, or none; siliques 8 to 17 mm wide 2. *T. arvense*
1. Plants perennial, usually with nonflowering persisting leaf cluster and simple to branched caudex; basal leaves numerous; siliques 2 to 3.5 mm wide 1. *T. arcticum*
58. ***Thysanocarpus*** Hook., Fl. Bor.-Amer. 1: 69, 1830. Type species of genus is *Thysanocarpus curvipes* Hook.
1. *Thysanocarpus curvipes* Hook. (BC). Native.