

Changes to key: *Argentina* segregated from *Potentilla* on the basis of morphological and molecular evidence; *Horkelia* and *Ivesia* synonymized within *Potentilla* based on molecular evidence, thereby making *Potentilla* monophyletic.

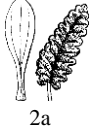
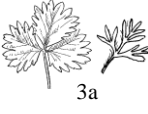


References:

Feng, T., M. J. Moore, Y. Sun, A. Meng, H. Chu, J. Li, and H. Wang. 2015. A new species of *Argentina* (Rosaceae, Potentilleae) from Southeast Tibet, with referenceto the taxonomic status of the genus. *Plant Systematics and Evolution*, Vol. 301(3): 911-921.







Soják J. (2010): *Argentina* Hill, a genus distinct from *Potentilla* (Rosaceae). *Thaiszia Journal of Botany*. 20: 91-97.

ROSACEAE Rose Family







Pls ♀, occ ♀, ♂; fls solitary to ∞, sometimes apert, gen radially symmetric, perig to epig; calyx (4)5(–10)-merous, ± united, often bracteolate between lobes, either adnate to pistil or free and saucerlike to camp or tubular, gen disc-lined; petals (4)5(–10) or lacking; stamens few to ∞, borne with petals on calyx; pistils 1–∞ and simple and free of hypan, or sometimes only 1 but 2–5-carpellate, ovary then partially to completely inferior; fr an achene, follicle, drupe, or pome, sometimes in an aggregation with recep and then dry to fleshy; ann to per herbs, shrubs, vines, or trees, sometimes armed, with alt, basal, or opp, simple to compound, deciduous or evergreen, mostly stip lvs. *Chaenomeles speciosa* (Sweet) Nakai (fl quince), Chinese intro, is an uncommon escape from cult in Seattle but has not naturalized.

		1a Pls ann, bien, or per herbs, erect or creeping	
		2a Lvs simple, margins toothed or entire	Group 1
		2b Lvs lobed or divided	
		3a Lvs palmate or ternate to biternate or triternate	Group 2 , lead 9a
		3b Lvs pinnate to interruptedly pinnate or bipinnate	Group 3 , lead 21a
		1b Pls woody vines, shrubs or small trees	
		4a Pls armed with thorns or prickles; fr fleshy	Group 4 , lead 35a
		4b Pls unarmed; fr dry or fleshy	
		5a Lvs lobed or divided	Group 5 , lead 44a
		5b Lvs simple, margins toothed or entire, unlobed	Group 6 , lead 55a

Group 1 Herbs with simple lvs

	6a Pls erect or loose, creeping, vine-like, not matted, sometimes armed with bristles; fls pink or white; stamens and pistils ∞; fr fleshy, an aggregation of drupelets (blackberry, raspberry), gen edible	Rubus
	6b Pls dense, often forming mats or cushions, with or without erect fl sts, never armed with bristles; fls yellow or pink to white; fr a dry achene or follicle	
	7a Lf margins crenate to coarsely dentate, serrate, or entire; fr an aggregate of plumose achenes, much > sepals; petals white or yellow, 8–12 mm	Dryas
	7b Lf margins entire; fr an aggregate of 3–6 follicles, not plumose, slightly > sepals; petals white to pink, 1–3 mm; pls suffrutescent	
	8a Fls pink, solitary, sessile at tip of compact sts with densely imbricated, persistent lvs 2–4 mm; pls forming dense cushions	Kelseya
	8b Fls white, ∞ in elongate racemes or br racemes, on short peds; st lvs widely spaced, not densely imbricated, deciduous; rosette lvs 4–30 mm; pls forming loose mats	Petrophytum

Group 2 Herbs with ternately or palmately lobed or divided lvs; no obvious woody sts

	9a Pls ann gen < 10 cm, roots delicate; fls apert, axillary, ± hidden by stips	Aphanes
	9b Pls taprooted ann or bien gen > 10 cm, or per with coarse roots or rhizomes; fls gen terminal or scapose, never ± hidden within stips	
	10a Fr fleshy, like a strawberry, blackberry or raspberry	
	11a Fr an aggregation of drupelets, gen edible, blackberry-like, orange, red or black	Rubus
	11b Fr a solitary swollen recep with superficial achenes, strawberry-like, bright red	
	12a Petals white or pinkish; achenes superficial or in small pits, yellow-green to red- or dark brown; fr sweet, strawberry	Fragaria
	12b Petals yellow; achenes superficial, red; fr not sweet	Duchesnea
	10b Fr dry, an achene or follicle	
	13a Lvs ± orbicular or wider than long, shallowly to deeply lobed	



14a Fls apert, yellow-green; stamens 4; lvs shallowly ∞ -lobed, often wider than long; fr a solitary achene enclosed by greenish, sac-like hypan; Eurasian intro; sporadic on both sides Cas in s BC **Alchemilla mollis** (Buser) Rothm.

14b Fls with 5 petals, yellow to white; stamens 50–70; lvs unlobed or shallowly to deeply 3–5-lobed, \pm as wide as long; fr 4–7 achenes partially enclosed in a conic hypan; ID, MT **Waldsteinia**

13b Lvs or lflets longer than wide

15a Lvs palmately lobed or divided

16a Petals and anthers yellow to white; achenes attached to a dry recep that is not spongy; stips conspicuous or not; upland pls **Potentilla**

16b Petals and anthers red-purple to pink; achenes attached to an enlarged, spongy (but not fleshy) recep; stips conspicuous; wetland pls **Comarum**

15b Lvs ternate to biternate

17a Lvs divided into 3 equal-sized lflets

18a Stamens 5, anthers 1-chambered, splitting along a single seam over the top; lflets toothed at tip, margins entire **Sibbaldia**

18b Stamens (5)10–30, anthers 2-chambered, splitting along 2 seams divided by a cross wall at the top; lflet margins gen toothed or lobed **Potentilla**

17b Lvs unevenly divided or biternate

19a Lvs gen > 30 cm; lflets coarse, broadly ovate, 6–15 cm; infl 500+–fld pans of racemes **Aruncus**

19b Lvs 1–4 cm, ternately 2–3 \times dissected into linear segms; infl flat-topped pans or a 5–30-fld raceme

20a Lvs lobed or divided near apex, where ternate or biternate; infl racemose; subalp to alp **Luetkea**

20b Lvs lobed or divided from near base, gen biternate; infl flat-topped pans; low to mont **Chamaerhodos**



Group 3 Herbs with lvs pinnately to bipinnately lobed or divided

21a Fr fleshy, an aggregation of drupelets, gen edible, blackberry-like, orange, red or black; pls armed with prickly sts or not **Rubus**

21b Fr dry, an aggregation of achenes or follicles; pls unarmed

22a Fr or fruiting hypanthium with hooked bristles

23a Fr a solitary achene within a persistent, conic, grooved hypanthium, the apex with rows of hooked bristles; fls \pm sessile in racemes **Agrimonia**

23b Achenes clustered, ∞ , each with a terminal hooked bristle, not enclosed in the hypanthium; fls ped, \pm pan **Geum**

22b Fr or fruiting hypanthium smooth to plumose, without hooked bristles

24a Fls 4-merous, apert

25a Lvs bipinnate or pinnate-pinnatifid; pls taprooted ann or bien; stamens 2(4); fls green **Poteridium**

25b Lvs once-pinnate; pls per from rhizome or caudex; stamens 4 or 12; fls green to white or purple

26a Stamens 12; filaments filiform; lflets gen 1–2 cm; pls ♀ or ♂ with ♂ below ♀ in same spike; fr winged, also cross-ridged, sometimes papillose (20 \times), never hairy **Poterium**

26b Stamens 4; filaments filiform or wide and flat above; lflets gen > 2 cm; pls ♀ -fld; fr winged, without cross-ridges or papillae, hairy or not **Sanguisorba**

24b Fls 5-merous, petals white, yellow, pink, or purple

27a Fr awned or plumose achenes; style 2-parted, the lower sometimes hooked at tip, the upper persisting or not in fr; lflets irreg, the lateral ones gen of different sizes **Geum**

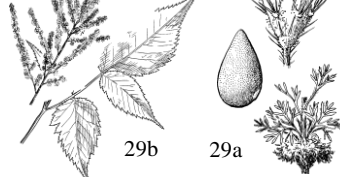
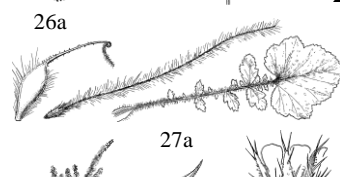
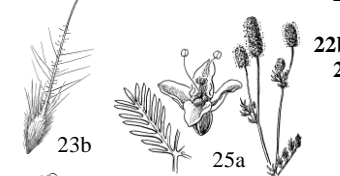
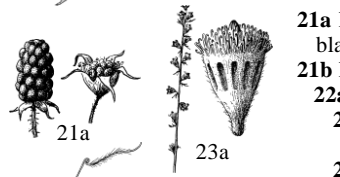
27b Fr unawned achenes or follicles, never plumose; style simple; lflets irreg or all similarly sized

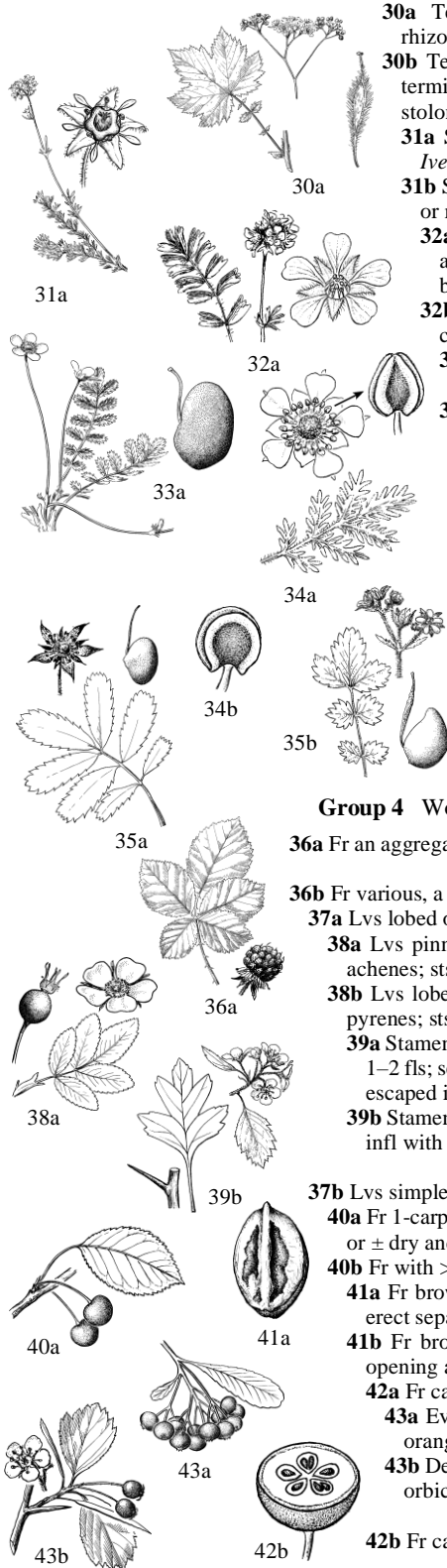
28a Lvs 2–3 \times ternate-pinnate; petals white or with purplish tinge

29a Lvs 1.5–3(–4) cm, dissected into linear segms; sepals bristly and slightly hairy; epicalyx bractlets reduced to bristles at sepal base; fr an achene; infl flat-topped cymes **Chamaerhodos**

29b Lvs gen > 30 cm; lflets broadly ovate, 6–15 cm; sepals glab; epicalyx bractlets absent; fr a follicle; infl 500+–fld pans of racemes **Aruncus**

28b Lvs once-pinnate (lflets occ deeply dissected); petals white, yellow, pink, or reddish





- 30a** Terminal lflet palmately lobed, much the largest, 8–20 cm; pls rhizomatous; achenes 6–7.5 mm, hairy; pls often 1–2.5 m **Filipendula**
- 30b** Terminal lflet unlobed or ternately to pinnately lobed, rarely > 8 cm; terminal and lateral lflets similar sized; pls cespitose, rhizomatous or stoloniferous; achenes 0.7–3 mm, glab; pls 0.1–1 m
- 31a** Stamens 5; pistils in our sp. (1)2–9; petals white or yellow (former *Ivesia*) **Potentilla**
- 31b** Stamens 10–40; pistils in our spp. gen > 10; petals white, yellow, pink, or reddish
- 32a** Stamens 10, erect or slightly incurved (at least in early fls), forming a column or cone, the filaments flattened and broadened towards the base; petals white to pinkish (former *Horkelia*) **Potentilla**
- 32b** Stamens 10–40, ascending to spreading, never forming a column or cone, the filaments filiform; petals white, yellow, or purple
- 33a** Fls solitary and axillary along slender stolons; basal lvs with stip aurs attached dorsally **Argentina**
- 33b** Fls 2 or more, or if solitary not arising from slender stolons; basal lvs with stip aurs attached laterally
- 34a** Styles attached on upper half of ovary and achene; anthers 2-chambered, splitting along 2 seams divided by a cross wall at the top; petals yellow or white **Potentilla**
- 34b** Styles attached on lower half of ovary and achene; anthers 1-chambered, splitting along a single seam over the top; petals yellow or white to pink or purple
- 35a** Petals and anthers red-purple to pink; achenes attached to an enlarged spongy (but not fleshy) recep; style filiform; pls with long, woody rhizomes, often stoloniferous; lvs blue-green; wetlands **Comarum**
- 35b** Petals white to yellow, anthers yellow; achenes attached to a dry recep that is not spongy; style fusiform; pls cespitose; lvs green; uplands and meadows **Drymocallis**

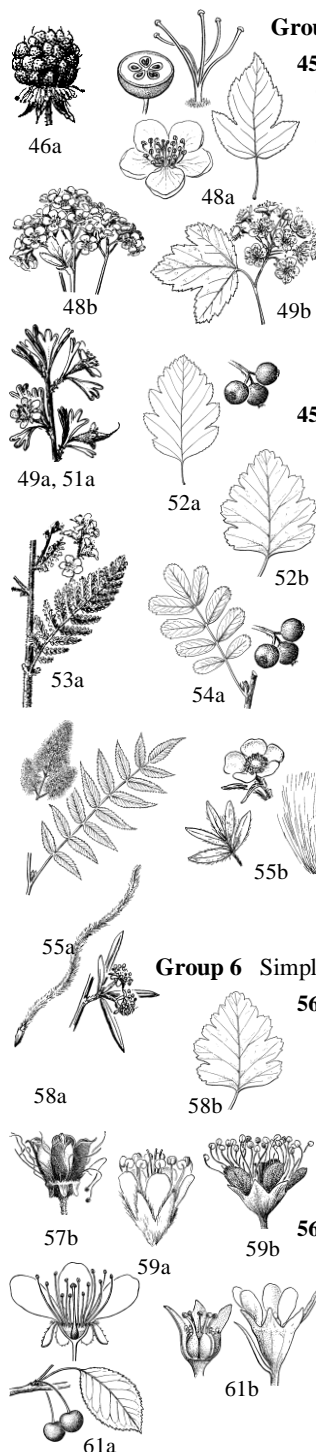
Group 4 Woody pls with armed sts, fleshy fr

- 36a** Fr an aggregate of fleshy drupelets, each with 1 seed, like a blackberry or raspberry **Rubus**
- 36b** Fr various, a multi-seeded pome (like an apple), hip, or berry-like
- 37a** Lvs lobed or divided
- 38a** Lvs pinnately divided; fls with 35–∞ stamens; fr a hip bearing within 6–70 achenes; sts with prickles (outgrowths on st) often present, no thorns **Rosa**
- 38b** Lvs lobed (often some unlobed); fls with 5–35 stamens; fr a pome with 1–5 pyrenes; sts with scattered thorns (modified br) present but no prickles
- 39a** Stamens 25–35; fls 25–35 mm diam; ripe fr brown, 15–40 mm diam; infl with 1–2 fls; sepals erect and persisting on fr, > 1 cm; Eurasian intro; coll once (2004) escaped in Whitman Co, WA (see lead 41a) **Mespilus germanica** L.
- 39b** Stamens 5–24; fls 8–25 mm diam; ripe fr red, black or purple, 8–22 mm diam; infl with 3–50+ fls; sepals erect or spreading, persisting on fr, < 1 cm **Crataegus**
- 37b** Lvs simple, margins toothed or entire, unlobed
- 40a** Fr 1-carpellate, a drupe, bearing a single seed (pit), fleshy (plum, cherry, peach) or ± dry and scarcely fleshy (almond) **Prunus**
- 40b** Fr with > 1 carpel, a fleshy multi-seeded pome, like a small apple
- 41a** Fr brown, 15–40 mm diam, summit with large opening and ± ascending or erect sepals 1.5–3 cm; fls solitary (see lead 38a) **Mespilus germanica**
- 41b** Fr brown, yellow, orange, red, blue, or purple, summit with small or no opening and spreading to erect sepals < 1 cm; fls 6–60
- 42a** Fr carpels hard, thick-walled, bony, fused to seed
- 43a** Evergreen shrubs; lvs oblanceolate to narrowly elliptic or lanceolate; fr orange to red, 3–8 mm diam; stamens 15–20 **Pyracantha**
- 43b** Deciduous shrubs or small trees; lvs ovate to broadly elliptic, obovate, or orbicular; ripe fr red, purple, or black, 4–15 mm diam; stamens 5–24 **Crataegus**
- 42b** Fr carpels softer, thin-walled, cartilaginous, separated from seed



- 44a** Styles separate to base; fr with persisting sepals; fr yellow-green to brown or brownish-purple, depressed globose to globose or pear-shaped; lf margins entire, crenate or serrate **Pyrus**
44b Styles partly fused; fr with persisting or deciduous sepals; fr bright yellow to red, depressed globose to globose; lf margins serrate **Malus**

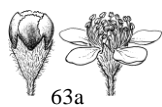
Group 5 Woody pls, unarmed, with lobed or divided lvs



- 45a** Lvs ternately or palmately lobed or divided
46a Fr an aggregate of fleshy drupelets, each with 1 seed, like a blackberry or raspberry **Rubus**
46b Fr a dry achene or follicle, or a multi-seeded pome (like an apple), or berry-like
47a Fr fleshy pomes, 6–70 mm diam; fls 15–50 mm diam; styles fused towards base
48a Lvs often unlobed, except on vigorous shoots; styles 3–5; fls 2–12 in umbels or small corymbs **Malus**
48b Lvs all lobed; styles 2; fls 15–60+ in pans (*S. torminalis*) **Sorbus**
49b Fr dry achenes or follicles, 1–5.5 mm diam; lvs mostly lobed; fls 5–25 mm diam; styles free to base
49a Fr achenes, persisting style plumose or not; lvs 0.3–2 cm, the lobes linear to oblong; fls deep or pale yellow to whitish **Purshia**
49b Fr follicles, persisting style never plumose; lvs 2–8 cm, the lobes wide; fls white to pale pink **Physocarpus**
45b Lvs pinnately lobed or divided
50a Lvs pinnately lobed
51a Lf bls gen cuneate, 1–13 mm wide, usually 3-toothed to 3(–7)-lobed at tip, ± evergreen (drought deciduous); fls solitary; petals yellow to whitish; stamens 17–125 **Purshia**
51b Lf bls ovate to obovate, 5–80 mm wide, often > 7-lobed, winter deciduous; fls 10–100 in pans; petals white to pinkish; stamens 15–20
52a Fr fleshy pomes; styles 2–3 per fl **Sorbus**
52b Fr an aggregate of 5 achenes; styles 1 per ovary, 5 per fl **Holodiscus**
50b Lvs pinnately divided to twice pinnate
53a Lvs pinnate-pinnatifid to twice pinnate, evergreen; fr an aggregate of 4–5 follicles **Chamaebatiaria**
53b Lvs pinnate; fr dry follicles, achenes, or fleshy pomes
54a Fr fleshy pomes, 6–15 mm diam **Sorbus**
54b Fr dry achenes or follicles, < 6 mm diam
55a Lflets 9–25; lvs 14–35 cm; fr an aggregate of 5 follicles, glab to moderately sericeous; fls white; stamens longer than petals **Sorbaria**
55b Lflets 3–9; lvs 0.5–3 cm; fr an aggregate of 30–100 achenes, densely long hairy; fls yellow; stamens shorter than petals **Dasiphora**

Group 6 Simple-ldd, unarmed shrubs or small trees, lf margins toothed or entire

- 56a** Fr dry achenes or follicles
57a Fr 1 or 5 achenes
58a Ovary and fr solitary; achene with plumose style; fls apert **Cercocarpus**
58b Ovaries and frs 5; achenes without plumose style; fls petaloid **Holodiscus**
57b Fr an aggregate of 3–5 follicles
59a Stamens 7–12, staminodes absent; fls solitary; lvs evergreen and often marcescent; pls forming low, dense mounds **Kelseya**
59b Stamens 10–40, staminodes 5–15; fls numerous in pans; lvs deciduous; pls erect, open shrubs **Spiraea**
60b Fr fleshy drupes or pomes
60a Fr 1-seeded drupes, solitary or in an aggregate
61a Lvs toothed; fls ♀; style and pistil 1; stamens 10–30; fr a solitary drupe, sweet (cherry and plum) or bitter, 5–35 mm **Prunus**
61b Lvs entire; pls usually ♂, ♀ (rarely ♀-fld); styles and pistils 5; stamens 15; fr solitary by abortion (or an aggregate of 2–5 drupes), bitter, 5–10(–15) mm **Oemleria**
60b Fr gen several-seeded pomes, berry-like
62a Carpels with a hard, woody, or bony covering protecting the seed; lvs entire



63a

63a Fr orange, red, purple or black, 4–12 mm diam; sepals in fr < 1 cm; petals white and spreading or pink and erect; fls 4–13 mm diam; stamens 8–23

Cotoneaster

63b Fr brown, 15–40 mm diam; sepals in fr > 1 cm; petals white and spreading; fls 25–35 mm diam; stamens 25–40 (see lead 41a) **Mespilus germanica**

62b Carpels with thin, papery, or cartilaginous coverings or partitions in the fr flesh, the seeds thin-walled, ± unprotected; lvs entire or toothed

64a Fr with a shell-like partition forming a dome or hood below the sepals and above the seeds; fr red; infl br, sometimes highly br; lvs evergreen or deciduous

Photinia

64b Fr lacking a domed internal structure; fr red, purple, black, orange, yellow or white; infl a raceme, umbel or corymb, rarely with secondary br; lvs deciduous

65a Ovary apparently subdivided by cartilaginous partitions into 4–10 locules, each bearing a single seed

66a Infls 1–3-fl'd; lvs ± sessile, linear to narrowly elliptic or oblanceolate, leathery; fr yellow to orange or reddish, bitter **Peraphyllum**

66b Infls 4–16-fl'd; lvs petiolate, ovate to obovate, thinner; fr dark purple, white or orange, sweet to insipid **Amelanchier**

65b Ovary undivided or apparently subdivided by cartilaginous partitions into locules, each usually bearing 2 seeds

67a Styles fused from base to ± middle **Malus**

67b Styles free to base

68a Lvs glandless; fr green to brown or yellowish, 8–120 mm; fls 15–45 mm diam; gen weed in lowl **Pyrus**

68b Lvs with elongate, red, appressed glands on midvein above, towards the lf base; fr black, 6–9 mm; fls 12–20 mm diam; e N Am intro; local escape near cranberry farms, Pacific Co, WA **Aronia melanocarpa** (Michx.) Elliott



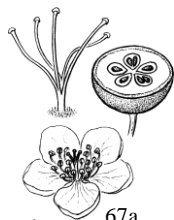
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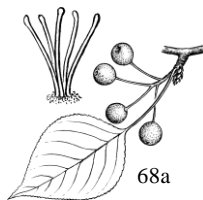
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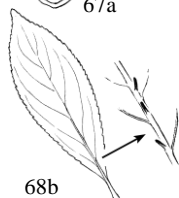
66b



67a



68a



68b