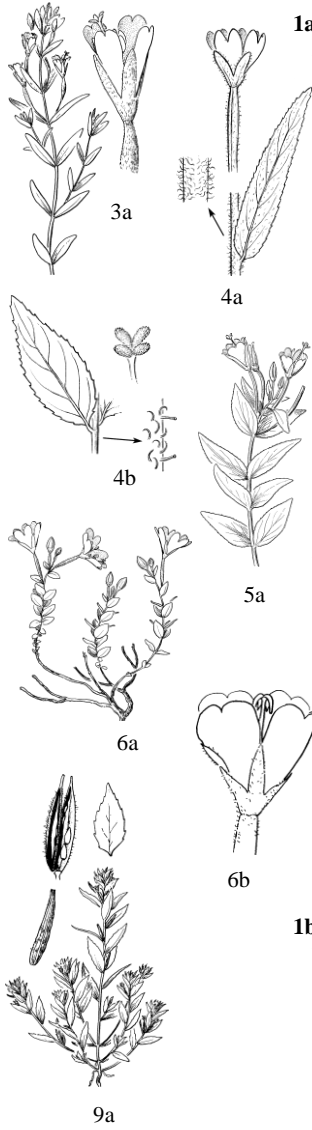


Added image of leaf blade for *E. anagallidifolium*.

Epilobium L. Willow-herb; Willow-weed; Spike-primrose

Infl mostly racemose; fls white or yellow to pink or pinkish-purple (scarlet), hypan short or lacking; sepals 4, erect; petals 4, notched; stamens 8, anthers attached near middle; stigma 4-lobed or oblong-clavate and not lobed; caps 4-celled, linear to fusiform; seeds long-hairy or not at the tip, surface texture often not visible below 30–40×; ann or per herbs, a few somewhat shrubby, commonly spreading by (seldom coll) stolons or rhizomes (also called soboles), tipped with rosettes or turions forming (mostly) below ground in late season; roots or st base of some spp with (seldom coll) sessile turions; lvs mostly opp (alt), or in basal rosettes, entire to dentate, often willowlike. (Gr *epi*, upon, and *lobos*, pod, for the inferior ovary). (*Boisduvalia*, *Zauschneria*).

Epilobium luteum hybridizes occ with, most likely, *E. ciliatum* (*E. ×trelesianum* H. Lév.) and with, prob, *E. hornemannii* (*E. ×pulchrum* Suksd.). Many other infrequent hybrids reported. *E. nummularifolium* R. Cunn. ex A. Cunn. and *E. lanceolatum* Sebast. & Mauri recently coll in King Co, WA (2016); *E. oreganum* Greene found s of our area. Two fireweed spp., the former *E. angustifolium* and *E. latifolium*, are now in *Chamaenerion*. Basal parts and ripe seeds imp for accurate identification.



1a Stigma 4-lobed, or shallowly 4-cleft

2a Petals 4–10 mm

3a Pls woody and br at base; st 1–3 dm; lvs entire, 1–3 cm; caps fusiform, 1.5–2.5 cm; fls slightly irreg; petals shallowly notched, white or pale yellow; seed 2–2.7 mm, broadly low papillose like tiny cobblestones; mid-st uniformly hairy with short incurved hairs; stigma lobes spreading; sandy, gravelly, or rocky shores and slopes; c ID e to w MT and w WY; shrubby w-h. **1 *E. suffruticosum* Nutt.**

3b Pls per, with short ± upright basal shoots bearing rosettes late in season; sts 2–16 dm; lvs denticulate to coarsely serrate, 3–12 cm; caps linear, 3–7 cm; fls radially symmetric; petals deeply notched, pink or pinkish-purple (white); seed 0.8–1.3 mm, papillose, the papillae narrow and pointed or projecting; mid-st uniformly hairy with short incurved hairs or long spreading hairs, or the hairs in lines below the lf

4a Sts densely hairy with spreading non-glandular hairs and, on upper st, short glandular hairs, lvs narrowly lanceolate to oblong-lanceolate; stigma lobes ascending; damp or disturbed ground, tracks, ditches; Eurasian intro; sw BC, e US; New Zealand; hoary or small-fld w-h. **2 *E. parviflorum* Schreb.**

4b Sts sparsely to moderately hairy with incurved, ± appressed non-glandular hairs, upper st also with sparse, spreading, glandular hairs; lvs ovate to oblong-ovate or lanceolate; stigma lobes spreading; disturbed ground, walks; Eurasian intro; sw BC, w WA, Newf; broad-lvd w-h. **3 *E. montanum* L.**

2b Petals 10–24 mm

5a Pls pale yellow; pls erect and rhizomatous; seed hairs brownish; sts 2–7 dm; lvs serrate-dentate, 3–8 cm; caps linear, 4–8 cm; seeds reticulate, oblanceolate; stream banks, seeps, shores, damp slopes; AK to VI, OM, Cas, and n CA; yellow w-h. **4 *E. luteum* Pursh**

5b Petals pink to pinkish-purple (white); pls prostrate and cespitose, or erect and rhizomatous; seed hairs whitish to brownish; seeds papillose

6a Pls ± prostrate, scarcely 1 dm; lvs glab and blue-green, glaucous, 1–2 cm; petals obcordate; cespitose from woody caudex; subalp or alp dry to moist meadows, talus, scree, rocky slopes, ledges; Grant Co, OR, to CA, e to c ID, NV; rose w-h. **5 *E. obcordatum* A. Gray**

6b Pls erect, 2–12 dm; lvs hairy, green not glaucous, 2–8 cm; petals rounded to truncate or retuse; pls with elongate, thick rhizomes, tipped by lf rosettes; low marshes, swales, ditches, shores, disturbed areas; Eurasian intro; s BC s, both sides Cas, to CRG in n OR, e to w ID; great w-h. **6 *E. hirsutum* L.**

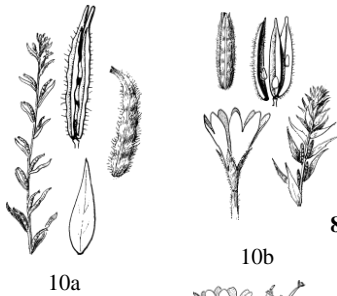
1b Stigma gen entire

7a Pls ann, taprooted

8a Seeds glab, faintly reticulate; fr sessile or subsessile (*Boisduvalia*)

9a Seeds in 2 rows per chamber, fr wall thick, splitting only on upper 1/3; basal brs decumbent; vernal pools, seasonally wet ground, sometimes disturbed, stream beds, shores, sagebr steppe; sc BC s, e Cas in WA, both sides Cas in OR and CA, e to RMS and n Gr Pl; smooth s-p. (*B. glabella*; *E. pygmaeum*, illegitimate) **7 *E. campestre* (Jeps.) Hoch & W.L. Wagner**

9b Seeds in 1 row per chamber, fr wall thin, splitting to base; basal brs absent or ascending



10a



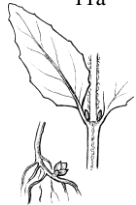
10b



11a



11b



14a



15a



15b



17a



18a

10a Fr beaked, central axis disintegrating; pls spreading hairy; fls not crowded; petals 1–3.2 mm; vernal pools, seasonally wet ground, sometimes disturbed, stream beds, shores; se VI s, both sides Cas, to CA, e to ID, NV; brook or stiff s-p. (*B. stricta*)

8 E. torreyi (S. Watson) Hoch & P.H. Raven

10b Fr pointed but not beaked, central axis persisting; pls glab to appressed hairy; fls gen crowded; petals 3–10 mm; moist to seasonally moist meadows, springs, shores, riparian zones, slopes, roadsides, ditches; s VI s, both sides Cas, to CA and Baja Cal, e to Sanders Co, MT, UT, AZ; dense s-p. (*B. d.*, vars. *d.*, *salina*)

9 E. densiflorum (Lindl.) Hoch & P.H. Raven

8b Seeds with terminal tuft of hairs, smooth, reticulate or papillose; fr raised on ped; lower sts peeling or not

11a Seeds 1.5–2.7 mm, papillose; hypan 1.5–16 mm; pls ± glandular; petals 2–20 mm; sepals 1.2–8 mm; lvs mostly alt; dry or rocky slopes, ridges, open for, seasonally damp meadows, shores, sand, roadsides; c BC s, both sides Cas, to CA, e to Que, NE, NM; intro in S Am, Europe; tall ann w-h. (*E. paniculatum* vars. *jucundum*, *p.*)

10 E. brachycarpum C. Presl

11b Seeds 0.6–1.2 mm, papillose or reticulate (40×); hypan 0.4–1.5 mm; pls eglandular; petals 1.8–5 mm; sepals 1.3–2.5 mm; lvs opp below, alt above; rocky slopes, burns, ledges, open for, dry to wet meadows, paths, roadsides; c BC s, both sides Cas, to s CA, e to Alta, MT, UT, AZ; small-fl w-h. (*E. foliosum*, *E. m.* var. *f.*)

11 E. minutum Lindl.

7b Pls per, with or without taproot

12a Pls prostrate, rooting at nodes; lvs 2–10 mm, green or bronzy, entire, broadly elliptic-ovate; fls erect, solitary from nodes; seed obscurely reticulate, oblong, c. 0.5 mm; New Zealand intro, uncommon garden weed; sw BC, nw WA; bronzy w-h.

12 E. komarovianum H. Lévl.

12b Pls erect or ascending above base; lvs often > 1 cm, often ovate to lanceolate; fls gen in terminal infl; seed papillose or reticulate or ridged

13a Pls essentially glab, glaucous or not, sometimes with a few hairs or glands in infl; seeds papillose

14a Roots with compact, fleshy turions late in season; st lf axils occ bearing bulbils; seed hairs brownish; upper lvs dentate; fls white, aging pink; damp rocky slopes and ledges, shores, wet meadow margins; ours uncommon and scattered, AK s, both sides Cas, to BC, WA, OR, e to Alta, ID; slender-fr w-h. (*E. glandulosum* var. *macounii* in part)

13 E. leptocarpum Hausskn.

14b Roots without turions; st lvs without bulbils; seed hairs white to dirty white; upper lvs entire or faintly dentate

15a Foliage and sts green, not glaucous; stolons, if present, thin, elongate, with narrow lvs, forming mats; fls white or pink; seed 1–1.4 mm; fr 2–5 cm; fr ped 2–6.5 cm; peatlands, wet meadows, stream banks, damp slopes, open for; e BC s, in OM and Cas, to CA, e to MT, WY, AZ; OR w-h. (*E. alpinum* var. *gracillimum*)

14 E. oregonense Hausskn.

15b Foliage and sts glaucous; rhizomes or stolons often coarse and 2–6 cm with withered lvs; fl pink to pinkish-purple (white); seed 0.7–1.3 mm; fr 2–7.5 cm; fr ped 0.5–2.5 cm; wet meadows, shores, seeps, rocky slopes, stream banks, damp for; c BC s, both sides Cas, to s CA, n Mex, e to Alta, MT, WY, UT, AZ; smooth w-h. (*E. g.* subsp. *fastigiatum*, *g.*, vars. *f.*, *g.*)

15 E. glaberrimum Barbey

13b Pls pubescent below infl; seed papillose, reticulate, or ridged

16a St bases creeping, curved, or angled; stolons short, lf, occ forming mats

17a Petals white, or pale pink, 2–5 mm; seeds smooth; mesic to wet meadows, stream banks, talus; circumboreal, s, both sides Cas, to CA, NM, New England; white-fl w-h. (*E. alpinum* var. *l.*, *E. hornemannii* var. *l.*)

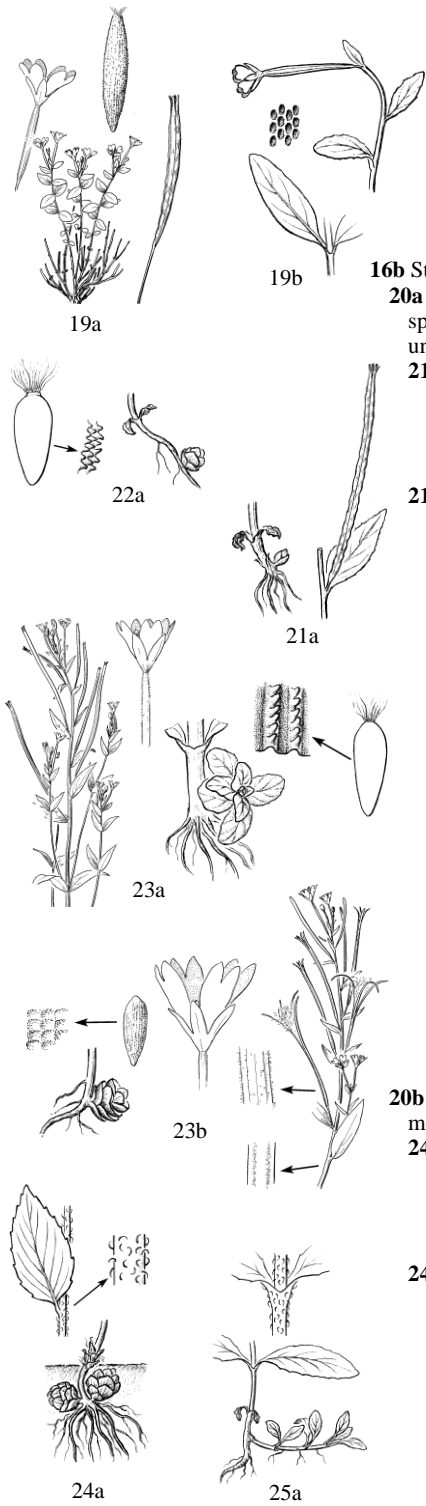
16 E. lactiflorum Hausskn.

17b Petals pink to pinkish-purple, sometimes > 5 mm; seeds reticulate or papillose

18a Lvs narrowly ovate, dentate; sts often 15–30 cm; fr 40–65 mm; pls loosely cespitose; seed 0.9–1.2 mm, papillose or reticulate; fr ped 5–15 mm; springs, stream banks, damp ledges, wet meadows, ridges; circumboreal, s, both sides Cas, to CA, NM, New England; Hornemann's w-h. (*E. alpinum* var. *nutans*); ours subsp. **hornemannii**

17 E. hornemannii Rchb.

18b Lvs narrowly lanceolate, entire or slightly dentate; sts often < 15 cm; fr 17–40 mm; pls cespitose to short stoloniferous or rhizomatous



19a Seeds 1.5–2.1 mm, papillose or reticulate; infl erect in bud; fr ped 2–18 mm; subalp and alp ridges, scree, talus, rocky slopes, damp to wet meadows, shores; AK s, both sides Cas, to CA, e to Alta, MT, and CO; talus w-h. (*E. smithii*; *E. alpinum* vars. *albiflorum*, c.)

18 **E. clavatum** Trel.

19b Seeds 0.7–1.4 mm, reticulate or, rarely, papillose; infl arching or ± nodding in bud (later straightening), fr ped 10–55 mm; subalp to alp slopes and meadows, seeps, stream banks, damp gravel; circumboreal, s to CA, NM, New England; alpine or pimpernel w-h. (*E. alpinum*, illegitimate)

19 **E. anagallidifolium** Lam.

16b St bases erect

20a St hairs, below infl, in vertical lines from lf bases (10×, sometimes sparse); lf margins gen flat, often toothed; pls not stoloniferous, with fleshy underground turions, or lfy basal rosettes late in season

21a Fr peds 1–5 mm; pls with underground, fleshy turions on main root; lf veins ± obscure; seeds papillose (reticulate); damp or wet mont meadows, marshes, shores, stream banks, ditches, roadsides; e BC s, e Cas, to ID, also e CA, e to Alta, MT, SD, and NM, also e Can; RM w-h. (*E. glandulosum* in part)

20 **E. saximontanum** Hausskn.

21b Fr peds 7–40 mm; pls with underground, fleshy turions on main root, or with lfy basal rosettes and no turions

22a Seed papillose, not ridged, though papillae often in rows; lvs mostly sessile, entire or not; infl unbr; root with fleshy turions late in season; lf veins ± obscure; damp to wet meadows, stream banks, shores, seeps, rocky slopes, damp open for; BC s, both sides Cas, to CA, e to Sask, SD, and NM; Hall's or glandular w-h. (*E. glandulosum* var. *tenue*, *E. halleanum*)

21 **E. hallianum** Hausskn.

22b Seed longitudinally ridged, the ridges irreg papillose; lvs with short petioles, serrate; infl br or not; pls with ± sessile basal rosettes or fleshy turions produced late in season; lf veins conspicuous; infl variable; a spp. pair sometimes difficult to distinguish

23a St base forming ± sessile, lfy rosettes late in season, turions absent; lvs ovate to lanceolate; petals 2–14 mm, white to pink or pinkish-purple; wet meadows, riparian zones, shores, marshes, open for, roadsides, ditches, lowl and coastal to subalp; AK to CA, e to Atl; e Asia, S Am; intro in Europe, Australasia; common w-h. (*E. adenocaulon*, *E. c.* subsp. *c.*, *watsonii*, *E. holosericeum*, *E. watsonii* vars. *occidentale*, *parishii*, *w.*)

22 **E. ciliatum** Raf.

23b Upper root (rarely st base) forming plump, scaly turions late in season; lvs ovate to lanceolate; petals 4–14 mm, pink to pinkish-purple or white; damp ground, mont to subalp; AK to CA, e to MT and NM, across s Can and n US to Atl; glandular w-h. (*E. ciliatum* subsp. *g.*, var. *g.*)

23 **E. glandulosum** Lehm.

20b Mid-st uniformly hairy, hairs not restricted to lines below lf base; lf margins flat or inrolled, entire or dentate; pls stoloniferous or not

24a St base or upper root with fleshy, plump, scaly turions; seeds 1.7–2.2 mm, low papillose or sometimes faintly reticulate (40×); wet to dry scree, talus, steep slopes, often limy; subalp to alp; Cas of s BC and n WA, OM, and Alta; seldom coll in our area; Olympic w-h. (*E. glandulosum* var. *macounii*)

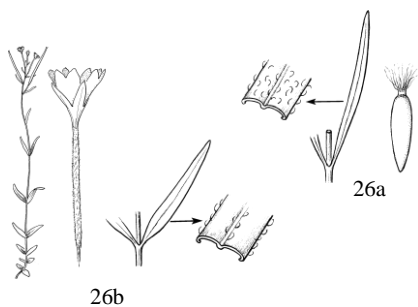
24 **E. mirabile** Trel. ex Piper

24b Pls without turions, stoloniferous

25a Seeds 0.8–0.9 mm, papillose in rows (20×); stolon tips with lfy rosettes, stolons and rhizomes slender to coarse; lf margins flat; fls pink or pinkish-purple; upper lf surface and veins ± glab; disturbed ground, gravel, open for, paths, roadsides, gardens; Eurasian and n African intro; sw BC and nw WA, GL; drwarf w-h.

25 **E. obscurum** Schreb.

25b Seeds 1.4–2.2 mm, papillose (20×), short-beaked; stolon tips with seldom-coll scaly turions, stolons filiform; lf margins often slightly inrolled; fls white to pink; native spp.



26a Lvs (or many of them) with \pm evenly distributed, small, incurved hairs on upper surface, lvs 1–7 mm wide; infl erect or slightly arching in bud, hairy and glandular; peatlands, marshes, wet meadows, lowl to subalp; uncommon in our area; AK s, both sides Cas, to CA, e to Atl; bog w-h. (*E. palustre* var. *gracile*)

26 **E. leptophyllum** Raf.

26b Lvs \pm glab on upper surface, only margins and midrib with small incurved hairs, lvs 2–15 mm wide; infl \pm nodding in bud, appressed hairy, \pm eglandular; wet meadows, shores, peatlands, stream banks, marshes, seeps; circumboreal, scattered s to CA, NM, GL, PA; marsh w-h.

27 **E. palustre** L.