

SUBGENUS: *DASANTHERA*

CULTIVATION OF THE SUBGENUS and EACH SPECIES Table 1

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| [subgenus only] | <i>DASANTHERA</i> (9) |
| [no section] | |
| [no subsection] | |



Penstemon cardwellii

GENERAL DESCRIPTION OF PENSTEMONS IN THIS SUBGENUS

“Long-lived low, shrubby species with good sized flowers and anthers covered in dense, wooly hair. [most] have leathery evergreen leaves. ... Flowers are numerous and showy.”¹

¹ Lindgren, Dale and Wilde, Ellen. Growing Penstemons: Species, Cultivars and Hybrids. 2003. Infinity Publishing Company, 519 West Lancaster Avenue, Haverford, PA 19041-1413. www.buybooksontheweb.com.

Location Pacific Northwest, sw. Canada, Nevada, Montana, Idaho, Alberta

Habitat Mountainous, altitudes of >5000' among rocks or talus; cloudy, cool., abundant rainfall

Foliage most are evergreen

Shape low and shrubby, sometimes forming mats

Leaves broad, often leathery, evergreen, but a few herbaceous; leaf edges mostly toothed, lower leaves on a petiole (leaf stalk)



Penstemon cardwellii

Plant in bloom showy, beautiful; numerous flowers

Corolla (flower)

Color: bright pink, lavender, purple, rarely white forms.

Size: usually large

Shape: expands gradually and moderately; no guidelines

Inflorescence (arrangement of flowers along flowering stalk; all the flowers on the stalk)

Height 2"-15 ¾"

Shape: Short, unbranched, with flowers on pedicels or short cyme, a determinate branch or cluster with 1-6 nodes.



Penstemon cardwellii x rupicola (hybrid)

Cultivation needs southern desert penstemons, or any penstemon blooming in February, March, or April need warm weather prior to bloom date and order to have enough growth to bloom; thus for those growing these species under cover, the cover should not be removed prematurely

Ease of cultivation ²

- few problems in the Northwest (but not Puget Sound area according to Davidson),
- few problems in Northeast if good drainage is provided
- difficult in southeastern Pennsylvania, Zone 6, 800' above sea level with hot and humid summers, even in sand beds (though may seem OK for a year or two and then dwindle; a partially shaded site might improve this outcome)
- appears to be difficult to cultivate in the Midwest (Bennett) (Vesall)
- in arid regions give supplemental water and some part day shade; northern exposure may be best

² Keep in mind, penstemons can be surprising in their ability to adapt to conditions different from their native environs, so be willing to experiment.

Moisture

generous, however this note from the northwest: "...will tolerate moderate summer drought. If you look at climate data, the drought stats actually seem pretty harsh. However evapo-transpiration rates are lower than expected because of cool summer nights and a generally rocky environment. Some, such as *P. barrettiae*, are subject to Black Spot here if we have a warm and wet spring or plant doesn't receive brisk air currents.

Also from the Northwest - be cautious about watering, particularly if drainage is not excellent. My approach is to limit shallow watering to new plants only to encourage deep rooting and less frequent need to water.

Sun

some shade in hotter, more arid climates

Heat tolerance

provide shade

Cold tolerance

may suffer winter kill; protect with pine boughs or polyester cover; protect from winter sun

must protect in winter in Pacific Northwest

Shade

several sources agree species do well in shade, even next to trees; but may not bloom as profusely.

Soil

-neutral to acid soil, but tolerate alkaline in cultivation, adding pine needles may help;
not rich or fertilized soil;

-gravelly soil a benefit as may help hold moisture longer (Bennett);

-Vesall found cultivation of *Dasanthera* in Minnesota to be somewhat difficult; used a mixture of acid, sandy loam and sharp granite grit for drainage and at planting adding a small amount of leaf mold or bagged sheep manure and some bone meal and super phosphate; soil should not be too rich

-in Pacific Northwest they do best in masonry sand (no river silt), sharp gravel or if pumice, with 25% compost added; Ginny Maffitt from Sherwood, OR says "I rarely use my native soil w/any pents, except as underlayment...they don't like loamy clay, so all of mine grow in special amendments."

Drainage

should be good

Climate preference

cool climate, humidity

Longevity

long-lived (*P. montanus* is the exception)

Display recommendations

well suited for the rock garden

Pollination

Most penstemons are visited by several bee species including honeybees and bumblebees. While hummingbirds prefer red penstemons, they commonly are seen at most penstemon species.

Cuttings

late summer (root easily)

Interbreeding**Dasanthera species**

barrettiae
cardwellii
davidsonii

ellipticus
fruticosus
lyallii

montanus
newberryi
rupicola

Table 1. *Dasanthera*

Key
 Column 1 SPECIES: species name; plant height when in bloom; color(s) of flower; fill in lavender  =popular; parenthesis = not reported in cultivation
 Column 3 CULTIVATION SUGGESTIONS:
 Row 1 SIZE OF FLOWER: **very large**= >1 1/2" **large**=1-1 3/8" **medium**= 1/2 - 1" **small**= < 1/2"
 Row 2 GENERAL DESCRIPTION
 Row 3: DISPLAY SUGGESTIONS
 Row 4: WHERE SPECIES HAS BEEN SUCCESSFULLY CULTIVATED OUT OF NATIVE HABITAT

 full sun  partial shade

| Species | Bloom Season in Native Habitat | Cultivation Suggestions | Soil | Moisture | Sun | Native Altitude and Habitat | Distribution | Reported hardiness in cultivation |
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| <p><i>barrettiae</i> [threatened]</p> <p>6-16" x 27.3 wide; always wider than tall</p> <p>purple</p> | <p>April – end of June</p> | <p>very large flower</p> <p>a beautiful contrast of flowers to foliage</p> <p>bloom in racemes (unbranched bloom stalk with each flower on an individual little stem called a pedicle)</p> <p>beautiful foliage year round, leaves are both glaucous (covered with a fine waxy powder) and glabrous (smooth surface, no hairs); forms clumps or is prostrate;</p> <p>protect from winter burn; long lived</p> <p>rock garden</p> <p>cultivated in: MI, NE, ME, WA, Denver, Newf., GB, Germany</p> | <p>acid, neutral, alkaline; top dressing with compost after bloom; in Pac NW: masonry sand, sharp gravel or pumice for all <i>Dasanthera</i></p> | <p>generous if have good drainage, but will tolerate moderate summer drought in the Northwest and none in winter</p> | <p> </p> <p>northern exposure;</p> <p>protect against winter sun**</p> | <p>1300'</p> <p>rocks, west-facing basalt cliffs</p> | <p>Columbia River Gorge</p>  | <p>zone 6</p> <p>leaf damage below 15°</p> |

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| <p><i>cardwellii</i></p> <p>4-8" x mats 1-3' wide</p> <p>purple-pink; rarely rose or white</p> <p>EASY</p> | <p>May-July very large flower</p> <p>flowers are a beautiful; brilliant clear, color which rise gracefully above their foliage;</p> <p>finely, serrated leaves; lovely winter foliage; spreads up to 2' in cultivation; cut back after bloom to keep compact</p> <p>adapts to arid climate; long-lived</p> <p>rock garden</p> <p>cultivated in: most northern states, CO, the Northwest, s. and e. Canada, GB, Scandinavia, European continent; poor outcome in se. PA,</p> | <p>acid – neutral; in OR masonry sand, ¼-1/10" gravel</p> <p>generous if have good drainage, but will tolerate moderate summer drought in the Northwest</p> | <p>☀</p> <p>☀</p> | <p>montane-alpine 4200'</p> <p>cut over areas; openings; wooded slopes; gravelly roadside; quarry sites</p> | <p>WA, OR, n. CA</p>  | <p>-20° F in Denver</p> |
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| <p><i>dauidsonii</i></p> <p>up to 4" violet, lavender, dark purple, blue, rarely pink or white</p> <p>EASY</p> | <p>June- August</p> | <p>large to very large flower;</p> <p>beautiful; all varieties are wonderful</p> <p>evergreen, leathery leaves, mat-forming; long-lived; varieties</p> <p><i>menziesii</i> 1.9" x 5.8" wide, zone 5, serrated leaves, short racemes (unbranched bloom stalk with each flower on an individual little stem called a pedicle)</p> <p>varieties: <i>praeteritus</i> 3.9" x 15.6" wide, zone 4; great variety of colors <i>dauidsonii</i> great variety of colors</p> <p>some seed companies offer a pink form</p> <p>rock garden or trough</p> <p>cultivated in: widely grown, including northern states of U.S., WA, s. Canada, Denver, Norway, GB, continental Europe; poor outcome in se. PA</p> | <p>acid – neutral</p> <p>in Pacific NW: masonry sand, or crushed lava</p> | <p>generous if have good drainage, but will tolerate moderate summer drought in the Northwest</p> | <p>shield from early morning sun</p> | <p>montane-alpine</p> <p>talus, crushed lava, rock outcrops, cracks, crevices; juniper woodlands to timberline</p> | <p>n. CA, OR,  WA, n. NV, BC</p> | <p>zone 4 or 5</p> <p>No damage at 15° F</p> |
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| <p><i>ellipticus</i> 2-6"</p> <p>lavender; purple blue</p> | <p>June-Aug</p> | <p>very large flower another charming and very showy <i>Dasanthera</i>;</p> <p>bloom clusters on racemes (unbranched bloom stalks with each flower on an individual little stem called a pedicle)</p> <p>spreads to form substantial mats; robust, shiny, glabrous (smooth surface) leaves, usually finely serrate, some are evergreen, some deciduous</p> <p>rock garden or trough</p> <p>cultivated in: grown successfully out of region, no details available; share your experiences with us using the Message Board</p> | <p>needs good drainage;</p> <p>acid – neutral; Pacific NW: masonry sand, pumice or sharp gravel</p> <p>generous if have excellent drainage; will tolerate summer drought in the Northwest</p> | <p>winter shade</p>  | <p>mainly alpine; scree; rock slides, crevices;</p> <p>nw. and sw.MT, n. and c. ID, BC, sw. ALB</p>  | |
| <p><i>fruticosus</i></p> <p>6-16" x usually wider than tall</p> <p>blue lavender to light purple; rarely white</p> <p>EASY</p> | <p>May-Aug</p> | <p>large to very large flower</p> <p>one of most attractive; a thick forest of blue to violet flowering racemes (unbranched bloom stalk with each flower on an individual little stem called a pedicle);</p> <p>sprawling but not a mat; wider than high; thick, lance-shaped and leathery leaves; foliage in mats; evergreen</p> <p>needs cold and spring moisture;</p> <p>long-lived;</p> <p><u>varieties</u> <i>fruticosus</i> slightly toothed leaves <i>serratus</i> more mat-like habit; holly-like leaves; <i>scouleri</i> larger flowers, narrower leaves</p> <p>rock garden</p> <p>Cultivated in: Pac NW and BC; poor outcome in PA</p> | <p>acid – neutral; gravelly, humus; adapted to coarse or medium textured soil, not fine textured; pH 6.0-8.0</p> <p>generous if have excellent drainage, but will tolerate moderate summer drought in the Northwest</p> | | <p>3900-8000' possibly higher</p> <p>rocky cliffs to moderately dense forests; among rocks, and gravelly slopes in sagebrush-juniper; drier climate than most</p> <p><i>Dasanthera</i></p> | <p>e. of Cascades in OR, WA, MT, WY, BC</p>  <p>zone 5 to -13°</p> |

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| <p>lyallii</p> <p>12-32"</p> <p>white, lavender</p> | <p>June-Aug</p> <p>very large flower</p> <p>bloom is displayed on an open, spreading panicle (stalk)</p> <p>large clumps, but shrubby only at the base; erect with many stems; long, slender leaves, pale green, deciduous; may sprawl</p> <p>long-lived</p> <p>rock garden</p> <p>Cultivated in : MT, WA, NY, CO, e. Canada</p> | <p>acid - neutral rich, silty loam adapted to coarse or medium textured soil, not fine textured; pH 6.0-8.0</p> <p>some degree of drought tolerance; will tolerate moderate summer drought in the Northwest</p> | | <p>gravelly roadsides, steep rocky banks</p> | <p>n. ID, nw. MT, sw. Alb, se. BC.</p>  | <p>to -23°F</p> |
| <p>montanus</p> <p>5-8" x 9.4" wide</p> <p>blue, lavender</p> | <p>July-Aug</p> <p>large flower</p> <p>not easy; beautiful; a favorite of those who grow it; large lavender flowers in dense spikes (ramemes)</p> <p>as wide as tall; herbaceous; leaves range from green-blue to icy-blue and generally are hairy; herbaceous</p> <p>may bloom for a month, plant it on a north slope</p> <p>rock garden</p> <p>Cultivated in: difficult in Walla Walla WA</p> | <p>mix: turkey grit and peat in crevice garden; or deep gravel on n. facing slope;</p> <p>generous if have excellent drainage, but will tolerate moderate summer drought in the Northwest</p> |  <p>afternoon shade</p> | <p>7900' and higher (alpine)</p> <p>rock scree; talus; cracks and crevices of rocks and talus</p> | <p>n. UT, w. MT, ID, w. WY</p>  | <p>zone 3</p> |

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| <p><i>newberryi</i></p> <p>5-6" x 9.4" wide</p> <p>lavender, rose-red, rose-purple</p> | <p>June-Aug</p> | <p>large flower</p> <p>a favorite among rock gardeners; rose-red flowers;</p> <p>foliage in mats as wide as tall; serrated leaves; cut back after blooming to keep plant compact</p> <p>hardy;</p> <p>best in a cool, dry location;</p> <p>in dry areas; mulch with pine needles or cedar bark;</p> <p>long lived</p> <p>rock garden</p> <p>cultivated in: widely grown, including WA, CO, 20 years in Scotland</p> | <p>acid – neutral coarse sand; adapted to coarse or medium textured soil, not fine textured; pH 6.0-7.5</p> <p>generous if have good drainage; avoid excess in summer; some degree of drought tolerance</p> | <p>☀️</p> <p>protect from winter sun**</p> | <p>6100'</p> <p>talus slopes, outcrops, cracks, crevices</p> | <p>n. CA, s. OR, NV</p>  | <p>zone 5 to -23°F</p> |
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| <p><i>rupicola</i></p> <p>3-4" x 7.8" wide</p> <p>rose, pink, near red, white form</p> | <p>May-July large flower;</p> <p>a favorite in the <i>Dasanthera</i> subgenus</p> <p>dense clumps; vivid deep rose-pink flowers on racemes (unbranched bloom stalk with each flower on an individual little stem called a pedicle); few flowered and compact; over powder-blue foliage</p> <p>shrubby at the base, shrubby and matted; very leafy, leaves are leathery, glaucous (fine waxy powder that is blue or grey) more blue than grey</p> <p>popular in cold and moist climates;</p> <p>long-lived</p> <p>rock garden or trough</p> <p>cultivated in: s. Canada, n. states; high alt. in Rocky Mts. east coast, WA, poor outcome in se. PA GB, Scan, n. Europe</p> | <p>acid – neutral</p> <p>coarse gravel, with small amounts leaf mold and pine needle duff</p> | <p>generous if have good drainage</p> <p>but will tolerate moderate summer drought in the Northwest</p> | <p>☀</p> <p>☀</p> | <p>crevices, in basalt cliffs, rock outcrops</p> | <p>Cascades; s WA, sw. OR, n. CA</p>  |
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♪ Help build this data base. See Reference section for articles on *Dasanthera*



Penstemon cardwellii