

SUBGENUS: *PENSTEMON*

Section: *Penstemon*

Subsection: *Humiles*

CULTIVATION OF EACH SPECIES

Table 24

[subgenus]	PENSTEMON
[section]	<i>Ambigui</i> <i>Baccharifolii</i> <i>Chamaeleon</i> <i>Coerulei</i> <i>Cristati</i> <i>Ericopsis</i> <i>Fasciculus</i> <i>Peltanthera</i> <i>Penstemon</i>
[subgenus]	<i>Arenarii</i> (2) <i>Deusti</i> (3) <i>Gairdneriani</i> (2) <i>Harbouriani</i> (1) <i>Humiles</i> (19) <i>Multiflori</i> (1) <i>Penstemon</i> (17) <i>Proceri</i> (16) <i>Tubaeiflori</i> (1)

GENERAL DESCRIPTION OF PENSTEMONS IN SECTION *PENSTEMON* SUBSECTION *HUMILES*

“Small to moderate-sized plants generally with slender blue flowers that have a long lower lip, in an open inflorescence and have many flower-bearing stems. Leaves are toothed, sometimes barely so.... They are found from high elevations in the Rockies to lower elevations on the west coast. Some are more drought tolerant than others and most will do well with some shade in the southwest. They are very long-lived generally.”¹

Location Rocky Mountains and westward, at high elevations; lower elevations on west coast

Habitat high elevations, open woodland, sagebrush, sub-alpine or alpine

¹ Lindgren, Dale and Wilde, Ellen. 2003. “Growing Penstemons: Species, Cultivars and Hybrids.”

Foliage small to moderate size,

Shape: many stems, suffrutescent (almost a subshrub; dies back to persistent shrubby base)

Leaves: serrate (toothed like a saw) though sometimes barely so; well developed basal leaves (except *radicosus*); much variance in shape



Penstemon pruinosus toothed leaves, verticillaster with its 2 cymes



Penstemon humilis seedling
narrow lanceolate leaves



Penstemon ovatus seedlings ovate leaves

Plant in bloom

Corolla: (flower) narrow, slender, blue or bluish purple
color guidelines inside
size
shape projecting lower lip



Penstemon humilis few flowered verticillaster



Penstemon virens

Inflorescence: (arrangement of flowers along flowering stalk; all the flowers on the stalk): open (as opposed to congested)

height generally small (*humilis* means “low growing ones”)

shape loose, interrupted verticillaster (arising at a node on the stem and composed of 2 cymes – a branched cluster of blooms)



Penstemon pruinosis

Calyx: (sepals on underside of flower, collectively; outermost part of the flower)



Penstemon whippleanus with crowded verticillasters

Penstemon Penstemon Humiles

Cultivation needs There is much variation in this subsection

Ease of cultivation typically not difficult

Moisture drought tolerance varies

Sun full to some shade in the southwest and Mountain states

Heat tolerance moderate

Cold tolerance generally to zone 5 or colder

Shade needs shade or part shade in the southwest; the following species which have recently been separated out from *P. oliganthus*, all need some shade: *oliganthus*, *griffinii*, *pseudoparvus*, *inflatus*

Soil lean, sandy-gravelly

Drainage good drainage important

Climate preference

Longevity long-lived

Display recommendations borders, wild garden, large rock garden, open garden

Pollinated by 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.

Interbreeding yes

Species

<i>albertinus</i>	<i>elegantulus</i>	<i>metcalfei</i>	<i>pseudoparvus</i>	<i>virens</i>
<i>anguineus</i>	<i>griffinii</i>	<i>oliganthus</i>	<i>radicosus</i>	<i>whippleanus</i>
<i>aridus</i>	<i>humilis</i>	<i>ovatus</i>	<i>rattanii</i>	<i>wilcoxii</i>
<i>degeneri</i>	<i>inflatus</i>	<i>pruinosis</i>	<i>subserratus</i>	

Table 24. *Penstemon Penstemon Humiles*

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 Characteristics	Cultivation Needs			Elevation and Habitat	Distribution	Reported cold hardiness in cultivation
			Garden Soil	Moisture	Sun			
<p><i>albertinus</i></p> <p>2.3-6” x 7.8” wide</p> <p>bright blue to pinkish</p> <p>EASY</p>	June- July	<p>medium flower</p> <p>choice plant</p> <p>several decumbent stems (curving or reclining base, erect or ascending tip) are densely packed with fir-like leaves and flowers of ascending spikes with golden beards; darker guidelines; inflorescence narrow to spreading</p> <p>rosette of basal leaves; lanceolate (spear-shaped) to ovate (egg-shaped);bright green and smooth</p> <p>interbreeds with <i>wilcoxii</i> and <i>humilis</i></p> <p>rock garden; long-lived; grows under a variety of conditions</p> <p>cultivated in: RM states, IA, OH, NE, Newfoundland, GB; Walla Walla in full sun</p>	well drained	dry summers		2600-8000’ open wooded areas	<p>se. Alberta, se BC, w MT, se. ID, UT</p> 	zone 4

<i>anguineus</i>	May-June	small flower one to several stems	lean, gravelly neutral to alkaline soil	wet to snowy winters, dry summer in Siskiyou Mts of OR and CA	☀️ to ☀️	4000-6000' openings in woodlands, roadcuts facing south	sw, OR, n. CA 	unknown but probably zone 5
1-3' purple, lavender		3-10 distinctly spaced verticillasters, (two cymes/stems bearing flowers , cymes arise from a node on the bloom stalk)						
EASY		basal rosette unknown rarely cultivated						
<i>aridus</i>	May-June	medium flower few to many stems in a tight clump; 106 loose, few-flowered verticillasters (two cymes/stems bearing flowers , cymes arise from a node on the bloom stalk)	scree, sand beds; well drained soil	drought tolerant, but appreciates supplemental moisture in summer in hot, dry environments	☀️	7300' open, open rocky valleys and plains into mountains; sagebrush, grasslands on hillsides, in scree	MT, ID, WY 	zone 4
2-10" x ≥ 2.7" wide		needle-like leaves linear and grasslike						
intensely blue		long lived trough; small rock garden						
EASY		cultivated in: RM states, MI, MN, IL Newfoundland, Scotland						
<i>(degeneri)</i>	June	medium flower NA	NA	NA	NA	open juniper woodlands; montane meadows	Wet Mountains s Canon City, CO 	NA
16" deep blue								
rare or endangered G-2 imperilled								

<p><i>elegantulus</i></p> <p><1'</p> <p>deep blue, blue-violet</p>	<p>May-June</p>	<p>medium flower</p> <p>few to numerous slender stems; 3-5 distinct, few-flowered verticillasters (two cymes/stems bearing flowers , cymes arise from a node on the bloom stalk);</p> <p>forms clumps; well developed basal leaves, narrow stem leaves that are short and hairy</p> <p>long-lived</p> <p>open garden; dryland garden</p> <p>cultivated in: Puget Sound area; wOR in covered troughs</p>	<p>gritty pumice</p>	<p>regular water;</p> <p>needs winter snow cover; summer thunderstorms</p>	<p>☀</p> <p>if at cool altitudes</p>	<p>5400'</p> <p>open, grassy ridge top and upper slopes to scattered timber</p>	<p>ID, e. OR</p> <p>Wallowa Mts both sides of Hells Canyon</p> 	<p>probably zones 5-6</p>
<p><i>griffinii</i></p> <p>6-15"</p> <p>blue</p>	<p>June-July</p>	<p>small-medium flower</p> <p>not well known; a high country species; may be the Colorado variety of <i>P. oliganthus</i></p> <p>several stems; a branched loose inflorescence (thyse); slender blue flowers with a noticeably white palate/platform on the lower lip of the flower; orange bearded staminode in the corolla; closed or almost closed corolla</p> <p>some cultivation</p> <p>rock garden</p> <p>cultivation in: winter-covered trough in wOR, but few blooms</p>	<p>meadow type or forest duff soils, richer than usual, but quick draining</p>	<p>winter snow pack, August monsoons</p>	<p>☀</p> <p>or</p> <p>☀</p>	<p>6000'</p> <p>open fields, thin pinyon/juniper woodlands</p>	<p>c. CO, n. MN</p> 	<p>mountain temperatures</p>

<p><i>humilis</i></p> <p>3.5-8" x 4.7" wide</p> <p>blue to deep blue-purple</p>	<p>May-July</p> <p>small flower</p> <p>flowers in congested whorls (a ring of ≥ flowers around the bloom stalk, arising from a common node on bloom stalk)</p> <p>compact mat, rosettes of green, spatulate (spatula-shaped) leaves</p> <p>long-lived</p> <p>variety: <i>brevifolius</i> 9x12"</p> <p>rock garden, low border</p> <p>cultivated in: widely cultivated</p>	<p>slightly enriched; forest duff, gravelly soils</p>	<p>winter snow cover; 10-15" moisture annually</p>	<p>☀</p> <p>or</p> <p>☀ pm</p>	<p>4950-11,000'</p> <p>sagebrush, pinyon-juniper, ponderosa, pine forest openings in rocky outcrops; south and west-facing screes</p>	<p>CA, NV, OR, WA, UT, WY, CO</p> 	<p>zone 3</p> <p>to -20°F in Denver 2007</p>
<p><i>inflatus</i></p> <p>2'</p> <p>blue</p> <p>EASY</p>	<p>July</p> <p>medium flower</p> <p>closely related to <i>P. oliganthus</i></p> <p>some cultivation; makes a good display in groups; seven widely spaced verticillasters (two cymes/stems bearing flowers, cymes arise from a node on the bloom stalk)</p> <p>corolla has a golden-bearded staminode</p> <p>poorly developed basal rosette</p> <p>plant in groups</p> <p>cultivated in: unknown</p>	<p>meadow soil or forest duff, richer than usual</p>	<p>drought tolerant, winter snow pack, August monsoons</p>	<p>if in dry area</p> <p>☀</p>	<p>7500-11,000'</p> <p>wooded areas</p>	<p>nc. NM</p> 	<p>hardy</p>
<p><i>metcalfei</i></p> <p>height not reported</p> <p>pale blue-lavender</p> <p>rare</p>	<p>not reported</p> <p>medium flower</p> <p>short inflorescence, few flowered</p> <p>leafy woodland species, similar to <i>whippleanus</i></p> <p>cultivated in: not reported</p>	<p>meadow soil or forest duff, rich than usual</p>	<p>winter snow pack; August monsoons</p>	<p>☀</p> <p>especially PM</p>	<p>7500-9000'</p> <p>woodland</p>	<p>sw. NM only</p> 	<p>hardy</p>

Use compost to replace need for duff.

<p><i>oliganthus</i> 2' blue, blue-purple</p>	<p>late May-Aug</p>	<p>medium flower slender flowers with a white throat and guidelines; flowers widely spaced on several stems</p>	<p>forest duff, but will tolerate sandy, gravelly</p>	<p>winter snow pack; August monsoons; 10-15" annual moisture</p>	<p>part shade </p>	<p>6000-8000' mountain meadows</p>	<p>n. AZ, n. NM, c. CO </p>	<p>hardy</p>
<p><i>ovatus</i> to 25" x 13.7" deep blue to purple EASY</p>	<p>May-June</p>	<p>group; large rock garden medium flower cultivated in: CO long-lived (can be divided); showy several leafy stems bear many flowers in clusters on wide-spreading cymes (one side of a verticillaster) oval, toothed, shiny attractive leaves are evergreen; basal rosette; performs well in many and varied locations in n. U.S.; self-seeds; medium to large rock garden, raised bed cultivated in: n. U.S. and Canada, MO, PA, VA, s. Rocky Mts.</p>	<p>soil with organic material; raised bed for drainage</p>	<p>regular, not continuous if in arid climate; summer drought conditions, wet during winter and spring</p>	<p></p>	<p>3000-6000' damp, rocky openings of woods, sunny meadows</p>	<p>w. of Cascades OR, WA, BC </p>	<p>zone 5</p>

<p><i>pruinus</i></p> <p>4-16" deep blue-purple</p> <p>EASY</p>	<p>May-June</p>	<p>medium flower long-lived, attractive, winter interest; few stems that are very hairy; inflorescence has widely spaced verticillasters (two cymes/stems bearing flowers, cymes arise from a node on the bloom stalk); 5-10 flowers per cyme; guidelines leaves rounded (ovate) to lanceolate (lance-shaped); finely and sharply toothed; stem leaves are lance shaped to triangular attractive evergreen foliage in some locations (not Denver) dryland gardens; large rock gardens, border, featured plant cultivated in: OR, WA, near Denver (first yr bloom); not reported in east or Europe</p>	<p>good drainage; gravel or pumice added to raised beds for excellent drainage</p>	<p>appreciates extra water in arid west; will rebloom if pruned and watered</p>	<p>☀️ in arid west</p>	<p>2100' sagebrush communities; pine slopes from canyons and plains into the mountains</p> <p>dry areas</p>	<p>BC, c. WA e. of Cascades</p> 	<p>to -20°F in Denver 2007</p>
<p><i>pseudoparvus</i></p> <p>4-12" blue to purple</p> <p>being reviewed for RARE status</p>	<p>summer</p>	<p>medium flower charming, not common and rarely available; few stems bearing a few small, upward-facing flowers dark green, broadly elliptic leaves form a basal mat; stem leaves are very narrow in groups cultivated in: unknown</p>	<p>meadow soil</p>	<p>winter snow pack, August monsoons</p>	<p>☀️ or ☀️</p>	<p>9500' Magdalena Mountains</p>	<p>sc. NM</p> 	<p>hardy</p>

Use compost to replace need for duff.

<p><i>radicosus</i></p> <p>8-16"</p> <p>dark blue-purple white throat with guidelines</p>	<p>May-July</p>	<p>medium flower</p> <p>weedy appearing with unremarkable flowers;</p> <p>slender erect stems, usually in a cluster; inflorescence with 2-4 distinct verticillasters (two cymes/stems bearing flowers , cymes arise from a node on the bloom stalk); cymes are 2-5 flowered on fairly long little stems; white within the corolla and distinct guidelines</p> <p>all leaves are those on the stalk, linear to lance shaped</p> <p>name derives from its large roots;</p>	<p>under sage and grassy areas</p>	<p>winter snow pack, very dry otherwise</p>	<p>or</p>  	<p>4600-8200'</p> <p>dry open areas; open woodlands, scattered timber, sagebrush; slopes with sagebrush or pinyon/juniper</p>	<p>Yellowstone area, CO, UT, NV, MT, ID, WY</p> 	<p>hardy</p>
<p><i>rattanii</i></p> <p>to 4'</p> <p>rose-lavender</p>	<p>May-Aug</p>	<p>large flower</p> <p>flowers white-bearded and long lower lip; upright stems; inflorescence (bloom stalk) of 2-7 verticillasters (two cymes/stems bearing flowers , cymes arise from a node on the bloom stalk), 3-8 flowers on each cyme of the verticillaster; wide spreading, branching shape</p> <p>large basal mats up to 2-3' wide; leaves on stems are broad, toothed, glabrous (smooth) and seem to clasp at the stem (clasping)</p> <p><u>varieties</u></p> <p><i>kleei</i> found in CA redwood forests that are drier and grows in se. WA in part-day shade</p> <p>specimen plant; border, wild garden</p> <p><i>var. kleei</i> cultivated in: se. WA; sold by a nursery in CA</p>	<p>humus rich; good drainage</p>	<p>needs moisture, grows in area with heavy rainfall</p>	<p>coast</p>   <p>inland</p>	<p>3000-4500'</p> <p>redwood and Douglas fir forests in humus rich soil; grassy slopes to forest openings and margins</p>	<p>coastal ranges n. CA, w. OR</p> 	<p>zones 7-10 likely to 10°</p>

<p><i>subserratus</i></p> <p>2 ½' variable; purple-violet</p>	<p>late May-July</p>	<p>medium flower</p> <p>stunning; many stems in a tight cluster; 3-10 well-separated verticillasters (two cymes/stems bearing flowers, cymes arise from a node on the bloom stalk) with each cyme having 204 flowers on fairly long little stems (peduncles)</p> <p>basal leaves elliptic and on long slender little stems (petioles); finely serrate; bloom stalk leaves are long and slender and finely toothed;</p> <p>specimen; open garden; wild garden</p> <p>cultivated in: east coast and native habitat; wOR in winter-covered tough</p>			<p>☀</p> <p>☀</p>	<p>3,400'</p> <p>wooded areas, open woods and clearings; partial shade; road cuts, cutover land</p>	<p>e. Cascades WA, OR</p> 	<p>likely to 0°</p>
---------------------------------------------------------------	----------------------	-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	--	--	-------------------	-----------------------------------------------------------------------------------------------------	---------------------------------------------------------------------------------------------------------------	---------------------

Use compost to replace need for duff.

<p><i>virens</i></p> <p>7.8-10" x 7.8" wide light-dark blue</p> <p>EASY</p>	<p>late May-July</p>	<p>small flower long lived; rounded clumps covered with numerous spikes of dainty flowers;</p> <p>mats of glossy, deep green spatulate leaves (spatula shape);</p> <p>some populations in Grand County, CO have clear pink flowers</p> <p>rock garden ; plant in groups of three in small plant border</p> <p>cultivated in: WA, NM, SD, MI, OH, PA, New Eng. to VA, GB; w. OR in winter-covered trough</p>	<p>almost any; well drained; lean soil</p>	<p>almost any</p>	<p>☀ east and Midwest ☀ or ☀ in west</p>	<p>5500-10,500'</p> <p>foothills, acid pine duff</p>	<p>Front Range CO, WY</p> 	<p>zone 3 -20° Denver</p>
<p><i>whippleanus</i></p> <p>8-11.7" x 7.8" wide</p> <p>pale lavender, dark violet, wine red, grape purple or creamy white</p>	<p>late June-Aug, earlier in lower elevation</p>	<p>medium flower "...one of the most beautiful flowers in the genus" (Nold); some populations can have very dark purple, almost black flowers; often one stem or a few, upright; inflorescence has 2-7 loose from the stem but crowded verticillasters; (two cymes/stems bearing flowers , cymes arise from a node on the bloom stalk)</p> <p>basal leaves well developed</p> <p>dryland garden, border, large rock garden</p> <p>cultivated in: CO, MT, MI, NE, OR, GB, Germany</p>	<p>probably almost any soil;</p> <p>in OR, neutral-acid; is long-lived in quarry sand in raised beds</p>	<p>needs moisture; winter snow pack and extra water through the summer; in the Rocky Mountain areas like Denver</p>	<p>☀ or ¾ day shade in arid west;</p>	<p>5000-12,000'</p> <p>aspen groves to alpine tundra; meadows and rocky, open slopes to scattered timber; subalpine and alpine</p>	<p>Rocky Mts: ID, MT, WY, NV, UT, CO n AZ, n NM</p> 	<p>zone 3 -20°F Denver</p>

<p><i>wilcoxii</i></p> <p>to 3' sky blue</p> <p>EASY in northern climates</p>	<p>May-July</p>	<p>medium flower</p> <p>airy, showy; complex species with several forms; inflorescence expands broadly with 10 or more blossoms per cyme of a verticillaster; several slender stems in a clump</p> <p>basal leaves variable in shape from rounded (elliptic) to wider, can be serrate; leaves on stems can be as large as basal leaves</p> <p>hybridizes extensively with <i>P. albertinus</i> and maybe <i>attenuatus</i>; seems to be an intermediate between <i>P. ovatus</i> and <i>P. attenuatus</i></p> <p>against a dark background</p> <p>cultivated in: long-lived in trough in OR; did well and bloomed as a first year seedling in Denver</p>	<p>any loose soil; excellent drainage; best placed on slopes</p>	<p>winter snow pack; few summer thunder storms</p>	<p>☀</p> <p>☀</p> <p>pm</p>	<p>open, rocky sites to fairly thick forest from the valleys and foothills to near subalpine; open coniferous woods; dry environment</p>	<p>e.OR, WA, ID, w. MT</p> 
-----------------------------------------------------------------------------------	-----------------	------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	------------------------------------------------------------------	----------------------------------------------------	-----------------------------	------------------------------------------------------------------------------------------------------------------------------------------	----------------------------------------------------------------------------------------------------------------

Quarry sand: sand that is ground from actual rock, not dredged from creek or river beds. It contains little or no soil, so it is similar to using pumice or other inorganic materials.

For more photos go to:

1. this website, Library tab
2. <http://plants.usda.gov/gallery.html>
3. <http://botu07.bio.uu.nl/spgm-1.4.4/gal/Penstemon/index.php?name=Penstemon%20-%2034k>

♪ Help us build the Cultivation tables; share your experience on our Penstemon Blog.