



The blue flowers in the foreground are *Penstemon ovatus* from the Pacific Northwest. The plants in the background are *P. cardinalis* (red flowers) from the Southwest and *P. grandiflorus* (lavender and purple flowers) from the Midwest. Photo by Larry Deaven.



The shorter plants with white flowers in the foreground are *Penstemon tubaeformis* from the East and Midwest. The taller plants are *P. palmeri* (pale pink flowers) and *P. clutei* (pink flowers) from the Southwest. Photo by Larry Deaven.

The PEEC Penstemon Gardens: Plants from Many Climates Growing in One Place

By Larry Deaven, From *Nature Notes*, Winter 2018

In a previous article, "What Is a Penstemon?" (*Nature Notes*, Winter 2016), Becky Shankland wrote a brief introduction to the genus *Penstemon*. She also explained the rationale behind my idea of creating a penstemon garden at the nature center. At the time that article was written, we had 18 different kinds of penstemons planted in one area; today, we have approximately 125 different kinds of penstemons scattered all around the PEEC landscape, and it seems time to continue to describe the merits of these versatile plants.

There were at least two reasons for establishing a penstemon garden. One was to add some interest and beauty to the grounds around PEEC. The other was to create a showplace for these beautiful plants where Los Alamos gardeners could see possibilities for incorporating them into their home landscapes. The original garden in our parking lot island has now morphed into five distinct gardens: in the island, in front of the building, behind the building, and in two planting beds on the perimeter of the parking area.

Penstemons are new world plants with the vast majority of them found in North America. There are about 280 different species in the genus. Approximate numbers for the geographic locations of different species are as follows: Southwest US and California, 130; Pacific Northwest, 80; East and Midwest, 20; Mexico and South America, 30; and Canada, 20. In the US, the state with the highest number of different species is Utah with 72; New Mexico has 42. This widespread distribution indicates that penstemon species have evolved to grow in appreciably different environments. Consider levels of moisture. Penstemons thrive in areas of the US where average annual precipitation is 40 inches as well as in areas where the average annual precipitation is 10 inches. Also consider temperature: penstemons thrive in areas that never experience freezing temperatures and in areas where the temperature drops well below zero annually. We have representatives from each of these regions and climatic conditions in our penstemon gardens.

One reason for expanding the gardens was to take advantage of different microclimatic conditions created by the presence of the PEEC building. In the island beds, many plants are in full sun for the entire length of the day. On the northeastern side of the building, as well as on the western side, the plants are in partial shade during the hottest part of the day. Some of the planting beds

receive extra water from roof runoff, while others do not, and some of the beds have steep slopes that provide perfect drainage, while others are flat. The walls of the building and the rocks placed in the beds absorb heat during the day and slowly release it at night. Each of these variations in moisture, sun exposure, heat storage, and degree of incline provides opportunities for penstemons from diverse regions to coexist in close proximity on the PEEC grounds.

Currently, we have penstemon species from the Pacific Northwest growing in the beds behind the building where they have a northeast exposure and 4-6 hours of shade each day during the hottest part of the summer. These species include *rupicola*, *cardwellii*, *serrulatus*, *ovatus*, and *euglaucus*. On the west side of the building, we have species from the East and Midwest. They too are in part shade, and they receive extra water from roof runoff. These species include *digitalis*, *hirsutus*, *tubaeflorus*, *smallii*, and *multiflorus*. On the southwestern side of the building, there is an area that is in a rain shadow. Here we have a few species from southern California and Arizona, including *centranthifolius*, *floridus*, *clevelandii*, and *parryi*. In the island planting beds and in the beds adjacent to the parking area, we have approximately 80 species from New Mexico, Utah, Colorado, and adjacent states, and from Mexico. These plants from diverse parts of the country seem to thrive in the environments we provided for them.

In addition to planting species in sites that seemed suited to their native conditions, we deliberately planted some plants from the East and from the Pacific Northwest in the full sun and full exposure to wind and cold of the island beds. Much to our surprise, these plants are also thriving. Apparently, at least some penstemons are quite adaptable to new environmental conditions. So there are examples in the gardens of plants from coastal Washington or Oregon growing side by side with plants native to New Mexico and Utah. Likewise there are plants from Pennsylvania and Minnesota growing next to plants from Colorado. It is too early to know if the plants from other zones will continue to thrive here, either in full exposure to southwest conditions or in the modified conditions close to the building. Nevertheless, it is worthwhile to give any penstemon the opportunity to grow in our gardens. It will be through such attempts that we identify the plants that are especially pleasing and rewarding for our purposes.

So, if you have an opportunity to obtain some penstemon seeds from such far away places as Alaska, Florida, or Mexico, don't reject them because they were grown in a place that seems to be too hot or too cold or too wet as compared to Los Alamos. Plant them and see how they perform in our climate. You may have a pleasant surprise coming your way.