

April 10, 2005

Dr. Noel Holmgren
New York Botanical Garden
Bronx, New York 10458

Dear Noel,

I am working on a status report for *Penstemon bicolor* ssp. *bicolor* and *Penstemon bicolor* ssp. *roseus* for the U.S. Fish and Wildlife Service and the Nevada Natural Heritage Program. I have conducted two field seasons documenting new sites and revisiting old populations. This year will be my last field season. The concern I have is this: I see no morphological differences between the two subspecies except for flower color. I noticed in the Jepson Manual you have treated *Penstemon bicolor* without a subspecies. Was it your intention to lump ssp. *bicolor* and ssp. *roseus*?

In a paper by Shelly et al. 1998 they discovered that *Claytonia lanceolata* var. *flava* has both yellow and white flowers. The yellow and white flowered plants are biotically sympatric. In their study they found that white-flowered forms and yellow-flowered forms of *C. lanceolata* var. *flava* are indistinguishable from each other. This could be the same case for *P. bicolor* ssp. *bicolor* and *P. bicolor* ssp. *roseus*. Enclosed is a copy of this paper.

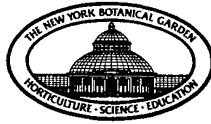
Gina Glenn conducted a pollination study of *P. bicolor* for her master thesis (2003) and found no significant differences in the way the subspecies were pollinated. Enclosed is a distribution map taken from Gina's thesis. Please note the hybrid populations between *Penstemon palmeri* and *P. bicolor*.

Andrea Wolfe et al. 2001 concluded there was insufficient evidence to treat the subspecies as distinct taxa but further study should be made since one area showed some unique alleles.

I know there are times when there is not enough information to make a taxonomic decision, but I would like to get your opinion on what you think about the taxonomy of *P. bicolor*. I do want to say I have admired your work for a very long time.

Sincerely,

Frank Smith
P.O. Box 422
Millville, Utah 84326



THE NEW YORK BOTANICAL GARDEN

May 19, 2005

Frank Smith
P.O. Box 422
Millville, Utah 84326

Dear Buddy,

As you surmised, in my treatment of *Penstemon* in the Jepson Manual I purposely lumped *P. bicolor* subsp. *roseus* into *P. bicolor*. A similar situation occurs in *P. whippleanus* where corolla color in some populations are all of one color form (pinkish-white) or all of the other (dark purple), but there are some populations containing both, and there is no geographical, ecological, or morphological pattern suggesting two distinct entities that diverged from a common ancestor. As with *P. whippleanus*, my guess is that it is likely a one or a few linked-gene phenomenon that is not worthy of taxonomic recognition.

Sincerely,

Noel H. Holmgren
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