

THE NATIVE ORCHIDS OF NEVADA

CAROL SIEGEL

PITY POOR HAWAII... Contrary to its lush image as the Orchid Capital of the world, Hawaii has only three native orchids. Hawaii, like poor Kansas, has the fewest native orchids in the United States. Nevada, on the other hand, with its sizzling, dry deserts and freezing, snowy mountains—the last place associated with orchids—boasts no fewer than fourteen native orchids, two of which occur in two distinct varieties. Stand aside, Hawaii, as we strut our stuff.

It's not easy to be an orchid in Nevada, yet our resilient and resourceful native orchids have learned to make a living in any little microclimate that boasts a little water and a little shade. Professor Wes Niles, curator of the Herbarium at the University of Nevada, Las Vegas (UNLV), relates that under a dripping fountain outside the Chemistry Building clumps of *Epipactis gigantea* started to grow, the seeds carried on the wind. In the drainage of a university swimming pool, additional stands grew and flowered, just a couple of miles from the Las Vegas Strip.

In the desiccating desert of Las Vegas in Clark County, where temperatures can range from 9° to 119°, three orchids are found: *Epipactis gigantea* in many places in Red Rock Recreational Area and elsewhere; *Platanthera dilatata* var. *leucostachys* (a synonym for *Piperia dilatata* var. *leucostachys* according to the Kew World Checklist of selected Plant Families) in Kyle Canyon; and our common species, *Platanthera tescamnis* in several locations in the Spring Mountains including Kyle and Lee Canyons. In Southern Nevada, including Clark, Nye and Lincoln counties, these and an additional four native orchids are found, *Corallorhiza maculata*, *Spiranthes diluvialis*, *Spiranthes infernalis*, and *Spiranthes romanzoffiana*, an amazing seven native orchids. In all, Nevada has these seven, as well as *Corallorhiza striata*, *Listera cordata* (a synonym for *Neottia cordata*), *Listera convallarioides* (a synonym for *Neottia convallarioides*), *Platanthera sparsiflora*, *Spiranthes porrifolia*, *Piperia unalascensis*, and the variety *Platanthera dilatata* var. *albiflora* (synonym for *Piperia dilatata* var. *albiflora*), and *Platanthera stricta*, 14 in all. All our orchids are "terrestrial," that is, they grow in the ground rather than clinging to the bark of a tree.

An orchid was considered to be in Nevada if it was listed in herbaria (dried plant and information repositories) at UNLV and the University of Nevada, Reno (UNR) or if it was listed as being an orchid from Nevada in the *Flora of North America: North of Mexico*, Vol. 26, 2002, Luer's *Native Orchids of The United States and Canada*, Correll's *Native Orchids of North America*, and/or Brown's *The Wild Orchids of North America, North of Mexico*. There may be other orchids in other counties, but we thought that this was a reliable start to cataloging the orchids of Nevada.

Corallorhiza maculata

Leafless, flowers heavily-spotted, devoid of green, this odd orchid gets its nourishment solely by being parasitic on its fungi hosts. This is an unusual orchid that doesn't look like most people's idea of an orchid. Known as the "spotted coral root," its fungus-infected roots have a knobby appearance like pieces of branched coral, and its three-lobed white lip, and often its sepals, petals and column, are dotted with reddish to purplish spots. It mooches off other living things its whole life. It is known as a "mycotrophic plant" because it relies on a special relationship with mycorrhizal fungi for its food. All orchids start their lives dependent on fungi for food since orchid seeds have no endosperm or food tissue for their growing embryos. The little seed must land on the fungi that serve as its nanny providing food. As most orchids grow, they develop leaves and become self-supporting. *Corallorhiza maculata*, however, is like a teen-ager who never leaves home. It continues to feed off its fungi for food throughout its whole life. Without photosynthesis, it has no need for leaves or chlorophyll, and the leaves are reduced to tiny sheaths on the flower stem.



Corallorhiza maculata is a parasite feasting on its fungal hosts.

The plants are devoid of green and exhibit, instead, gay and attractive shades of brown, red and yellow. The strangely-shaped plants are just rhizome, stem and flowers, and appear above the ground to bloom. The plants usually grow in dry, open forest between 6,900 and 10,000 feet in the decaying leaf litter, although they are found in some moist environments too. Because of their delicate relationship with their fungi, transplanting them from the wild is out of the question, even if it were legal.

This orchid is a favorite in folk medicine, used to break fevers by causing sweating. The Paiute and Shoshone Indians of Nevada made a tea to build up the blood in pneumonia sufferers.

Corallorhiza striata* var. *striata* and var. *vreelandii

Corallorhiza striata, with its riot of stripes, is easy to tell from all other coral-roots. About 16 inches tall, *Corallorhiza striata* bears more than 45 heavily-striped flowers on leafless stems, each flower little more than 1/2 inch across. Like all coral-roots, it never produces its own food. A parasitic wasp pollinates this most striking and largest-flowered coral-root.

In Nevada, the varieties "*vreelandii*" and "*striata*" have been noted in the *Flora of North America*. Variety *striata* is larger, brown to reddish-brown with sepals and petals which have three to five reddish-to-brown

veins and lips over seven mm. Variety *vreelandii*, with a light-tan to yellowish base color and dull-brown stripes, is slightly smaller and less brightly colored than *striata*. Different color forms of *Corallorhiza striata* have been given forma names — *Corallorhiza striata* f. *eburnea* (var. *striata*, the purple, brown form) and *Corallorhiza striata* f. *flavida* (var. *vreelandii*, the yellow / white form)

Blooming season is from May to July, and individual plants do not bloom every year. In a study lasting 29 years on a single colony, the number of blooming plants varied from 0-155. In four of the years, there were NO blooming plants at all.

Epipactis gigantea

In May of 2000, over fifty orchid-loving adventurers from the Greater Las Vegas Orchid Society hiked into the hills of Red Springs in the Red Rock Recreation Area to see our native orchid, *Epipactis gigantea* with Dr. Patrick Leary, Chairman of Biology at Community College of Southern Nevada (CCSN). As we hung over the side of the cliff, we had the thrill of seeing dozens of these orchids, lips quivering in the breeze, for the very first time. In the shade of the sandstone cliff by a spring wetting the earth, this little orchid had found a tiny, hospitable microclimate in which to flourish in the desert.



Corallorhiza striata is a leafless orchid.



Epipactis gigantea

Epipactis gigantea is sometimes known as the “stream orchid” because it loves to grow in wet places from sea level to 7,500 feet. It is found in bogs, hot springs, road cuts and wet cliff faces. How strange to find it in the Mojave Desert with only 2-4 inches of rain a year! It is the most common native orchid in California and occurs all over Las Vegas where there is a little water—First Creek, La Madre Spring, Ash Spring, Pine Creek, Icebox Canyon, Spring Mountain Ranch, Sandstone Spring, and Blue Diamond to name a few. Springs in Blue Diamond are being pumped dry, and there is worry that the *Epipactis gigantea* may not survive there. The orchid is pollinated by a syrphid fly. The aroma of the orchid supposedly smells like the honeydew smell given off by aphids, which are the food supply for the syrphid fly larvae. Fooled by little projections on the orchid that look like masses of aphids and by the sweet smell, the syrphid fly lays its eggs on the orchid, inadvertently pollinating the flower in the process. Since there are really no aphids—just a trick, the poor little hatched larvae are doomed to perish. *Epipactis* comes from an ancient Greek word used by Theophrastus in 350 B.C. for a medicinal plant. *Gigantea*, of course, means gigantic, although neither the plant nor the flower is gigantic. The plant grows to about three feet high, with 12-20 flowers per inflorescence. The flowers are about 1.5 to 2 inches across and usually face in the same direction. The sepals are dark green, and the lip is usually red, three-lobed in the middle, with yellow lateral lobes. Part of the lip is elongated and quivers in the breeze, hence its other popular name, the “chatterbox orchid” for its moving lips! The

plant has ten or more green, alternating leaves, which die back to the ground in the fall. Come winter, you don't even know the orchid is there. Indians took a medicine made from the fleshy roots for internal use when they felt ill. Other Indians were said to drink a similar concoction to combat mania and severe illness.

***Listera convallarioides* (a synonym for *Neottia convallarioides*)**

This is one of those beauties that requires a magnifying glass to truly appreciate. *Convallarioides* means “like lily-of-the-valley” which it supposedly resembles. *Listera convallarioides* is easy to tell apart from *L. cordata* since the lip of the *convallarioides* is shallowly tri-lobed, and the *cordata* is deeply forked. The whole genus *Listera* was named in honor of Martin Lister, an English botanist and scientist. It is a worldwide genus of 25 species, eight growing in the United States, and two in Nevada. Hard to find because of its small size, it reaches to just ten inches, carrying over 25 small green or sometimes purple flowers. Some have said that the flower shape looks like a prehistoric bird or a mayfly. This orchid also has a special pollination device, a little projection from the rostellum that acts as a trigger firing pollen masses at visiting insects.

***Listera cordata* (a synonym for *Neottia cordata*)**

An adorable, tiny plant just four - ten inches tall, it bears up to 30 flowers whose lips are deeply forked for half its length. The little flowers look like tiny elves, with forked lip looking like legs, tiny horn-like projections that look like arms, and petals and sepals spread-



Epipactis gigantea grows in many places in Las Vegas wherever there is a little water.



Epipactis gigantea, often known as the “stream or chatterbox orchid.”



Listera convallarioides (a synonym for *Neottia convallarioides*) resembles a mayfly or little prehistoric bird.

ing over the lip like a hat.

This orchid is not listed as occurring in Nevada in the *Flora of North America*, but there is a herbarium sample found in the herbarium at UNLV. The orchid is found in Snake Creek in the Snake Range of White Pine County. *Listera cordata* is part of a genus commonly called "twayblades" because it always has two leaves. With its heart-shaped opposite leaves halfway up its stem, it has earned the title "heart-leaved twayblade."

Fungus gnats, attracted by odor and nectar, visit the orchid, triggering three pressure-sensitive hairs that eject a droplet of glue on the unsuspecting gnat. The pollinia are dropped into the glue and it hardens like cement. The fly is stuck with the pollinia, hopefully carrying it to another flower!!

Piperia unalascensis

The species is named for Unalaska, the Aleutian Island where it was first found.

Commonly called "Alaskan *Piperia*" or "slender spire orchid," the small, delicate flowers are carried in a spire that varies from 6-24 inches. The genus was named in honor of C. V. Piper of the Agricultural Experiment Station at Pullman, Washington. In the fall, *Piperia* forms new underground roots, one of which later becomes tuberous. The basal leaves appear in late fall to spring, and the flower spikes arise from late spring to early summer. The leaves yellow and fall away before the flower opens and the flowers last from four to six weeks.

Nocturnally fragrant, yet lingering during the day, the flowers attract moths with their unusual smell,

sometimes described as musky, soapy, or honey-like.

Interestingly, when the flower first opens, the lip is held tight against the column forcing its pollinator to remove pollen only in the search for nectar in its spur. Aging over time, the lip moves downward, exposing the nectary and allowing pollen deposition. This clever strategy effectively prevents self-pollination by not having the male and female parts available at the same time. Over the years, the plant has been classified with *Habenaria* or *Platanthera*. Plants in all these form underground tuberous, fibrous roots, but *Piperia* has round swellings and *Platanthera* has elongated swellings. *Piperia* has leaves near the base, and *Platanthera*, in Nevada, has them scattered along the stem. In other places, the leaves are frequently basal.

Platanthera dilatata var. *albiflora* and var. *leuchostachys* (a synonym for *Piperia dilatata* var. *albiflora* and var. *leuchostachys*)

"The Bog Candle," "Scent-Bottle," or "White Bog Orchid," as it is commonly called, is a small white stalk of fragrant little flowers, maybe eight inches high and looking just like a little white candle. The first time I saw this orchid I was on the island of Newfoundland in Canada. They were just growing wild in the streets. They grew along the roadsides, in front of houses, in ditches, in forests, under picnic tables—just everywhere, hundreds and hundreds of them. They also grow in many counties in Nevada. UNR says it has numerous herbarium samples of it. It grows here with a wide range of heights, some plants having as many as 248 flowers.



Listera cordata (a synonym for *Neottia cordata*) is a "heart-leaved twayblade."



Piperia unalascensis was named for the Aleutian Island where it was first found.



Platanthera dilatata has fragrant flowers.



Platanthera sparsiflora is easily recognized by its green color and large hood.

There are two varieties of *Platanthera dilatata* in Nevada, var. *albiflora* and var. *leucostachys*, with var. *leucostachys* being treated sometimes as a distinct species. Both have spurs carrying nectar, providing a reward for pollinators. The varieties are based on differing spur lengths, reflecting different pollination pressures. The long spurs on the flowers and nocturnal fragrance of var. *leucostachys* means it is specialized for moth pollination. The short spur on variety *albiflora* suggests a broad range of pollinators including the bee or fly. Variety *leucostachys* (which means "white spike" in Greek) is easy to recognize because its flower is always white. The flowers are very fragrant, smelling a lot like cloves. The petals trap the emerging lip and newly opened flowers have a loopy look. The upturned lip offers access to only one side of the lip, and the visiting insect can only take one pollinium per visit. This strategy ensures that the flower will have more pollinators carrying genetic material, supposedly increasing the chances for success. The plant blooms from May to September and has a wide tolerance for surviving at different elevations. This orchid has been used in folk medicine by the Thompson Indians of British Columbia. "Young men use it as a wash to make them lucky, good looking and sweet smelling. Women use the wash to gain a mate and have success in love. Both sexes use it to obtain riches and property. When they dig up the plant, they chant, 'Friend, I want wealth and



Platanthera stricta offers nectar on the flower.

much property.' " Northwest Indians and Eskimos eat the tuberous roots that supposedly taste like potatoes. (Coffey, p.328)

Platanthera sparsiflora

Flowering from April to September in wet meadows, marshes, stream banks and seeping slopes, its common name is "Sparsely flowering bog orchid." It often produces many green to yellowish green very fragrant flowers and is sparsely flowering only in comparison to *Platanthera dilatata*. Flowers that were originally identified as *P. sparsiflora* in Mummy Springs at Mt. Charleston were later identified as *P. tescamnis*. *Platanthera sparsiflora* occurs around Lake Tahoe. It is easily recognized by its green color and large column, which fills half the "hood" formed by the sepals and petals. This is a narrow flower that likes high elevations and wet ground. It is thought to be pollinated by a moth, the pollinia attaching to its proboscis.

Platanthera stricta

Sometimes called *Platanthera saccata*, because of its "saccate" or purse-shaped spur, this two-to-three foot orchid can have sixty green flowers, sometimes with a purple tinge. As a reward to the variety of insects that visit the flower, the orchid offers droplets of nectar on the flowers as well as nectar inside the spur. Blooming from May to early August in Elko County at 7500 feet,

it is called the "Slender Bog Orchid." It is not mentioned in the Flora of North America as occurring in Nevada but is mentioned in Correll's *Native Orchids of North America* and Luer's *Native Orchids of the United States and Canada*.

It is pollinated by a whole group of insects with short mouthparts. It has a whole bouquet of treats to attract pollinators—floral fragrance, a sparkling, shimmering appearance of the inflorescence, extra floral glucose to eat on the flower raceme, nectar in a spur, and a pollination chamber that can accommodate a variety of insects.

Platanthera tescamnis

A new species described in 2006 by Charles Sheviak, our fourteenth native orchid is a look-alike sister of *Platanthera sparsiflora*, from which it seems to have evolved. There are some small differences in the sexual apparatus between the two species with different proportions and configurations of the columns. The new species is distinguished by a small column with rostellum lobes that position the viscidia above the orifice of the spur. *Platanthera tescamnis* gets its name from "tesca" meaning "desert" and "amnis" meaning "swift-flowing river," an allusion to the species' typical habitat along arid-region streams. Like all *platanthera*, it grows new roots each season. Found throughout the Spring Mountains and the Great Basin, this native orchid likes lower elevations and drier habitats than its sister orchid. Blooming from late June to early August, this tall, erect orchid is a hooded beauty.

Spiranthes diluvialis

Of conservation concern, this rare orchid is an amphiploid species derived from the ancient hybridization of *S. romanzoffiana* and *S. magnicamporum*. An amphiploid contains the full complement of chromosomes from each parent instead of half the number as is usual in hybrids. Therefore, because *S. romanzoffiana* had 44 total chromosomes and *S. magnicamporum* had 30 then the resultant amphiploid *S. diluvialis* had 74 chromosomes resulting in a new species. This orchid blooms in July and August, in moist to wet meadows, stream banks, and marshes. Although it has been found in Colorado, Idaho, Montana, Nebraska, Utah, Washington and Wyoming, it is very rare in Nevada and, until recently, had not been seen since the 1930's! It is pollinated by long-tongued bees like bumblebees who seek out the nectar.

While at the U.S. Fish and Wildlife Service, James Coyner, a *Spiranthes diluvialis* recovery team member, became interested in the orchid after reading Charles Sheviak's work. He fervently and unsuccessfully searched for it in Nevada for many years. On a magnificent summer day, July 30, 2005, the Greater Las Vegas Orchid Society joined Jim on a re-discovery of this lost orchid. We drove three hours to the quaint Nevada farming community of Panaca. As we approached a mile north of Panaca on the county road, we could hear children splashing and yelling as they jumped and played in the beautiful warm waters of Panaca Spring. The large and constant flow of sweet, warm water from the spring creates a desert oasis in Meadow Valley.



Platanthera tescamnis is a new species described in 2006 by Charles Sheviak.



Platanthera tescamnis, plant habit.



Spiranthes diluvialis, rediscovered after more than seventy years

Flowing from a fault contact between alluvium and Paleozoic limestone, the water is 85 degrees and flows from 1,800 to 6,227 gallons per minute.

Surrounding the spring is a marshy meadow with gorgeous wildflowers in full bloom. The riparian community included lizard's tail, alfalfa, horsetail, sedges, tall grasses, cattails, sunflowers, and large stands of tall orange Indian paintbrush. The earth was squishy under our feet at the edges of the spring. Suddenly Jim and our Las Vegas club searchers excitedly stumbled upon a large population of at least 75 *S. diluvialis* specimens, some with seed pods already developing. Imagine our delight at finding this treasure thought lost after more than 70 years! Our club had made a real contribution to native orchids.

Spiranthes diluvialis is found growing in riparian environments at elevations of 4000-7000 feet in full sun with companion plants of equal or slightly taller height. The earth at the base of the plant is always damp enough to form a mud ball when squeezed. *Spiranthes* refers to the spiral rows of flowers and *diluvialis* comes from diluvium, flood or deluge, and so is "of the flood," alluding to the species' habitat. It is uncommon in arid areas and is thought to have originated in a Pleistocene (1.8 million - 11,000 years ago) pluvial period (a time when there was more rain in a dry land area than at present). It is commonly called Ute's Ladies'-tresses, "Ute's" because many populations were found in the Uinta Basin of Utah on and around the Ute Indian Reservation, and "Ladies'-tresses" because the arrangement of the floral bracts looks like braided hair. It blooms in July and August and seeds are shed in September. New growth begins in late September or early October, emerging from the base of the plant as a sympodial growth having a green rosette form. The new growth overwinters and develops the flowering plant the following year if all factors are favorable. Ute's Ladies'-tresses looks like a tall white birthday candle, up to 20-inches tall, growing from tuberous roots. The flowers are arranged in a spiral around the spike at the top of the stem. Its sepals and petals are oriented perpendicular to the stem, and the orchid has ringent (widely spread lips) flowers. The upper stem is somewhat glandular-pubescent. The persistent leaves are mostly restricted to the base of the stem and are reduced to bracts further up on the stem.

Spiranthes infernalis

Ash Meadows in Nye County is an unlikely place to find an orchid. Hot and dry, just nine miles from Death Valley Junction, the ground is so thickly covered with salt that it looked like winter snow. Fed by a vast network of underground springs, the ground bounces like foam rubber when you walk on it. On June 25, 2003, seven hardy Greater Las Vegas Orchid Society conservation enthusiasts braved the intense summer heat to participate in the orchid count of *Spiranthes infernalis* at Ash Meadows National Wildlife Refuge.

Spiranthes infernalis is found there and nowhere else



Spiranthes infernalis is only found at Ash Meadows in Nye County.

in the world. We got up at dawn and drove 90 miles to make sure that the population of endemic orchids was safe. Invasive weeds, like the Russian knapweed (*Acroptilon repens*), a noxious perennial herb, probably introduced in hay from Eurasia, now covers over 500 acres where there were none in 1990. The fear is that the introduced weeds will squeeze out this rare and exotic orchid. The 22,000 acres of meadows are protected as a national wildlife refuge because they contain a greater concentration of unique species than any other location in the United States—13 threatened and endangered species and at least 24 plants and animals found nowhere else in the world, including our orchid. It is one of the few natural desert oases in the Southwest, providing habitat for 220 species of migratory birds. *Spiranthes* come from two Greek words meaning "coil" and "flowers" for the coiled or spiraled flower spikes of this genus. *Spiranthes infernalis*, Ash Meadows ladies'-tresses, was named in 1989 by Charles J. Sheviak and is endemic to the alkaline, moist soils of Ash Meadows, meaning it is ONLY found there, making it very special. It is similar to other *Spiranthes* with many small, white, spiraling orchid flowers. In 1990, populations world-wide were estimated at between 730-1160 individuals. Until last year, global counts for species were around 1400 individuals. Surveys in 2002 estimated 10,000 individuals and in 2003, happily, the survey we took part in found 13,500 plants.

Spiranthes porrifolia

"*Porrifolia*" comes from two Latin words meaning "leek" and "leaves," referring to the color of the leaves. The beautiful flower spike has multiple spirals of over 100 creamy yellow flowers. Thoreau wrote of *Spiranthes*, "Its crystalline white flowers are arranged in a dense spiral cone like the thread of a screw." Restricted in range, it is limited to the western parts of the United States, mainly California, Oregon and Washington, giving its common name of "western

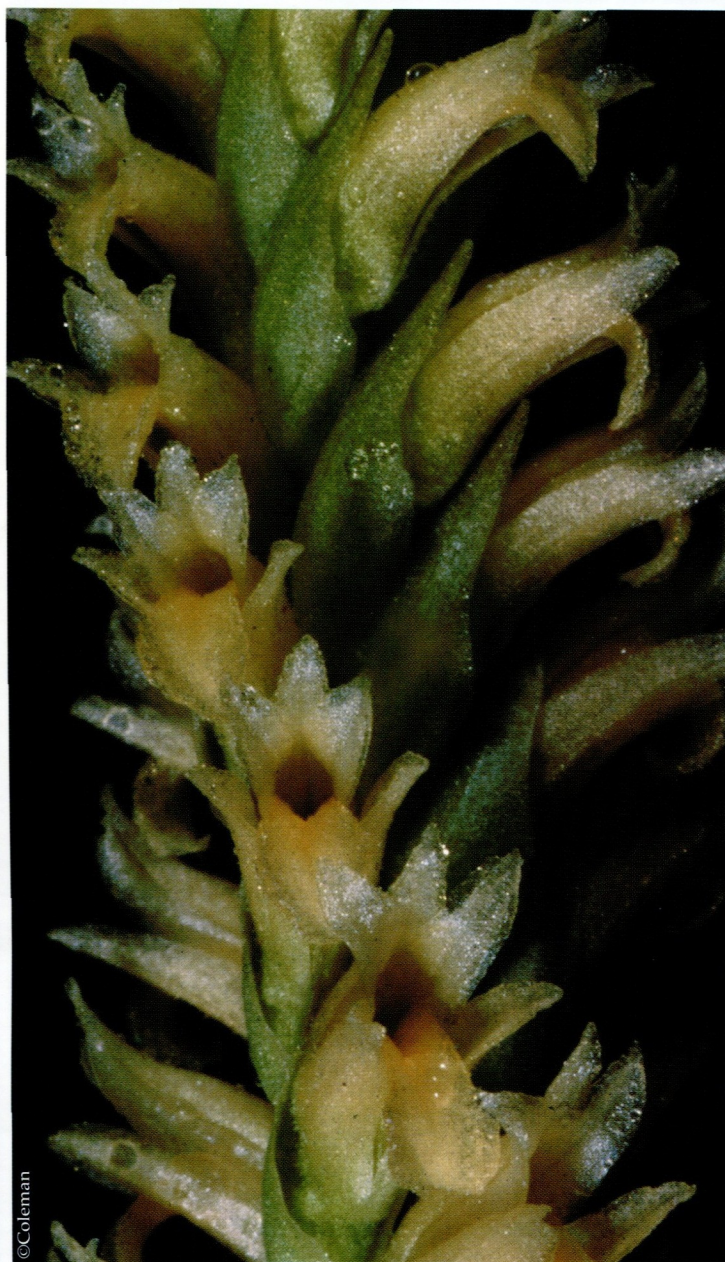
ladies'-tresses." Its peak blooming season is July and August, and its blooming season overlaps with *Spiranthes romanzoffiana*, which may account for the existence of natural hybrids between the two. It grows in moist meadows and seeps. Darwin described the pollination mechanism of *Spiranthes* as preventing self-pollination. On freshly-opened flowers, the column is positioned close to the lip blocking the stigma. The insect probing for nectar comes away with a load of pollen but cannot deposit it on the blocked female part. As the flower ages, the stigma is revealed, and an insect can deposit pollen from another flower. This is a common strategy of *Spiranthes*.

Spiranthes romanzoffiana

The species is named in honor of Nicholas Romanzof, who was the Russian minister of state when Alaska was a Russian territory. The sepals and petals

form a hood over the column and the basal half of the lip. It has a pandurate or violin-shaped lip that is distinctive. In the Southwest, blooming size is between 4 and 16 inches with up to 60 flowers in three dense spirals. It is found in meadows as well as springs and grassy wet areas. Blooming in August, it is difficult to find when not in bloom because the grasses and other plants hide its short leaves.

Spiranthes romanzoffiana has a sweet aroma that has been described as that of sweet lilacs. Eleven pollinators are attracted to its delightful aroma, six species of bumblebee, one cuckoo bee, one leaf-cutting bee, and three Halictid bees. Bees visit many times over a long period, landing on the lowest flowers first and working their way up the inflorescence. Supposedly, the lower flowers have the most nectar and are therefore the most attractive. The tallest, prettiest plants attract the most visitors. Pollinia are attached to the insect's tongue!



Spiranthes porrifolia flowers are arranged in a dense spiral.



Spiranthes porrifolia is limited to the western United States.



Spiranthes romanzoffiana has up to 60 flowers in three dense spirals.

So there we have them, all fourteen. What a thrill it is for us to know that so many native orchids have found a home in Nevada!✿

Acknowledgments

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Spiranthes romanzoffiana, plant habit.

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References

Brown, Paul Martin. *The Wild Orchids of North America, North of Mexico*. Gainesville: University Press of Florida. 2003.

- Coffey, Timothy. *The History and Folklore of North America*. Boston, New York: Houghton Mifflin Company. 1993.
- Coleman, Ronald A. *The Wild Orchids of Arizona and New Mexico*. Ithaca and London: Comstock Publishing Associates, Cornell University Press. 2002.
- Coleman, Ronald A. *The Wild Orchids of California*. Ithaca and London: Comstock Publishing Associates, Cornell University Press. 1995.
- Correll, Donovan Stewart. *Native Orchids of North America*. Stanford, California: Stanford University Press. 1978.
- Flora of North America Editorial Committee. *Flora of North America: North of Mexico*, Vol. 26. New York and Oxford: Oxford University Press. 2002
- Keenan, Philip E. *Wild Orchids Across North America*. Portland: Timber Press. 1998.
- Van Der Cingel, N.A. *An Atlas of Orchid Pollination: America, Africa, Asia and Australia*. Rotterdam: AA Balkema Publishers. 2001.
- KEW World Check List of Selected Plant Families. <http://apps.kew.org/wcsp/home.do>.

The following orchids are mentioned in the *Flora* as being in Nevada:

Flora of North America Editorial Committee, ed. *Flora of North America: North of Mexico*, Vol. 26. New York, Oxford: Oxford University Press. 2002.

Spiranthes romanzoffiana
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Spiranthes diluvialis
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Platanthera dilatata var. *leucostachys*
Platanthera sparsiflora
Piperia unalascensis
Listera convallarioides
Corallorhiza striata var. *striata*
Corallorhiza striata var. *vreelandii*
Corallorhiza maculata var. *occidentalis*

Platanthera stricta is not mentioned in the *Flora* but is mentioned as being from Nevada in:

- Correll, Donovan Stewart. *Native Orchids of North America North of Mexico*. Stanford: Stanford University Press. 1978.
- Luer, C.A. *The Native Orchids of the United States and Canada*. New York: New York Botanical Garden. 1975.

The following orchids are represented by dried specimens and are in the database of UNLV at Las Vegas, Nevada.

Corallorhiza maculata
Epipactis gigantea
Habenaria dilatata (syn. *Platanthera*)
Habenaria dilatata var. *leucostachys* (syn. *Platanthera*)
Habenaria sparsiflora (syn. *Platanthera*)

Listera cordata (not mentioned in the *Flora* above)
Spiranthes infernalis
Spiranthes romanzoffiana

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Spiranthes porrifolia
Spiranthes romanzoffiana

In the herbariums of UNR and UNLV, the following orchids are represented by county (starting from Southern Nevada and going north)

CLARK:

Epipactis gigantea
Platanthera (*Habenaria*) *dilatata* var. *leucostachys* (This orchid is NOT represented in the herbariums. However, Dr. Patrick Leary asserts that it was collected by Ira Stokey in Kyle Canyon, and Dr. Leary is the expert on this area's plants.)
Platanthera (*Habenaria*) *sparsiflora*

NYE:

Corallorhiza maculata
Epipactis gigantea
Platanthera (*Habenaria*) *sparsiflora*
Spiranthes infernalis
Spiranthes romanzoffiana

LINCOLN:

Platanthera (*Habenaria*) *sparsiflora*

ESMERALDA:

Platanthera (*Habenaria*) *sparsiflora*

MINERAL:

None

DOUGLAS:

Corallorhiza maculata
Epipactis gigantea
Platanthera (*Habenaria*) *dilatata* var. *leucostachys*
Platanthera (*Habenaria*) *dilatata* (no variety listed)
Listera convallarioides

LYON:

Platanthera (*Habenaria*) *dilatata* (no variety mentioned)

CARSON CITY:

Platanthera (*Habenaria*) *sparsiflora*
Platanthera (*Habenaria*) *dilatata* var. *leucostachys*
Listera convallarioides

CHURCHILL:

None

STOREY:

Platanthera (*Habenaria*) *dilatata* var. *leucostachys*

LANDER:

Platanthera (*Habenaria*) *dilatata* var. *leucostachys*

EUREKA:

None

WHITE PINE:

Corallorhiza maculata
Platanthera (Habenaria) dilatata (var. not mentioned)
Platanthera (Habenaria) dilatata var. *leucostachys*
Platanthera (Habenaria) sparsiflora
Listera convallarioides
Listera cordata

WASHOE:

Corallorhiza maculata
Listera convallarioides
Platanthera (Habenaria) dilatata var. *leucostachys*
Platanthera (Habenaria) dilatata (var. not mentioned)
Platanthera (Habenaria) sparsiflora
Spiranthes porrifolia
Spiranthes romanoffiana

PERSHING:

None

HUMBOLDT:

Epipactis gigantea
Platanthera (Habenaria) sparsiflora

ELKO:

Corallorhiza maculata
Platanthera dilatata (var. not mentioned)
Platanthera sparsiflora
Spiranthes romanoffiana
Platanthera stricta (specified county by Correll)

The following orchids are found in the herbarium from the following counties:

Corallorhiza maculata:

Douglas, Washoe, White Pine, Nye, Elko

Epipactis gigantea:

Clark, Douglas, Humboldt, Nye

Listera convallarioides:

Douglas, Ormsby/Carson, Washoe, White Pine

Listera cordata:

White Pine

Platanthera dilatata (no variety listed):

Elko, Douglas, Lyon, Washoe, White Pine

Platanthera dilatata var. *leucostachys*:

Carson, Douglas, Elko, Lander, Storey, Washoe, White Pine

Platanthera sparsiflora:

Carson City, Clark, Lincoln, White Pine, Elko, Esmeralda, Humboldt, Nye, Washoe

Spiranthes infernalis:

Nye

Spiranthes romanoffiana:

Elko, Washoe, Nye

About the Author

Carol Siegel, a retired English teacher and medical office manager, has been president and newsletter editor of the Greater Las Vegas Orchid Society for several years. She has spoken on "The Sex Life of Orchids" at societies, museums and universities around the country, and has written articles on Nevada's native orchids. Carol leads groups of Clark County school children on tours of the Springs Preserve, a museum and nature center complex. She is a frequent contributor to *Orchid Digest*.



Carol Siegel
8601 Robinson Ridge Drive
Las Vegas, NV 89117
E-mail: growlove@cox.net

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