

*BIGROOT—Manroot's Southern Species:
Illustrations of Growth and Dieback at Rancho Santa Ana Botanic
Garden*

Photographs by Vicki Johnson
Text by Mike Raugh & Vicki Johnson

Draft of
April 23, 2010

Introduction

This is the second slide show of the *Manroot Gallery*, featuring a species of Manroot common in coastal and mountain regions of Southern California known as Cucamonga Bigroot, or just Bigroot, *Marah macrocarpus*. The Latin epithet refers to the large seed capsules, which are larger than those of *Marah fabaceus*, a species common in northern California featured in the first slide show.

All the photos in this section were taken by Vicki Johnson at the Rancho Santa Ana Botanic Garden in Claremont, California on April 12, 2010. (www.rsabg.org/)

Entering the “Back Fifty”



(Copyright © 2010 Vicki Johnson.)

Figure: Less manicured than the garden area on the “plateau”, the lower “back fifty” exhibits a variety of California forest assemblies. This area is hospitable to the Cucamonga Bigroot.

A wild place



(Copyright © 2010 Vicki Johnson.)

Figure: Specimens of trees and shrubs from around California are placed in settings as natural as they can be made in the Back Fifty.

The Manroot tendril is a device for climbing



(Copyright © 2010 Vicki Johnson.)

Figure: Shown here before attachment. The tendrils of Bigroot usually branch into two filaments as seen here, one of which is the primary branch. However, some Bigroot tendrils sport only the main filament.

Unattached tendrils can turn into curlycues.



(Copyright © 2010 Vicki Johnson.)

Figure: When not attached and serving to hoist the vine, tendrils curl into useless loops.

A younger tendril takes over the job of lifting



(Copyright © 2010 Vicki Johnson.)

Figure: A tightly coiled but relaxed tendril spotlighted in the center, has been relieved of its burden by the taut primary filament of the tendril in the shade at the next higher node (upper left). The secondary filament, which never attached to a support, loops aimlessly towards the stem.

Tendrils can lift a vine high—one node at a time



(Copyright © 2010 Vicki Johnson.)

Figure: The mature vine observed by the photographer has reached the summit of a Cypress, produced its seeds and begun to die off.

Withering away, doing little if any harm



(Copyright © 2010 Vicki Johnson.)

Figure: Later in April, after winds have shaken off the dead vine, there will be plenty of sunshine left for the growth of the tree.

Two vines meeting in mid-air?



(Copyright © 2010 Vicki Johnson.)

Figure: Could be one vine that made the leap. Look for green seed pods concealed in shade at right.

A more visible seed pod



(Copyright © 2010 Vicki Johnson.)

Figure: Not many seed pods were visible during our mid-April visit to RSABG. And we saw no ripened ones. Many, however, were seen a few days later farther down the coast, as we will show in the third slide show of the *Manroot Gallery*.

Tendrils can grab anything of suitable size and texture



(Copyright © 2010 Vicki Johnson.)

Figure: Spines of an *Opuntia* offer support. Notice the reversal in the sense of coiling, always present in an attached coiled tendril.

Exposed root—a rare sight in nature



(Copyright © 2010 Vicki Johnson.)

Figure: Looking like a fallen bird, this exposed portion of a Manroot tuber may be dead or dormant. No leaders were observed nearby.

Potted Manroot tuber



(Copyright © 2010 Vicki Johnson.)

Figure: A live Manroot tuber set out by the Garden for viewing. The growth is stunted because the root has been disturbed.

Stems issuing from the tuber



(Copyright © 2010 Vicki Johnson.)

Figure: Late in winter fresh stems push forth to the surface. But life above ground for a Manroot vine is short, ending in spring. The tuber lives on beneath the ground many years for who knows how long.

A man with white hair, wearing a light-colored cowboy hat with a brown band, aviator sunglasses, a white long-sleeved shirt, and a green quilted vest, is sitting on a wooden bench. He is smiling and looking towards the camera. His right arm is resting on the back of the bench. The background is a lush garden with green foliage and purple flowers. A small plaque is visible on the bench.

Figure: Co-author at bench. Photographer reflected in glasses, still at work.

Where to find more information

Charles Darwin's essay on tendril bearing plants is classic and is still available in many reprint editions : *The Movements and Habits of Climbing Plants*, 2nd crctd ed, 1882.

The characteristics and distribution of *Marah* species, in particular *Marah fabaceus* featured in these slides, can be found in any of the major manuals of California flora. The most current and complete is:

The Jepson Manual: Higher Plants of California by James C. Hickman (editor) and Willis Linn Jepson, 1993.

Online, see *The Jepson Online Interchange—California Floristics* at <http://ucjeps.berkeley.edu/interchange.html>.

A discussion of the “pulling power” of tendrils is available with this Gallery at an associated URL: *Can a Manroot Tendril Pull its Vine Closer to a Support even as the Tendril increase in Length?*

Further references

Manroot is a characteristic plant of the California chaparral and associated floristic communities. For general information:

Introduction to California Chaparral by Ronald D. Quinn and Sterling C. Keeley, 2006.

Fire, Chaparral, And Survival In Southern California by Richard W. Halsey, 2008.

California Chaparral: An Elfin Forest by Winfield Scott Head, 1972.

For botanical terminology, these are excellent:

Plant Identification Terminology: An Illustrated Glossary by James G. Harris and Melinda Woolf Harris, 2001.

The Cambridge Illustrated Glossary of Botanical Terms by Michael Hickey and Clive King, 2001.

Photographs and Contacts

These slides are accessible on the web at:

www.mikeraugh.org/WildThings

The photos in the slides are low-resolution thumbnails of Vicki Johnson's high-resolution originals.

Please honor copyright.

Contact Mike Raugh at,

Michael.Raugh@gmail.com