

## 2013 Calendar of Events for FALL

Palomar College Arboretum Home Page: <http://www.palomar.edu/arboretum/>

### Stinking Flowers: Blossoms That Smell Bad & Attract Flies

*Photos and Article by W.P. Armstrong*

A typical flower may be stereotyped as a colorful, sweet-smelling structure that attracts insects. A variety of insects find the showy petals and fragrance irresistible, and the reward for their pollination service is a carbohydrate-rich, sugary nectar secretion from the flower. While the above scenario fits the majority of flowering plants, there are many notable exceptions. Some plants rely on wind or water for pollination, and produce inconspicuous flowers with copious airborne or water-dispersed pollen. But of all the exceptions to the typical flower stereotype, some of the most remarkable are known as "carrion flowers," showy blossoms with the stench of rotting flesh. They belong to a variety of different and unrelated plant families, and include some of the largest and most bizarre flowers.

Carrion flowers are masters in the art of deception because they lure flesh and fecal-loving insects into their blossoms. The flowers get pollinated but the fate of the insects is much more dismal. Maggots hatching from eggs laid by flies will perish from lack of any suitable food. Unlike typical insect-pollinated flowers, most carrion flowers do not waste precious energy on rewarding its pollinators with copious nectar. The overpowering

stench of some carrion flowers may be caused by amines from the putrefaction of rotting proteins. Even in low concentrations of 5 to 10 parts per billion, they are detected by the human nose.

Blossoms of certain members of the arum family (Araceae) release volatile dimethyl sulfides to attract blowflies. These molecules have the unpleasant odor of rotten eggs and animal feces. They are present in arums such as *Amorphophallus* and in the stinkhorn fungi. In some arums, the flower-bearing spadix heats up to further vaporize the volatile stench. The largest and most remarkable stinking arums are native to tropical regions, including the "corpse flower" (*A. titanum*) of Sumatra and Indonesia with an erect spadix 8 feet tall. We have a native arum in the Pacific northwest called yellow skunk cabbage (*Lysichiton americanum*) with a noticeable skunky odor. Black bears actively seek this plant out after many months of hibernation because it provides them with a natural laxative.

The undisputed largest flower is called "stinking corpse lily" (*Rafflesia arnoldii*), an unusual stem parasite in the Rafflesiaceae. It is also native to Sumatra and the Malay Archipelago. A strange South African root parasite (*Hydnora africana*) grows on the roots of *Euphorbia* species and is pollinated by carrion beetles.

Flowers of Dutchman's pipe (*Aristolochia*) have an ingenious mechanism for cross pollination where

incoming pollinators are trapped behind a temporary barrier of hairs. After a day the hairs wilt, allowing the flies to escape. At this time male flowers release pollen, dusting the outgoing flies for their next floral visit. Species of *Aristolochia* are often called "pipe vines" because the flowers are shaped like a 19th century Dutch pipe like the one used by Sherlock Holmes.

The flowers of *Stapelia* not only smell like a dead animal, but they are also flesh-colored and covered with hair. The closely related genus *Cercropia* produces striking, malodorous blossoms shaped like a wine glass, often with glistening cilia to attract flies. Like *Aristolochia*, they detain their visiting flies until the male flowers are mature.

Flower "scent mimics" that lure carrion insects into their putrid blossoms are some of nature's most fascinating (and successful) experiments in evolution. They certainly represent some of the most fantastic examples of floral diversity. Although they include some of the largest and showiest blossoms in the world, they will probably never be used in a floral arrangement on your dining room table.

For additional information see article & images on Wayne's Word: Stinking Flowers:  
<http://waynesword.palomar.edu/ww0602.htm>

**World's largest single flower over 3 feet in diameter.**



***Rafflesia arnoldii***  
(Rafflesiaceae)

**Spadix over 8 feet tall. Huge inflorescence with many small flowers.**



***Amorphophallus titanum***  
(Araceae)



***Hydnora africana***  
(Hydnaceae)



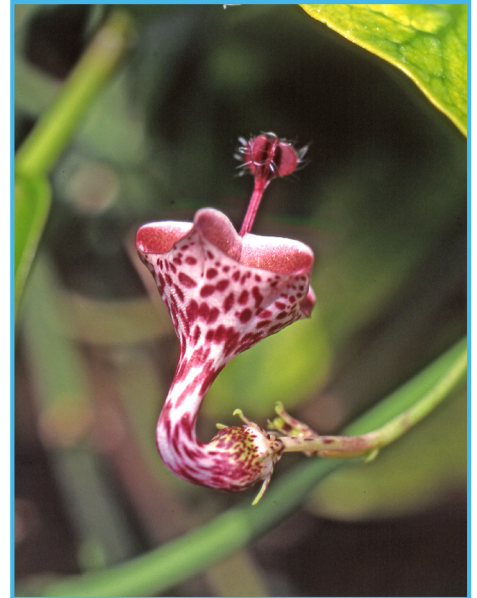
A furry South African carrion flower (*Stapelia flavivestris*).

The undisputed world's largest flower (*Rafflesia arnoldii*), the largest arum (*Amorphophallus titanum*), and a strange South African root parasite (*Hydnora africana*).





Yellow skunk cabbage (*Lysichiton americanum*), a showy arum native to the Pacific northwest.



*Ceropegia haygarthii*, a member of the Apocynaceae related to *Stapelia*.



Theatre Garden near the new Performing Arts Complex.  
*Three landscape photos by Melinda Finn.*



A Dutchman's pipe (*Aristolochia californica*) native to the Coast Ranges of California and foothills of the Sierra Nevada. It is pollinated by fungus gnats.



## Have You Walked Around The Campus Lately?

The Palomar College campus is becoming a botanical garden. Thanks to Tony Rangel, we now have several distinct gardens on campus, each with unique plants: (1) **Mesoamerican Garden** near the Weight Training Bldg, (2) **Theatre Garden** near the Performing arts Complex, (3) **Hawaiian Garden** near the D Bldg, (4) **Polynesian Garden** near the Teaching & Learning Center, (5) **Monocot Garden** near the Science Bldg, (6) **Native Plant Garden** near the Science Bldg, and (7) **Medicinal Plants Garden** near

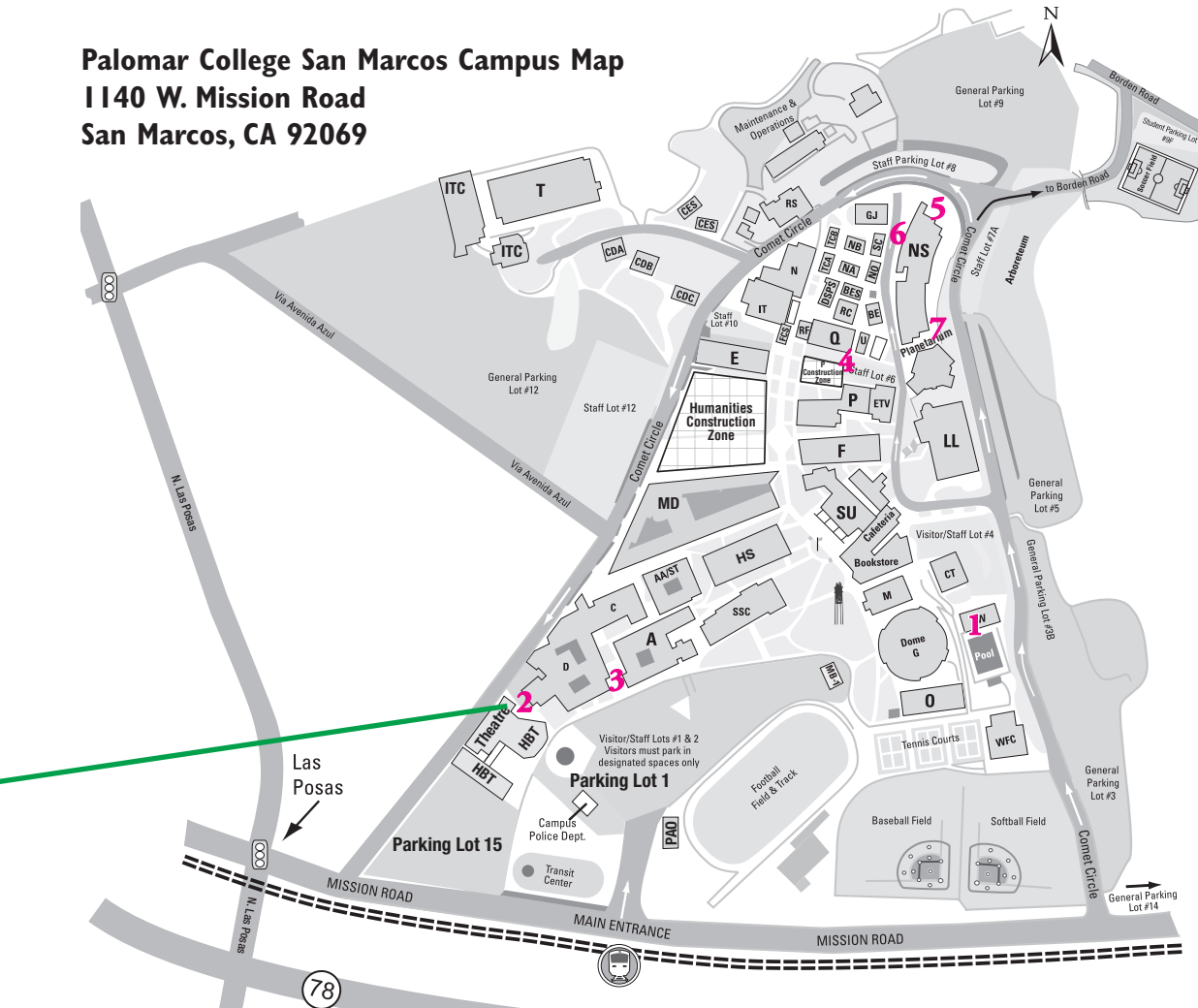
the Science Bldg and Planetarium. Many of these plants already have labels. Tony is also working on a book about the **"The Gardens of Palomar College"** including some of the interesting plantings and people who have made this possible over the years.

A number of years ago Prop M was passed and money was appropriated for the Arboretum. This money will be used for wheelchair accessible trails and an irrigation system that will greatly enhance our Arboretum. Stay tuned for this important development.

Please check the Arboretum web page for coming events next spring (2014):

<http://www.palomar.edu/arboretum/calendarEvents.htm>. We are planning some interesting lectures and workshops. Wayne Armstrong is planning a lecture on "Botanical Record-Breakers," amazing trivia about plants of the world. See his on-line lecture outline at: <http://wayne.sword.palomar.edu/BotRecords1.htm>.

### Palomar College San Marcos Campus Map 1140 W. Mission Road San Marcos, CA 92069



## Would you like to be an Arboretum Volunteer?

Maintaining the Palomar College Arboretum is an enormous task and takes countless hours to keep all the gardens growing. We are often asked: What does an Arboretum volunteer do? How many hours would a volunteer be expected to work? Can anyone volunteer?

Tasks assigned to volunteers are based on an individual's knowledge, experience and physical limitations. Some horticultural experience is a plus; however it is not necessary. Basic tasks include raking leaves, sweeping, weeding and watering. Other complex tasks like trimming and planting may be asked of volunteers if they have been trained properly by the Grounds Services staff. In an effort to keep track of the large and

diverse plant collection a database of all the plants on campus is maintained. Help with this computerized database project is always needed.

In addition to maintaining the District's plant collection we operate our own nursery and propagation area. We also maintain a seed bank for several of the more rare and unique plants. Plant propagation work is vital to the grounds department. Seeds and cuttings of our specimens are collected from various places and propagated here in our nursery. With the diversity of plants on campus, volunteers have an opportunity to work with cactus, succulents, trees and shrubs from around the world.

Complete information and a volunteer registration packet is available from the Human Resources Office at: <http://www.palomar.edu/hr/Personnel/volunteers.htm>.

We request that volunteers commit to at least 4 hours per week and submit to the grounds supervisor a record of hours worked on a monthly basis. In addition, members of the Friends of the Arboretum are eligible for an annual parking pass of \$30 at the following link:

<http://www.palomar.edu/arboretum/ParkingPermitApplication.pdf>

## 2013 Calendar of Events for FALL - Events, Workshops, Lectures and Tours for 2013

For Room Numbers Please Refer To The On-Line Events Calendar: <http://www.palomar.edu/arboretum/calendarEvents.htm>

**\*Saturday, September 14**

**10:00 am – Noon**

### **“Discover the Plants of Palomar College Walking Tour”**

*with Tony Rangel*

Front of the Boehm Gallery

The tour is free and open to the public.

Please park in Parking Lots 5 & 3B.

(free parking for attendees)

Please RSVP Tony Rangel if you are planning to attend this tour.

Email: [arangel@palomar.edu](mailto:arangel@palomar.edu)

Call: (760) 744-1150 ext. 2133

**\*Thursday, October 3**

**8:00 am – 3:00 pm**

### **“Annual Arboretum Fall Plant Sale”**

Near the Student Union Flag Pole

The public is welcome!

For more information

Email Tony Rangel [arangel@palomar.edu](mailto:arangel@palomar.edu)

Call: (760) 744-1150 x2133

**\*Saturday, October 5**

**8:00 am – Noon**

### **“Annual Fall Arboretum Beautification Day”**

Meet at the Patron's Friendship Pavilion in the Arboretum. Please RSVP Tony Rangel if you are planning to help.

Email: [arangel@palomar.edu](mailto:arangel@palomar.edu)

Call: (760) 744-1150 x2133

Free parking in Parking Lots #5 & 3B for this event day and time only.

- Continental breakfast in the morning and water will be provided through-out the day.
- Please bring along your rake, shovel, gloves, hat, sunscreen & sunglasses.
- Mark your tools with your name and phone number.

*Note:* Parents of volunteers under the age of 18 years old will need to fill-out a waiver form. Please bring the form with you to the Beautification Day event. <http://www.palomar.edu/facilities/pdfs/LiabilityWaiverIndiv.pdf>

**\*Saturday, November 2**

**10:00 am – Noon**

### **“The Kingdom Fungi”**

*with Steve Farrar*

**Room:** First Floor NS Building in room #139

Please park in Parking Lots 5 & 3B. (free parking for attendees for this lecture only)

Please RSVP Tony Rangel if you are planning to attend this lecture.

Email: [arangel@palomar.edu](mailto:arangel@palomar.edu)

Call: (760) 744-1150 x2133

Free parking in Parking Lot #5 for this event day and time only

**NOTE TO FACULTY:** You can receive Professional Development credit by taking our workshops, tours and lectures. Maximum of 2 hours of PD credit per semester. Please sign-up with the Professional Development office. <http://www.palomar.edu/pd/> Call (760) 744-1150 x2250 for more information.



## Arboretum Expenditures During 2012

Here is a brief summary of the Palomar College Arboretum Expenditures for 2012. It is based on detailed Excel spreadsheet data provided by our excellent secretary Pauline Riley. We want to thank all of the members of the Friends of the Palomar College Arboretum for their continued support and generous donations. It is because of dedicated people from Palomar College and the community during the past 40 years that we actually have a marvelous arboretum at this college.

1. Membership Renewal: Botanical Gardens Conservation International	\$350
2. License To Sell Nursery Stock Grown In Campus Greenhouse	\$150
3. Purchase Easy Up Canopy (Sun Canopy) For Outdoor Activities	\$107
4. Arboretum Banner To Place On Easy Up (Sun Canopy)	\$93
5. Funding For Two \$300 Palomar College Scholarships	\$600
6. Catering For Cactus & Succulent 50th Anniversary & Members Dinner	\$337
7. Catering For The Spring Beautification Day	\$315
8. Catering For The Fall Beautification Day	\$88
<b>Total Expenditures (Account numbers and payees not included in summary)</b>	<b>\$2040</b>

## Friends of the Palomar College Arboretum Committee

**Tony Rangel, President**

**Dick Henderson, Vice President & Cactus Garden Liaison**

**Christine Brady, Treasurer**

**Pauline Riley, Secretary**

**Elaine Armstrong, VP of Membership & Webmaster**

**Richard Borevitz, Community Liaison**

**Dr. Bill Adams, Business Liaison**

**Alonna Farrar, Graphics Specialist**

**Wayne Armstrong, Newsletter Editor & Life Science Liaison, Plant photographer.**

