

In June we met at the Los Angeles Zoo and Botanical Gardens' Witherbee Auditorium, where we were enlightened about "The Dirt on Plant Sex" by popular speaker Sandy Masuo. As a former SCHS Board member Sandy was already known to many attendees as an entertaining presenter, and her reputation did not disappoint. As a self-described inveterate plant nerd and garden voyeur, her enthusiasm only served to enhance her slide show and presentation, which, despite its title, was basically scientific in nature.



Photo courtesy of speaker.

Sandy began her talk at the cellular level, discussing how gametes can be fertilized in the plant world by a variety of means. She described the difference between monoecious (one house) species in which each plant has both male and female flowers, and dioecious (two houses) species wherein some plants have only male reproductive structures and others have only female. Sandy cited *Cannabis* as an example of a dioecious plant where the female will bud furiously and abundantly absent the presence of a male plant, and *Ginkgo biloba*, whose foul-smelling female fruit is the reason most growers produce only male plants via cloning. She also indicated that over 80% of all plants are actually hermaphroditic, producing flowers which have both male (stamen) and female (pistil) reproductive parts. Also known as "perfect" flowers, their biology typically makes fertilization much easier.

While these are the basics of plant sex, Sandy also spoke about other methods of reproduction, including "selfing" in which a self-fertile plant produces clones of the mother plant; vegetative reproduction (ex: rooting via runners or producing off-sets such as bulbils or plantlets); and of course, cloning. She pointed out that while cloning can be useful (as in the case of the *Ginkgo*), the downside to the practice is the lack of genetic diversity. Clones are more susceptible to damage or destruction by pests or disease which could spread and decimate entire plant populations.

This led to Sandy presenting her take on the many and varied methods by which plants engage in the act of pollination, the basis of all botanical sexual reproduction. She ruminated that while wind-borne pollen can result in fertilization, oftentimes other agents are needed to complete the act, resulting in "threesomes" between the male and female reproductive parts of flowers and an outside partner. While we all know that "bees do it", other insects, bats, lizards, rodents, and birds do it too. Despite these promiscuous

tendencies in accepting random pollination partners, certain plants engage in exclusive relationships to assist in their reproduction.

Yuccas depend on the yucca moth flying between plants; figs rely on female wasps to lay eggs within their fruit and transfer pollen attached to newly-hatched, pregnant females who exit one fruit and then enter another to lay new eggs; and still others (including *Rafflesia*, *Hoodia*, *Stapelia* and the well-known *Titan arum*) exude the smell of rotting flesh to attract their pollinators. While these adaptations are all varied and interesting, no genera has evolved quite the elaborate systems that are found in the *Orchidaceae*. According to Sandy, orchids often "play hard to get", as each species must attract a specific animal partner to aid with pollination. In order to lure the desired pollinator, orchids can be very manipulative and may physically resemble female insects, or mimic their scent, to draw the attention of their male counterparts, such as *Ophrys bombyliflora*, which looks like a bee.

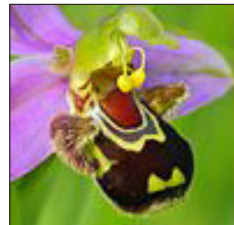


Photo credit: Wikipedia

In conclusion, Sandy reminded us that all the tricks plants use to attract pollinators purely for the purpose of sexual reproduction have not gone unnoticed by humans either. We have a well-documented history of coveting and collecting unusual botanical specimens for their beauty or rarity (think Tulipmania) and of bringing cut flowers into our homes. Various cultures have long assigned symbolic meanings to plants, and in the 18th century Lady Mary Worthy Montagu introduced "floriography" (the Turkish "Secret Language of Flowers") to the European aristocracy. Artists as well have always found plants to be popular subject matter, often acknowledging their sexual nature, from the paintings of Georgia O'Keeffe to Robert Mapplethorpe's flower photos. While Sandy's presentation unveiled some of the mysteries of plant sex, the intrigue surrounding the real nature about the secret lives of plants persists, enticing us to continue digging deeper and learning more.

✿ Sabine Steinmetz

SCHS WELCOMES NEW BOARD MEMBER

Pursuant to the vote by the general membership, and effective as of this month, we welcome

Fleur Nooyen

to the SCHS Board and look forward to her contributions and to working with her.

ARBORETUM LIBRARY EVENT RECAP

On July 17, SCHS members and their guests were invited to attend a special Coffee in the Garden event. Arranged by the SCHS and hosted by Susan Eubank, Head Librarian of the Los Angeles County Arboretum and Botanic Garden, attendees were treated to a behind-the-scenes look at the newly renovated library and its multitude of resources.

Susan explained that the library is a "public-private partnership" that is open to everyone for on-site study purposes, free of charge. Arboretum members are allowed to check out materials from the over 25,000 books, 100 international magazine subscriptions, 200+ nursery catalogs, as well as having access to over 6,500 E-books, CDs, videos, DVDs, slides and historical photographs. The library also houses an impressive rare book collection which can be retrieved for viewing upon request, and from which Susan shared several selections with us, including the library's oldest volume, a physician's herbal reference dating to 1598.

In addition to sharing some of its literary treasures with us, Susan also gave a brief history of the library's evolution from 1948 to the present, special services such as Bookworms Story Time for kids, and its current availability as a venue for rotating exhibits of botanically-themed art.



Photo courtesy of Susan Eubank

While Susan's presentation began at 2:00, the event was held from 1:00 - 4:00, allowing those brave enough to venture outside in the heat to explore the Arboretum grounds. Most people chose to remain inside the air-conditioned library to enjoy snacks provided by the SCHS Board and stroll through the stacks while viewing the current art exhibit on display.

The SCHS would like to thank Susan for her wonderful presentation and the Board for coordinating the event. It is definitely a worthwhile destination the next time you're visiting the Arboretum. More information about the library, its resources, current events, and general information can be found at www.arboretum.org/learn/library/. ✿ Sabine Steinmetz