

# The Sheath

## July General Meeting

Date: July 25, 2008

Time: 7:45 PM General Meeting

Place: San Mateo Garden Center

605 Parkside Way, San Mateo, CA

Take the Alameda de las Pulgas exit off of Hwy. 92.  
The Garden Center is located between 26th and 28th  
Avenues

Mailing address: P.O. Box 6894, San Mateo, CA 94403-6894

Skill Session at 7:00PM

**Tanya Lam**

**Growing in coconut  
media**

Meeting plus Show and  
Tell Table - 7:45 PM  
followed by

Speaker: **Debra Atwood  
of Napa Valley Orchids**

**Zen of Orchids**

Opportunity table by  
**Napa Valley Orchids**

### **The Zen of Orchids . . . Success and Pleasure**

**presented by Debra Atwood**

Our speaker for this month's meeting, Debra Atwood, is the owner of Napa Valley Orchids. This is Debra's favorite talk to give. Webster describes 'Zen' as enlightenment through introspection and intuition. Debra has found this to be a very rewarding method of growing and flowering orchids. She'll tell you how and why. You may remember Debra from her well received talk at our March 2007 meeting on the topic of **10 Rules for Basic Orchid Care**, and as a popular vendor at our last three POS shows.

Debra grows species and hybrids, and offers potting and culture workshops to many orchid enthusiasts in the Napa Valley area.

She has been growing orchids professionally for more than 7 years.

For more information on Debra and Napa Valley Orchids visit her website [www.napavalleyorchids.com](http://www.napavalleyorchids.com) or call her at 707-255-8266. She will bring a current class schedule with her as her web site is awaiting updating. Visitor's are welcome at her greenhouse 1 mile off of Hwy. 29 - just call first to make sure she will be there.

**Napa Valley Orchids** will supply the plants for the opportunity table. Debra will also bring orchids and supplies for sale.

**July Skill Session on Growing Orchids in Coconut Media** will be given by **Tanya Lam**. Tanya is well known for her beautiful Cattleyas and is an accomplished grower of many types of orchids. Join her to learn the ins and outs of using coconut media.

**President's Corner**

Wow, we are halfway through 2008. Hard to believe time can go so quickly. The POS has some great events coming up. For our meeting on Friday July 25, our speaker is going to be Debra Atwood from Napa Valley Orchids. Debra brims with great orchid growing advice, and her talk will be on the "Zen of Orchids". I have heard great things about this talk, which focuses on orchid culture and growing great plants. Debra will also be supplying the opportunity table and will be bringing orchids and supplies as well for sale. Our skill session, graciously given by Tanya Lam, will cover using coconut potting media. Other events include our annual bus trip in August (see announcement in the newsletter) and our annual auction (coming up in October). The POS will also sponsor a display at the upcoming "From the Greenhouse to Your House" is Thursday, July 17 through Sunday, July 20" at Filoli. On Friday, July 18 (Orchid Day), two of our members, Rex Castell and Jackie Becker, will be giving some hands on information and demonstrations.

Mary Gerritsen  
President, POS.

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**Member News**

*A VERY HAPPY BIRTHDAY TO:* **Jackie Becker, Jessica James, Jason Heirtzler, Anna Chai, James Frankenfield, Fernand Araullo, Deadra StClair, Doris Testa, Paul Chim, Raymond R. Ogburn, Twyla Weinberg, Jerry Rodder, Joo Bong Ra, Melvin Jones, Valerie Jones, Barbara Robinson, Jonathan Riley, Trudy Hadler, Marjorie Molakidis, and Nancy Wilson.**

**Get well soon!**

We wish **Anna Chai** a full and speedy recovery from her recent knee surgery. (Well, she was at the June meeting after her surgery and looked great - but this is the soonest I could get her into the newsletter.)

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**Meeting Refreshments**

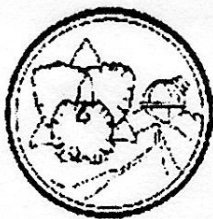
Earn a free strip of Opportunity Table Tickets by bringing refreshments to any of the meetings! Your fellow members love all kinds of goodies. Please see either Olga Ostrovsky or Rebecca Grubbs for your "thank you" strip of opportunity tickets!





## Upcoming Events

**August 16 - POS Greenhouse Bus Tour!** Set aside this Saturday in August for a fun day of looking at and buying orchids and orchid supplies. There were many great bargains last year, the bus was extremely comfortable and a fabulous time was had by all. This year we will be heading out to Golden Gate Orchids (Tom Perlite) in San Francisco and Hanging Gardens (Dan Newman) in Pacifica. If enough people sign up for \$40 each we will have a bus. If we don't meet the number needed (as of July 9 there were 26 people), then we will carpool from the San Mateo Garden Center and the cost will be only for the lunch at Hanging Gardens plus chipping in for gas for the drivers.



# *Palomar Orchid Society Annual Orchid Auction*

**Saturday, August 9, 2008**

**Preview at 11AM, Auction at 12:00 noon**

**Location: Woman's Club of Carlsbad  
3320 Monroe Street  
Carlsbad, CA 92008**

**Directions: Go east off 5 on Carlsbad Village Drive, 1/4 mile to Monroe, turn south on Monroe to Woman's Club OR go west off El Camino Real at Carlsbad Village Drive to Monroe and turn south to Woman's Club.**

**Monthly meetings: FIRST WEDNESDAY of the month at the Woman's Club. Culture class at 6:45PM, regular meeting at 7:30PM.**

(Carlsbad is located near the coast between LA and San Diego. Ed.)



## WHAT IS PLANT NUTRITION?

Part 1 of 2 by Dr. Dave Neal, CEO of Dyna-Gro Nutrition Solutions

Plants use inorganic minerals for nutrition, whether grown in the field or in a container. Complex interactions involving weathering of rocks, decaying organic matter, animals and microbes take place to form inorganic minerals in soil. Roots absorb mineral nutrients as ions, dissolved in soil water. Many factors influence nutrient uptake for plants. Ions can be readily available to roots or could be “tied up” by other elements or the soil itself. Soils too high in pH (alkaline) or too low in pH (acidic) make many minerals unavailable to plants.

### Fertility or Nutrition

The term “fertility” refers to the inherent capacity of a soil to supply nutrients to plants in adequate amounts and in suitable proportions. The term “nutrition” refers to the interrelated steps by which a living organism assimilates food and uses it for growth and replacement of tissue. Previously, plant growth was thought of in terms of soil fertility or how much fertilizer should be added to the soil to increase the levels of mineral elements. Most fertilizers were formulated to account for deficiencies of mineral elements in the soil. The use of soilless mixes and increased research in nutrient cultures and hydroponics as well as advances in plant tissue analysis have led to a broader understanding of plant nutrition. Plant nutrition is a term that takes into account the interrelationships of mineral elements in the soil or growing medium as well as their role in plant growth. These interrelationships involve a complex balance of mineral elements which are essential or beneficial for optimum plant growth.

### Essential Versus Beneficial

A definition of an essential mineral element (or mineral nutrient) was proposed by Arnon and Stout in 1939. They concluded that three criteria must be met for an element to be considered essential. These criteria are: 1. A plant must be unable to complete its life cycle in the absence of the mineral element. 2. The function of the element must not be replaceable by another mineral element. 3. The element must be directly involved in plant metabolism.

These criteria are important guidelines for plant nutrition but ignore beneficial mineral elements. Beneficial elements are those that can compensate for toxic effects of other elements, replace mineral nutrients in some other less specific function such as the maintenance of osmotic pressure or provide other nonessential benefits. The omission of beneficial nutrients in commercial production could mean that plants are not being grown to their optimum genetic potential but are merely produced at a subsistence level.

In other words, Arnon & Stout’s proposed definition of an essential element is a narrow one: A plant cannot survive without these elements. A better definition of an essential mineral element would include all elements essential for optimum growth and health of any plant. This discussion of plant nutrition includes both the essential and beneficial mineral elements.

### What Mineral Elements Do Plants Need?

There are 20 mineral elements essential for plant growth. Carbon (C), hydrogen (H), and oxygen (O) are supplied by air and water. The six macronutrients, nitrogen (N), phosphorus (P), potassium (K), calcium (Ca), magnesium (Mg) and sulfur (S), are required by plants in large amounts. The rest of the elements are required in trace amounts (micronutrients). Essential trace elements include boron (B), chlorine (Cl), copper (Cu), iron (Fe), manganese (Mn), sodium (Na), zinc (Zn), molybdenum (Mo), nickel (Ni), silicon (Si) and cobalt (Co). Note that Si and Co are not considered essential (by the Arnon & Stout definition) to all plants but are essential to some. Studies have also shown that other mineral elements are beneficial to the growth of some plants. The distinction between beneficial and essential is often difficult in the case of some trace elements. Cobalt for instance is essential for nitrogen fixation in legumes. It may also inhibit ethylene



formation and extend the life of cut roses. Silicon, deposited in cell walls, has been found to improve heat and drought tolerance and increase resistance to insects and fungal infections. Silicon, acting as a beneficial element, can help compensate for toxic levels of manganese, iron, phosphorus and aluminum as well as zinc. A more holistic approach to plant nutrition would not be limited to nutrients essential to survival but would include mineral elements at levels beneficial for optimum growth. With developments in analytical chemistry and the ability to eliminate contaminants in nutrient cultures, the list of essential elements may well increase in the future. For example, nickel, the most recent addition to the list of essential elements, was added in the early 1990s as a result of several years of research.

### **The Mineral Elements In Plant Production**

The use of soil for greenhouse production before the 1960s was common. Today few growers still use soil in their mixes. The bulk of production is in soilless mixes. Soilless mixes must provide support, aeration, nutrient and moisture retention just as soils do, but the addition of fertilizers or nutrients are different. Many soilless mixes have calcium, magnesium, phosphorus, sulfur, nitrogen, potassium and some micronutrients incorporated as a pre-plant fertilizer. Nitrogen and potassium still must be applied to the crop during production. Difficulty in blending a homogeneous mix using pre-plant fertilizers may often result in uneven crops and possible toxic or deficient levels of nutrients. Soilless mixes that require addition of micro and macronutrients applied as liquid throughout the growth of the crop actually give the grower more control of his crop. To achieve optimum production, the grower can adjust nutrient levels to compensate for other environmental factors during the growing season. The uptake of mineral ions is dependent on a number of factors in addition to weather conditions. These include the cation exchange capacity or CEC and the pH of the growing medium and water supply, as well as the total alkalinity of the irrigation water.

### **CEC or Cation Exchange Capacity**

The Cation Exchange Capacity refers to the ability of the growing medium to hold exchangeable mineral elements within its structure. These cations include ammonium (nitrogen), potassium, calcium, magnesium, iron, manganese, zinc and copper. Peat moss, coir and mixes containing bark, sawdust, and other organic materials all have some level of cation exchange capacity.

### **pH: What Does It Mean?**

The term pH refers to the alkalinity or acidity of a growing medium water solution. This solution consists of mineral elements dissolved in ionic form in water. The reaction of this solution whether it is acid, neutral or alkaline will have a marked effect on the availability of mineral elements to plant roots. When there is a greater amount of hydrogen (H<sup>+</sup>) ions the solution will be acidic (pH<7.0). If there are more hydroxyl (-OH) ions, the solution will be alkaline (pH>7.0). A balance of hydrogen and hydroxyl ions results in a pH neutral soil (pH=7.0). The optimum pH range for most crops is 5.5 to 6.2 or slightly acidic. This creates the greatest average availability of all essential plant nutrients. Different mineral elements are available at different pH levels. Extreme variations in pH can cause mineral deficiencies or toxicity by binding up or releasing large amounts of various elements.

### **Enzymes: The Workhorses of Life**

Enzymes are proteins which are involved in increasing the rate and efficiency of biochemical reactions. Most enzymes require metal ions for activation and function. Without proper enzyme function, growth would cease in an organism. Most of the essential mineral elements affect enzymes in multiple ways. Many of the roles of mineral elements in enzymes are discussed in the following paragraphs.

Our thanks to Dr. Neal for allowing us to publish his article in The Sheath. [www.dyna-gro.com](http://www.dyna-gro.com)

Next month: Part 2 - A discussion of specific essential macro and micro nutrients as well as beneficial micronutrients.

## Car Pool Corner

Have more fun! Talk about your orchids all the way to the meeting! Carpool with other members. You can advertise for a ride or offer a ride to and/or from the meeting. It's up to you whether you want to share gas costs, trade driving, whatever. Send your car pool ad to [the\\_sheath\\_editor@earthlink.net](mailto:the_sheath_editor@earthlink.net) by the 5th of the month.

## Unclassifieds

Members may advertise orchid related items. The ad is free. E-mail your ad to [the\\_sheath\\_editor@earthlink.net](mailto:the_sheath_editor@earthlink.net) or mail to 878 Cashew Way, Fremont, CA 94536. Be sure to include your name and phone number. Ads must be received by the 5th of the month to be included that month's newsletter.

## August Board Meeting

The August Board meeting, a pot luck, will be held on Saturday the 9th at 11:30 a.m. at the home of Dennis Olivas, 221 Netherby Place, Pleasant Hill. Please bring a dish to share, such as salad, veggies, or a dessert. Dennis will supply the meat. Non-board members planning to attend should contact Dennis by e-mail by August 1: [d.olivas@comcast.net](mailto:d.olivas@comcast.net). The board meetings are open to all members and we'd like to encourage you to attend. If you have any issue that you'd like brought to the board, but cannot attend, you can call any board member and they will present your issue for you.

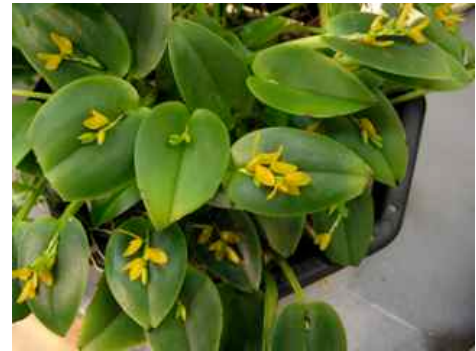
Paul Reeve has agreed to take the Director at Large board position vacated by Scott Dallas.







Jeff Trimble shows Ken and Amy Jacobsen his latest Tai Chi posture at the June meeting. Su McMurtry averts her eyes. Newsletter editors should not be allowed to have cameras.



### 2008 Board of Directors/Chairpersons

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Librarian: Rex Castell 650-576-4637

AOS Rep: Dennis Olivas 925-969-1246

Mailing Address: P.O.Box 6894

San Mateo, CA 94403-6894

Our congratulations to our members - Peninsula Orchid Society Members January - June 2008 AOS Awards - Awarded at Judging Centers in Oakland and San Francisco (photos and judges comments may be seen at <http://www.aospacificcentral.org/> Not listed here are awards earned at area orchid shows. Those may also be found at the AOS Pacific Central Web Site.)

1/3/08 - Pacific Central Judging Center - San Francisco

**Amy and Ken Jacobsen** Masdevallia Tiger Kiss 'Winston' (Masd. Golden Tiger x Masd. Monarch) HCC 77

2/18/08 - Pacific Central Judging Center - Oakland

**Chen-Hao Hsu** Polystachya anceps 'Pui Chin' species CHM 83

3/4/08 Pacific Central Judging Center - San Francisco

**Anna S. Chai** Masdevallia Tom Nasser 'Young Ik' (Masd. Marguerite x Masd. veitchiana) AM 85

3/17/08 - Pacific Central Judging Center - Oakland

**Amy and Ken Jacobsen** Lycaste Chita Parade 'Winston' (Lyc. Wyld Sunset x Lyc. Chita Melody) HCC 76

4/1/08 - Pacific Central Judging Center - San Francisco

**Kreg Martin** Bulbophyllum lamingtonense 'Cozette' species CBR

**Kreg Martin** Dendrobium linearifolium 'Cozette' species CBR

4/21/08 - Pacific Central Judging Center - Oakland

**Anna S. Chai** Cymbidium Arkaba 'Iceberg' (Cym. Sleeping Giant x Cym. Sarah Jean) HCC 77

5/6/08 - Pacific Central Judging Center - San Francisco

**Weegie Caughlin** Cymbidium Little Black Sambo 'Burbank' (Cym. madidum x Cym. canaliculatum) AM 81

**Thu Ba Bguyen** Cymbidium Sweet Devon 'Sweet' (Cym. suave x Cym. devonianum) AM 82 and CCM 88

**Thu Ba Bguyen** Cymbidium Sweet Devon 'Longchain' (Cym. suave x Cym. devonianum) HCC 76

**Anna S. Chai** Masdevallia Golden Monarch 'Hyun Seak' (Masd. Golden Angel x Masd. Monarch) AM 62

**Anna S. Chai** Masdevallia melanoxantha 'Hyun Ae' species HCC 75

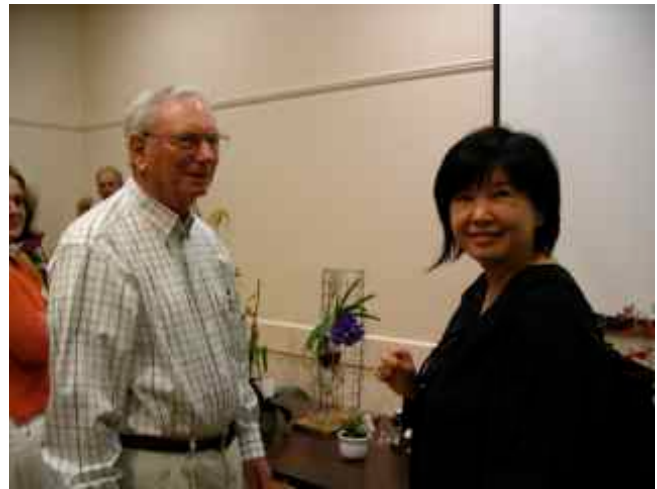
**Anna S. Chai** Oncidium concolor 'Mother Teresa' species CCM 82

6/16/08 Pacific Central Judging Center - Oakland

**Amy and Ken Jacobsen** Masdevallia unnamed hybrid 'Winston' (Masd. coccinea x Masd. Swallow) HCC 77

HCC - Highly Commended Certificate; AM - Award of Merit; CHM - Certificate of Cultural Merit; CBR - Certificate of Botanical Recognition; CCM - Certificate of Cultural Merit.

(Any misspellings are actually my typos - Ed. PS Warning - Don't try this at home!)





*Don't forget to sign up for the  
greenhouse tour at this meeting or  
by calling Brett Francis!*

*Welcome to our new board member  
Paul Reeve!*

*Peninsula Orchid Society  
The Sheath  
Chaunie Langland, Editor  
878 Cashew Way  
Fremont, CA 94536*