Plumeria Potpourri

www.theplumeriasociety.org

Come to the March 8th meeting!

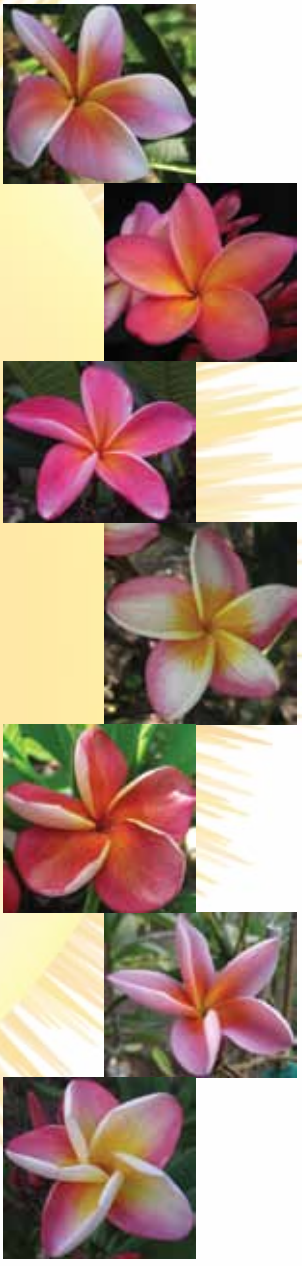
Tuesday, March 8, 2016, 7:30 p.m.
Cherie Flores Garden Pavilion, 1500 Hermann Drive, Houston, Texas

... anyone with an interest in plumeria is invited to attend ...

MEETING TOPIC

Bringing Plumerias Out of Winter Storage ...

... so they look like this!



The Plumeria Society of America, Inc.

March 2016

President's Corner

by **Mark Wright, Texas (wright5447@sbcglobal.net)**

Hello again ... Yes, you have me for two more years. We need to make them good ones.

Speaking of good things, the IPC 2016 is just around the corner in May. Most of the speakers and workshops are set. Look for details about the speakers and their topics on page 3 of this newsletter—information from Eulas Stafford. I would like to extend many thanks to all who have worked so hard on this venture.

The PSA website is a work in progress. I think the work done this past year will enhance that progress, and I look forward to working with everyone to make this site all it can be.

I'm glad to say we have an excellent slate of Board officers who bring a variety of talents to the society. I look forward to working with everyone to continue what has been started and keep it going forward.

If you are attending the March meeting, we'll be covering bringing plumerias out of winter storage for the many new members attending our meetings. You will also have the opportunity to volunteer to help at the PSA booth at the upcoming annual Home Show. There will also be other chances throughout the year to serve the society in other capacities. With your help, as always, we can make this a productive and enjoyable time.

PSA Board of Directors 2016

Sofia Campbell	**Bryan Holland**	**Bob Arend**	**James Goodrum**	**Mark Wright**	**Karen Babb**
Director	Director	Treasurer	Vice President	President	Secretary

Patricia Weeks
Director (not shown)

The PSA members would like to thank the Board for their commitment to work for the continued benefit of the society. We hope all of you will give your support and help so the society continues to benefit all of us.

by **Eulas Stafford, Texas**

2016 INTERNATIONAL plumeria CONFERENCE

MAY 19-22 | NAPLES, FL, USA

Learn from expert growers from **Thailand Texas Hawaii Australia California Japan Florida**

4 Keynote Speakers

- Dr. Richard Criley, University of Hawaii at Manoa
- John Ingwersen, Jungle Jack's Plumerias, San Diego/Thailand
- Dennis Schmidt, Thai Frangipani, Thailand/Australia
- Emerson Willis, Texas

13 Workshop Sessions

- Plumeria DNA research findings
- Overview of all propagation methods with demos
- Review of species
- Growing seedlings successfully
- Expert panel Q&A
- Hands-on lei-making workshop
- Much more!

Location

World-renowned Naples Botanical Gardens (**www.naplesgarden.org**)
Home of the Nationally Accredited Plumeria Collection
Over 500 plumeria plants and trees on Florida's beautiful Gulf Coast

Registration

Early Bird Discount through 4/1/16!—only $240
($290 after 4/1/16)

Register Now!
www.2016IPC.com

Includes

- All conference keynotes and sessions
- Luau dinner and authentic island entertainment
- Plumeria Collection tour at Naples Botanical Gardens
- All lunches

Also! Day rate: $100 per day
See website for travel information and discounts

Optional

Tour of Florida Colors Nursery— May 18th—$50

- Nearly 1,000 plumeria trees plus 1,000s of potted plants
- Includes round-trip bus transportation, tour, lunch, $35 credit at Florida Colors Nursery

Details subject to change; check website for current details.

Treating Plumeria Cuts: Part #2 of 5—Why Plumerias Heal So Slowly

by **George Hadjigeorge, Texas**

In order to understand what we need to do to properly seal plumeria cuts, we need to understand how plumeria cuts heal. It takes a very long time to fully heal plumeria cuts—fully healed means that the original cut is encapsulated by solid wood.

With respect to pruning, plumerias are very different from fruit trees in many ways. Let us begin with the pruning basics in order to understand these differences and how to deal with plumeria cuts. When pruning a tree, any tree, it is recommended to cut at an angle away from a bud and as close to the last node as possible. The left picture below shows a pear tree branch. Pick which will be the last node (to control the direction of the new branch), and make a cut as shown in the middle picture below. Most trees will develop a branch on the last node. The right picture shows what a typical pruned branch would



look like eight months later. The cut will be completely healed (covered by bark and wood), and there is no chance it could sustain any damage when exposed to rain. Multiple nodes will have turned into branches. Also, note that the pruned branch grows fast in diameter. Fruit trees are pruned heavily every year, so most branches that are pruned every year are less than ½" in diameter. They require no sealant to heal properly. No commercial grower ever puts sealant on small cuts on fruit trees.

Most trees behave like this when pruned. Fruit trees are pruned heavily every year in order to grow properly and bear a good size crop. Some trees, like citrus, require little or no pruning. However, they are pruned heavily when young in order to shape the tree. They behave similarly to fruit trees when pruned. The pictures in the next column show that pruned citrus branches heal fast, in less than a year when properly cut.


Plumerias on the other hand heal very slowly. No plumeria ever fully heals in less than a year like fruit trees do. A lot of plumeria cuts may take as much as a decade or two to fully heal. In addition, unlike fruit trees, it does not matter at what angle a plumeria branch is cut—it will leave a stub 80% of the time. This is because a pruned plumeria branch rarely will grow a side branch on the last node. The pictures below show some plumeria branches that were pruned at an angle away from the last node,


as recommended for fruit trees. Note how the last node did not develop into a branch, leaving a stub.

The pictures below show plumeria branches that were pruned square. The last node did not develop into a side branch, leaving a stub. Typically a lot of leaf nodes near the cut swell but only one or two develop into side branches, and very rarely it is the last node that grows.




Why are stubs so bad? Because plumeria stubs do not heal, and as I will show later, all plumeria stubs die back to the nearest side branch (pictures in the next column), it is just a matter of time. Typically, it takes one to five years for a plumeria


stub to die back. This not only delays the healing process (in addition it hinders the healing process), it might weaken the side branch, and it might lead to total branch die back.

Rarely, less than 20% of the time, a pruned plumeria branch will not require a re-cut, like in the picture to the right. This cut will heal properly. As a result, it does not really matter at what angle a plumeria branch is pruned; the cut will most likely develop a stub, which will require a re-cut in order for the cut to heal fast and heal properly.

Large cuts on fruit trees heal relatively quickly. For example, this large cut on a pear tree (pictures below) fully heals in less than three years. A callus ring develops all around the cut and gradually progresses inwards until the whole cut is completely closed. A plumeria cut will take 15–20 years to fully heal in a similar fashion. Understanding why is the key in developing the best way to seal plumeria cuts.


Pear trees do not have a pith, and the cut is solid wood. The callus ring around the cut is solid wood with bark over it and gradually encapsulates the whole cut (pictures below). The pictures below show a 25-year old pear tree healing a 6" diameter cut (trunk is 16" in diameter). So, cambium wood develops around the whole perimeter of the cut and gradually seals the cut. When the cut is healed, it is enclosed in solid wood with bark over it, and the cut is fully protected. Even if you put nothing on the cut, the tree will heal properly. Any damage to the wood from drying or being exposed to the elements is very limited because we are dealing with solid wood. Using pruning paint over the cut is beneficial, because it eliminates/minimizes damage, and the cut heals faster and better.


Now, plumerias are very different. Here is a fully healed plumeria cut on a 27-year old tree and its cut-away view (pictures below). The original branch cut is somewhere between 15–20 years old. The original cut branch with its wood and pith are still visible. It stopped growing when the branch was cut. Visible is the massive new wood that encapsulated the original branch end cut and supported the new side branch. As the picture shows, solid wood encapsulated the cut end of the original branch (the end is marked with the dark spots of dead wood). Water can no longer get to the original cut to cause damage. This is a good example of what a well-healed plumeria cut looks like.


Some plumeria cuts have great difficulty fully healing. Here is a 20-year old cut that has not fully healed yet (pictures below). The pith is still exposed to the elements. New wood is trying to grow over the cut and seal it, but it has a long time to go before that happens. Healing is just proceeding very slowly. Note: the original cut appears to have had a lot of damage when young.


Here is another example of a 15-year old cut that has great difficulty healing. The dark marks show the end of the original cut. The pith has extruded about 1" passed the original cut. The extruded part is solid


hard wood (the pith has woodified). As I will show shortly, this happens due to external water damage. New wood is coming from the sides trying to heal the cut, but it is running into the woodified pith and cannot overcome it. Notice the front of this new wood is flat against the cylinder of woodified pith (growing outwards). It will take a very long time for this cut to fully heal, if it ever does. The pith extrudes out because when the pith woodifies it expands (becomes less dense), and since it is contained, it grows out along the opening.

So, what causes the woodified extruded pith? The pictures below show one that happened in less than one year after the cut was made. The pith is rising significantly above the cut wood. The thick wood had developed many cracks from the exposure to the weather elements (has no protection). The cut-away view shows that the extruding pith has three different colors: a) the still alive healthy white pith, b) the light brown woodified hard pith at the end, and c) the actively rotting dark brown pith. If the pith is sealed by the dead first layer, why is the pith still rotting underneath? This means the healthy pith underneath is getting wet from the rain. Apparently, water enters the cracks that developed in the wood and gets to the healthy pith below. If this is left alone as is, it will sustain severe damage over time, which will delay the healing process. So, an extruding pith is a very bad sign. It happens mostly with older branches with thick wood. Thus with extruded piths, first the healthy pith is actively rotting underneath and second the woodified extruded pith will hinder healing in the future, just like in the previous example. This shows that plumeria cuts must be sealed with sealants to keep rainwater out. Remember, it will take at least 10 years to heal the cut, and the protection must last a long time. However, the cut cannot be sealed with sealant until we do something about rotting of the pith that happens from trapped internal moisture (see part #1 of this article in January 2016).

Why is there such a huge difference in the healing periods of fruit trees (typically 1 year for small cuts, 3 years for large cuts) and plumerias (15–20 years)? Apparently, plumerias are very different and heal in a very different way. We need to understand this difference in order to figure out how to properly seal plumeria cuts. Pruning paints work well with fruit trees but not with plumerias.

Studying how grafts heal is a good way to figure out the differences in healing between fruit trees and plumerias. The picture below shows a "V" notch pear graft. A "V" notch is carved into the rootstock as the left picture shows. The scion, which is normally smaller in diameter, is carved to match the "V" notch. The idea is when the two are put together (right picture below), there will be cambium contact throughout the whole "V." This increases the chance of a successful graft significantly because some cambium contact is necessary—the more the better.

Fruit tree grafting is done in the dead of the winter (January in Houston), and the scion and rootstock have zero sap. It will be 4–6 weeks before the scion will break dormancy and start growing, so it is crucial to keep the scion from drying out and dying (it is not getting any sap from the rootstock during this period). The graft is wrapped with grafting tape and sealed with pruning paint or grafting wax air tight (pictures below). The end of the scion is also sealed with pruning paint.

Pear grafts heal and grow very quickly. A pear graft will grow six to eight feet long the first year. The graft is fully healed and needs no

support in just two months (pictures below). The scion, which starts smaller in diameter than the rootstock, becomes much bigger in diameter in just two months. The graft flat fully heals and disappears.


It is very informative to take apart a pear graft as soon as the scion breaks dormancy and starts growing (pictures below). The cambium contact "V" as well as all of the top flat are fully callused. The right picture below shows the scion and the rootstock taken apart. The scion does not have a trace of callus on it. The rootstock on the other hand has callus all around the "V" and the flat. Remember, the flat is not making contact with the scion, it is just sitting there. Yet it develops a nice callus. This is why pear trees heal fast, all cut surfaces develop healing callus. And all the action and healing in a pear graft is done by the rootstock. The scion contains no sap and cannot do anything.


Plumerias are completely the opposite from pear trees. The pictures below show a failed plumeria graft. A budding tape was used on purpose to make the graft fail. Budding tapes are designed to stretch at an appreciable rate. The rootstock remained completely flat, just like it was originally cut. The cambium line developed no callus. The pith did not swell. All of the rootstock's energy went into growing a side branch. It is really remarkable that the rootstock is sitting there like a rock, and it is doing absolutely nothing compared to pear grafts where the rootstock is doing all the work. This means that when a plumeria branch is pruned, it will not develop a cambium callus to heal the cut—it will just sit there! We will look at this shortly. On the other hand, the scion is showing a lot of action, the pith has swelled and the cambium line has developed a callus.


Here are better pictures of the scion. The right picture below shows how much the pith has swollen, just like a cutting trying to root. The left picture shows the nice cambium callus that has developed all around the perimeter. It seems that the scion is doing all the work in plumeria grafting. Plumeria scions contain a lot of sap, stored in the pith, and can remain alive on their own for months. It is this stored sap that allows the scion to do all the action in making the graft work.


These grafting experiments suggest that a cut plumeria branch will sit there and do nothing with respect to trying to heal the cut. This is really remarkable. Here is additional proof of this. The pictures below show a pruned branch after three months. The cut was healed with sulfur to grow bark over the pith and stop the cut from evaporating moisture. After two weeks, it was sealed with DAP® sealant to protect it from external moisture. As the pictures below show, after three months the cut looks good; it is in perfect shape and has sustained no damage. However, the cut-away view shows that the cut has no cambium callus, and there is no action going on at the pith or deep in the cambium line. How in the world does this cut ever heal if it has done nothing in three months? The grafting experiments are right on. This explains why fruit tree cuts heal fast and well, whereas plumeria cuts take a very long time to heal well. **Plumerias do not develop healing callus at the cut.**


This is such an important result I am going to show an even older example of it. The left picture shows a well-sealed plumeria cut (sealed with DAP® sealant) that is more than one year old. The cut

surface is totally flat, and there is not a sign of any cambium callus growing underneath the sealant. It is just sitting there and not healing. The right picture shows a two year old cut. Bark and skin have grown over the pith to protect it, and it has nothing on it, so we can clearly see any healing going on. The skin on the pith looks good; it even has green color showing it is still alive. There is no cambium callus to heal the cut (to cover the cut with solid wood with skin). Even after two years, it is just sitting there and not healing. How do these cuts ever heal? No wonder it takes a decade or two to heal plumeria cuts.

We know that cuttings develop a very nice callus in both the pith and around the cambium line when exposed to high humidity environments (pictures below). The cambium callus grows roots and turns into wood and anchors the roots. The pith at the end only develops bark and skin the first few years, no wood. Eventually, in a few years, the bottom of cuttings get covered with solid wood.

We could accelerate covering the bottom with solid wood by fitting a nylon strap to the bottom of cuttings when we callus them. This forces the cambium callus, which normally causes the cutting bottom to flare out, to spill underneath and cover the bottom (pictures below). So in just two months we can cover the whole bottom of the cutting with solid wood. Could we do something similar with cut branches if we expose them to high humidity? Would cut branches develop a cambium callus if exposed to high humidity?

I did some experiments in a humidity box to evaluate this. I took some mid-cuts (both ends cut), and I dipped both ends in sulfur and placed them in the horizontal position in a humidity box at about 95% humidity. I callused them for two weeks. Does the plant know which way is up and will the two ends of the mid-cut callus the same way? The left picture shows the bottom of the cutting. It developed a cambium callus as expected, and the leaf nodes did not show any change. The right picture shows the top of the cutting. The leaf nodes swelled to grow side branches. The pith developed bark and skin but there was not a trace of cambium callus! Without a cambium callus at the cut branch all bets are off. Very little can be done, and it will take a very long time to heal the cut. These results are in full agreement with the results from the grafting experiments. The only positive thing about this experiment is that it shows we can grow bark and skin over the pith of cut branches by using high humidity. The right picture shows this cutting about one year after it was rooted. The top cut looks good and developing bark and skin over the pith has protected the cut well from the weather elements. It looks really good. The question is how to make a humidity box at the end of cut branches on a planted tree? I will answer this in the next article of this series.

Summarizing—fruit trees develop cambium callus on all cut surfaces. In addition, fruit trees grow very fast. As a result, fruit tree cuts heal relatively fast (within one year on small branches), and the cuts are covered with solid wood with bark. In addition, fruit tree branches consist of solid wood, and it does not bother them that the cuts stay wet under sealants (from internal moisture). As a result, pruning paints work well with fruit trees and most trees. Small fruit tree cuts (less than ½" in diameter,

require no sealant to heal fast and properly. Plumeria cut branches do not develop cambium callus to heal; they just sit there. In addition, plumeria branches are thick when pruned (typically about 1" in diameter) and grow very slowly. As a result, they heal very slowly, and it takes a very long time (15–20 years) to fully heal. High humidity could not be used to develop a cambium callus at the cut in order to aid the healing process. However, high humidity could be used to grow natural bark and skin over the pith of cut branches to stop the flow of internal moisture from the cut and to protect the pith from rain water. The best we can do is to develop bark and skin over the pith to protect it over the 15–20 years it will take to encapsulate the cut in solid wood. We will explore this in the next article of this series. In the last article (#5 of this series), I will show some neat ways based on this research that we can use to accelerate the healing process and fully heal plumeria cuts with solid wood over the cuts in just a few years.

2016 Houston Area Plant Sale Calendar

by **German Collazos, Texas**

The first plant sale for 2016 is June 11th at Clear Lake, followed by the sale at the Fort Bend County Fairgrounds on July 23rd. Please note the key dates summarized below. The growers' meetings will be held after the general meetings in order to allow time for people to arrive. Below is a time line of important dates for our 2016 sales. Please contact me with any questions at **(713) 670-4064** or **german.collazos@toshiba.com**.

Clear Lake Sale—June 11

May 3	Commitment to sell at Clear Lake
May 10	Sellers' meeting (after general meeting)
June 1	Cultivar list for Clear Lake sale
June 11	Sale at Clear Lake

Fort Bend Sale—July 23

July 5	Commitment to sell at Ft. Bend
July 12	Sellers' meeting (after general meeting)
July 13	Cultivar list for Ft. Bend sale
July 23	Sale at Ft. Bend

Phoenix Plumeria Growers and Sales

Spring Meeting and Sale
Noon, April 17, 2016

Private residence in Glendale, Arizona
All are welcome—there are no registration fees, but please RSVP on our Facebook page

Plumeria Society of South Texas

Garden Senior Center
532 Greely St., Corpus Christi, Texas
Contact: John Balcar at 361-853-3782

Meeting Calendar 2016

March 23
May 25
September 28
October 26
July 23—Plant Sale

Coachella Valley Plumeria Society

www.cvplumeriasociety.org

Calendar 2016

January 30	General Meeting
February 28	General Meeting
March 20	General Meeting
April 24	General Meeting
May 21	Flower Show
June 26	General Meeting
July	Jungle Jack's Field Trip
September 25	General Meeting
October 30	General Meeting
November 5	Luau
November 20	General Meeting

General Meetings: Sundays, 2:00 p.m. to 3:30 p.m.
Metropolitan Community Church of the Coachella Valley
32150 Candlewood Drive, Cathedral City, CA 92235

http://www.theplumeriasociety.org

JOIN US ON facebook

Our new website is easier to navigate and to find information about plumeria care, cultivar registration, society news, events, and much more! Since the website is new, please check for updates and to see added features such as the flower identification database and a members only newsletter archive! Below is the current MEMBERS ONLY login and password information that will be needed to access the website's newsletter archive.

Log in: psamember Password: Scottpratt93

Twitter feed: @plumeriasociety

Joining the PSA ...

www.theplumeriasociety.org

Click on "Join the PSA" tab at the top of the home page.
To join by mail, select PDF.
To join online, select Online Form (Paypal).

When joining by mail, send a check to:
The Plumeria Society of America, Inc.
P.O. Box 22791
Houston, TX 77227-2791, USA

Dues are $25 per year

When does your PSA membership expire?

Look on the newsletter envelope mailing label for your membership expiration date

PSA Calendar—2016

January 12 .....meeting
March 8 .....meeting
May 10 .....meeting
June 11 .....Show & Sale I (Seabrook/Clear Lake)
July 12 .....meeting
July 23 ..... Show & Sale II (Fort Bend County Fairgrounds)
October 11 .....meeting
October 15 .....Fall Social and Luau

- Meetings are held at Cherie Flores Garden Pavilion, 1500 Hermann Drive, Houston, Texas 77030.
- Meetings begin at 7:30 p.m. You're welcome to come 30–45 minutes before the meeting for snacks and chat.
- We have a raffle, guest speakers, and more. Please join us to learn more about plumeria care and collecting.
- Non-members are always welcome!
- Bring your blooms. Bring your friends.
- Bring plants, cuttings, etc. for door prizes! These can be anything, not just plumerias.

Purpose of The Plumeria Society of America

1. Promote interest in and increase knowledge of plumeria hybridization, propagation, and culture of plumerias.
2. Share this knowledge with hobbyists interested in plumerias.
3. Provide a register for recording, identifying, and classifying by name new types and varieties of plumerias.
4. Encourage and unite plumeria enthusiasts around the globe, throughout America, and across the seas.

PSA Officers/Committee Members—2016

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Black Ruby


Dane


Don Ho


Mr. Ambassador


Doric Allison


Magenta Star


Dwarf Richard Criley Rainbow


Celebrity


Haleakala


Hawaiian Rose


Jefferson's Gold


Lilikoi

Varieties from
Jim Little Nursery and Farms
Photos by Danny Kashou
Southern California


Tiki Torch