



S.F.V.B.S.

SAN FERNANDO VALLEY BROMELIAD SOCIETY

JUNE 2019

P.O. BOX 16561, ENCINO, CA 91416-6561

sfvbromeliad.homestead.com

sanfernandovalleybs@groups.facebook.com

Twitter is: **sfvbromsociety**

Instagram is: **sfvbromeliadsociety**

Elected OFFICERS & Volunteers

Pres: **Bryan Chan** V.P.: **Joyce Schumann** Sec: **Leni Koska** Treas: **Mary Chan** Membership: **Steffanie Delgado**
Advisors/Directors: **Steve Ball, Richard Kaz –fp, & Carole Scott,** Sunshine Chair: **Georgia Roiz** Refreshments: **vacant**
Web: **Mike Wisnev,** Editors: **Mike Wisnev & Mary K.,** Snail Mail: **Nancy P-Hapke** Instagram & Twitter & FB: **Felipe Delgado**

next meeting: Saturday June 1, 2019 @ 10:00 am

Sepulveda Garden Center 16633 Magnolia Blvd. Encino, California 91436

AGENDA

9:30 – SET UP & SOCIALIZE

10:00 - Door Prize drawing – one member who arrives before 10:00 gets a Bromeliad

10:05 -Welcome Visitors and New Members. Make announcements and Introduce Speaker

10:15 –NO Speaker – There is no speaker this month. Instead, we will discuss the upcoming show and sale, and have a longer social hour. <>**11:15 -**

Refreshment Break and Show and Tell:

Will the following members please provide refreshments this month: **V W X Y Z A B** and anyone else who has a snack they would like to share. If you can't contribute this month don't stay away.... just bring a snack next time you come.

Feed The Kitty

If you don't contribute to the refreshment table, please make a small donation to ([feed the kitty jar](#)) on the table; this helps fund the coffee breaks.

11:30 - Show and Tell is our educational part of the meeting – Members are encouraged to please bring one or more plants. You may not have a pristine plant but you certainly have one that needs a name or is sick and you have a question.

11:45 – Mini Auction: members can donate plants for auction, or can get 75% of proceeds, with the remainder to the Club

12:00 – Raffle: Please bring plants to donate and/or buy tickets. Almost everyone comes home with new treasures!

12:15 - Pick Up around your area

12:30 –/ Meeting is over—Drive safely <>

Bromeliad Show is Sat. & Sun June 8 & 9.

Sepulveda Garden Center

Are you almost ready?

Now is a good time to remove large pups and prepare to sell or donate pups for Club Sale. At the show we need Volunteer Docents, Volunteers for Reception & Membership Help with Set-Up & Break Down

Prepare 2 or 3 plants

We still have time to get our plants ready. Each member should commit to have at least 3 plants ready for our show. Remove pups that are half or 2/3 the size of the mother plants. Wear long sleeves and gloves when handling the spiny plants. When potting tall or large plants, you can add a few rocks or broken pottery to the bottom of the pots to prevent them from falling over. Use proper potting mixture. Pot the plant and if necessary use chopsticks or small rocks to brace the pup upright; pup's root faster when stabilized. Place the pot on a bench or in an area where it will receive bright diffused light. Before the show wipe the leaves and flower pots with a damp cloth. In 15 minutes your 3 plants are ready to show.

Mother plants or large pups are now ready for the Show!

- **Participation Rewards System** – This is a reminder that you will be rewarded for participation. Bring a Show-N- Tell plant, raffle plants, and Refreshments and you will be rewarded with a Raffle ticket for each category. Each member, please bring one plant <>

Please pay your 2019 Membership Dues

NEED TO RENEW ?.....

Pay at the meeting to: Membership Chair – Steffanie Delgado or Treasurer - Mary Chan

or Mail to: SFVBS membership, P.O. Box 16561 - Encino, CA 91416-6561

Yearly Membership Dues - \$10 for monthly e-mail newsletters or \$15 for snail mail

Please Put These Dates on Your Calendar

Here is our 2019 Calendar. Rarely does our schedule change..... however, please review our website and email notices before making your plans for these dates. Your attendance is important to us

Sat & Sun - June 8-9?	SFVBS Bromeliad Show & Sale
Saturday July 6	Ernesto Sandoval
Saturday August 3	STBA
Saturday September 7	STBA
Saturday October 5	STBA
Saturday November 2	STBA
Saturday December 7	Holiday Party

STBA = Speaker To Be Announced

Speakers Let us know if you have any ideas for Speakers about Bromeliads or any similar topics? We are always looking for an interesting speaker. If you hear of someone, please notify Joyce Schumann.

Taxonomic Tidbits: *Canistrum*, *Wittrockia* *Edmundoa* and more – Part 5 (*Nidularium*)

By Mike Wisnev, SFVBS Editor (mwisnev@gmail.com) Photos by Wisnev unless noted.
San Fernando Valley Bromeliad Society Newsletter –June 2019

Last month started the discussion of the genus *Nidularium*, and this month finishes it.

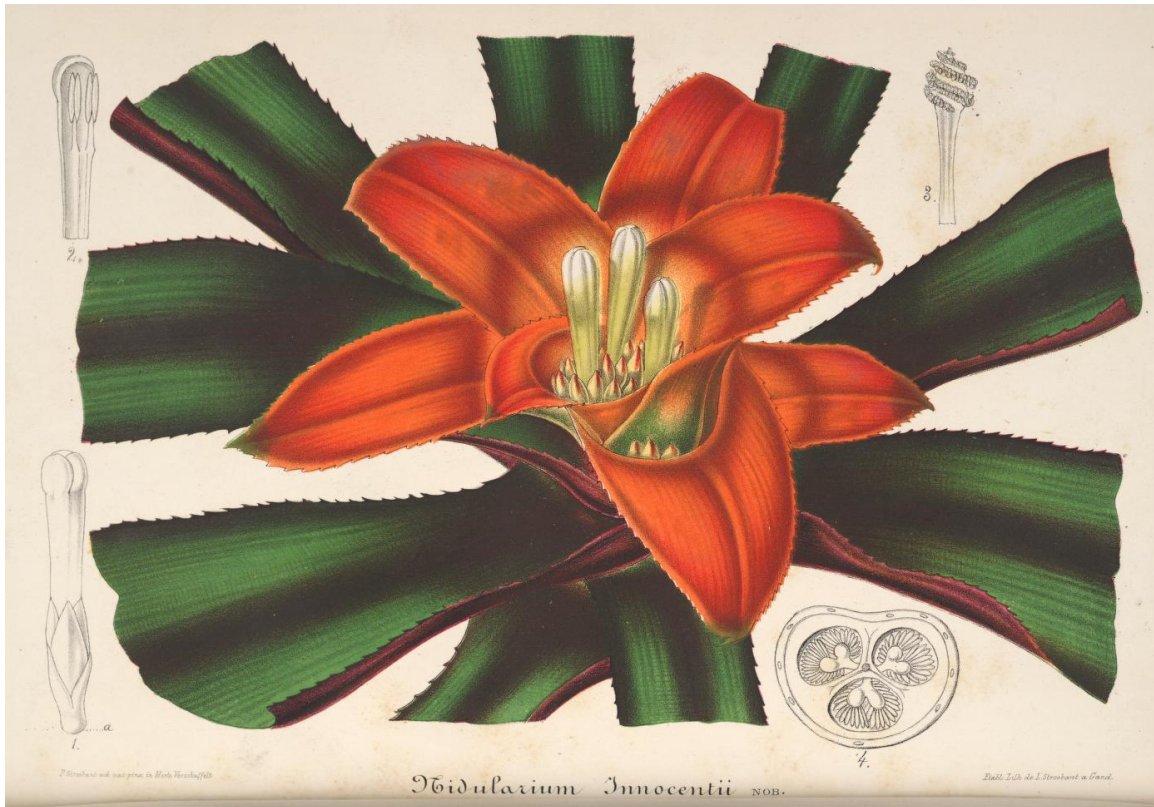


Nidularium cariacense. Photo by Butcher.

This odd species with narrow leaves was once considered a form of *N. procerum*. Lemaire says it can vary considerably sometimes causing it to be confused with *N. scheremetiewii*, shown earlier.

History. Lemaire named the genus in 1854 – the sole species was *N. fulgens*. He described *N. innocentii* the next year. Beers and Regal

described a few more the next few years, including *N. purpureum* and *N. scheremetiewii*, shown above, as well as some species that are now Neos.



***Nidularium innocentii*, from L'illustration Horticole (1862).**

This is the second *Nidularium* to be described. Its cultivars are well known in cultivation. See the June 2016 Newsletter for an article by Derek Butcher

With the exception of Baker's 1889 Handbook (which placed these species in *Karatas* subg. *Nidularium*), the genus has generally been recognized since its inception. However, most current Neo species described before 1890 were treated as *Nidularium*, as were most current *Canistropsis* for most periods before 1998. The details are described below.

In 1860 Lemaire broke *Nidularium* into two subgenera – subg. *Regelia* contained the few Neos that had been described. In 1890, Lindman elevated subg. *Regelia* to a genus, and in 1896 Mez renamed it *Aregelia*. In 1896, Mez recognized two *Nidularium* subgenera - *Eunidularium* (with 14 species) and *Canistropsis* (one species).

Mez's 1896 key said *Aregelia* had simple inflorescences while *Nidularium* had compound ones. Mez's final monograph in 1934-5 key indicated *Nidularium* had compound inflorescences with erect closed petals that have a rounded apex. At that time, he moved subg. *Canistropsis* to *Aregelia*. *Nidularium* had two subgenera, *Ornithonidularium* (with 29 species) and *Pseudonidularium* (with one species that turned out to be a man made *bigeneric hybrid*).

In 1955, Smith included some current *Canistropsis* species in *Nidularium*, and in 1979 he reinstated *Nidularium* subg. *Canistropsis*. In 1998, Leme elevated subgenus *Canistropsis* to generic status, so currently there are no there are no subgenera.

Nidularium and Wittrockia. As noted in the article in Part 4, the *Wittrockia* genus expanded quite a bit from 1979 -97. Some of the new species had been *Nidularium*. When Leme revised *Wittrockia* in 1997, he moved five species back to *Nidularium*. Two of these are *N. amazonicum* and *minutum*, both pictured above, which form a species complex with *N. krisgreeniae* and *rolfianum*.

Some species.



N. 'Leprosa' photo by Mick Romanowski.” A few years back, I showed my ‘Leprosa’. Since my ‘Leprosa’ hasn’t flowered, I looked it up on BCR, and found this.

Most thought ‘Leprosa’ was a hybrid between *N. regelioides* and *N. rosulata*, but now the thinking, based on the work of Gerry Stanfield, is it is just a cultivar of *N. regelioides*, pictured earlier. If correct, it turns out I have two clones of the same species, albeit very different looking ones.

N. marigoii on left (photos by Marigo) and *N. itatiaiae* on right (photos by Leme). Both appeared in 41(3) BSJ pp 114-5.



Luiz Claudio Marigo

Figure 10

Nidularium marigoii, also in habitat, showing leaves colored a glossy, vivid red from the sun. The raised inflorescence is clearly evident.



Photographs by the author

Figure 8
Nidularium itatiaiae in habitat. The several attempts needed to locate the species in full bloom were finally rewarded. The leaves turn reddish under more intense sunlight and the primary bracts with green and red halves contrast with the coral-colored petals.

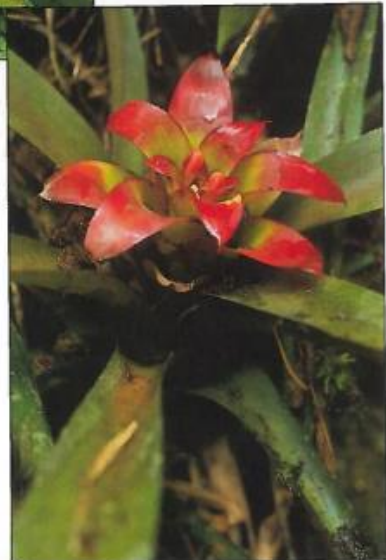


Figure 9
Inflorescence detail of
N. itatiaiae.



Luiz Claudio Marigo

Figure 11

N. marigoii inflorescence detail. The lower part of the petal is dark blue becoming a pink-lilac on the margins and apex.

The story about these two species shows a lot about the botanical process of identifying species. Leme wrote about bromeliads in Itataiai National Park in 1985 and identified the plants , collected by Luiz Marigo, on the left above as

N. itatiaiae. That species was described by Smith in 1955 based on a collection by Mulford Foster in 1939. This species had not been found again.

Later research showed the Marigo plants weren't consistent with herbarium specimens which led Leme to wonder if the species was quite variable, *N. pedicellatum* or a new species. More field and herbarium work led to the discovery of the plants shown on the right at the type locality and the determination that the Marigo plants were a new species, now named *N. marigoi*.



Nidularium linehamii

Photos by Derek Butcher

Described by Leme in 1993, he named it after Thomas Lineham, one of its collectors and the editor of the BSJ for about a decade. It has a number of different features, including pedicellate flowers, twisted petals after anthesis and a different stigma form, which suggest it might be a *Nidularium/Neo* hybrid. Its pollen is quite different, like a *Canistropsis*.

Recent Taxonomic Studies. Only two recent studies seemed to include more than one *Nidularium*. One included four of them, and they did not all fall on the same clade.¹ In contrast, a 2017 morphological study found they were monophyletic.²

In turn, a more recent 2018 study came to the same conclusion as the earlier ones – while *E. ambigua and perplexa* belonged together, *E. lindenii* didn't. The study was designed “to find possible morphoanatomical synapomorphies of the Nidularioid complex and its subclades, allowing new perspectives for studies of the phylogenetic relationships within this group.”³ It sampled 11 species in the Nidularioid complex (and four species that weren't) and used four different DNA markers for a phylogenetic analysis, and then examined 90 morphological features and chose 20 for further study. Most them relating to technical cellular features of the leaf blade and leaf sheath, in addition to a few traditional features like whether the inflorescence is simple or compound, the flowers are sessile or not, and the existence of petal appendages.

The study “concluded that the morphological characters typically used for genera delimitation in Bromelioideae, such as inflorescence type, presence of pedicellate flowers, presence of petal appendices, and presence of longitudinal callouses in the petal, are homoplastic and should be avoided in the circumscription of the genera from the Nidularioid complex.” Id at 120.

One common feature of all the species related to the trichomes on the leaves. The bromeliad family on the whole has leaves with trichomes while other families don't, or have different kinds. These trichomes are different for bromeliad subfamilies. As to this complex, the members all have elongated wing cells, while *Aechmea* and *Quesnelia* had rounded ones.

¹ Evans, T.M., R. Jabaily, A.P. de Faria, L.O.F. de Sousa, T. Wendt, and G.K. Brown. 2015. Phylogenetic Relationships in Bromeliaceae Subfamily Bromelioideae based on Chloroplast DNA Sequence Data. *Systematic Botany*, 40(1):116-128.

² Santos-Silva, F., Venda, A.K., Hallbritter, H.H., Leme, E. M.C., Mantovani, M., and Forzza, R.C. Nested in chaos: Insights on the relations of the 'Nidularioid Complex' and the evolutionary history of *Neoregelia* (Bromelioideae-Bromeliaceae). *Brittonia* 69 (8). 2017

³ De Oliveira F.M.C, R. Louzada, M. Wanderley and G. Melo-de-Pinna Morphoanatomical characters in the Nidularioid Complex (Bromeliaceae: Bromelioidae) from a phylogenetic perspective . *Flora* 239 (2018) 111-121.

Future of Nidularioid complex

As evidenced by the history of the *Nidularium* genus above, the genera of this complex have been long confused and species were moved from one to another.

Here are three different plants in the complex, all of which currently belong to a different genus – *Wittrockia*, *Nidularium* and *Edmundoa*. Even in flower, it might be hard to tell which genus is which in a picture like this – you probably need a close-up of the flowers. Out of flower, it seems impossible.



This phenomenon shows both the complexity of botany and the subjectivity of attempting to delineate genera. A group of related plants can be distinguished in various ways, and grouped in different ways by emphasizing different features. Botanists may disagree as to which are more important, and the same botanists come to different conclusions over time.

Hopefully, this is one virtue of phylogenetic studies. While the testing is hardly perfect and is based on sampling, it endeavors to eliminate some of the subjectivity. Species on one clade can't be grouped with those of another unless all species on both clades (and the clades between them) are grouped together. This leaves plenty of room for disagreement as to whether larger or smaller groups should be recognized as genera.

While the phylogenetic studies to date have clearly shown there is a Nidularioid complex, it seems fairly clear that *Canistrum* is not related to the other genera based on DNA testing. In addition, the various genera within the complex seem to be paraphyletic and a lot more species may be moved around in the future.

Before concluding, it is worth noting that I don't recall seeing a definition of the *Nidularioid* complex, or if there is one. (For that matter, the term "complex" has not been traditionally used in botany, and is presumably meant to convey a more informal group than family, genus etc.) It is generally intended to mean those genera in subfamily Bromeliaceae with a nidular inflorescence. As such, it originally included the five genera discussed in this series, along with *Neoregelia*.

If *Canistrum* is not related to the others phylogenetically, does that mean it is no longer part of the complex? This basically depends upon whether this complex is defined by morphological features alone, or by considering DNA testing. Interestingly, a 2017 study in which Leme was a co-author, stated at the outset that the complex had six genera, including *Canistrum*. In addition to noting the earlier DNA studies, it concluded the complex was not monophyletic by virtue of *Canistrum*. But it didn't specifically state that *Canistrum* shouldn't be part of the complex. In contrast a 2018 study in which Leme was not an author stated that the complex has five genera, and didn't mention *Canistrum*.

One last picture. When I did this Newsletter, my *N. Leprosa* had not flowered. However, it did a few months later. The next picture shows its flowers.



Nidularium 'Leprosa'.