



Newsletter

July 2019

Some of the entries in the Popular Vote at the April meeting

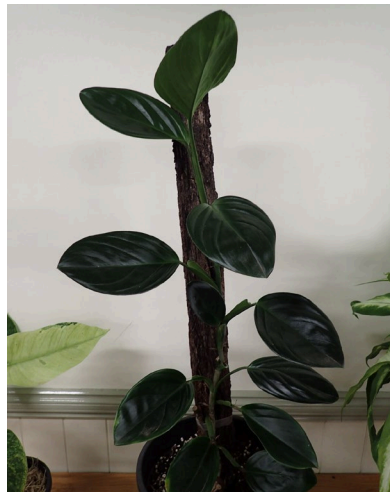
Dear ASA Members

Welcome to our July newsletter, everything is cooling down except our passion for aroids!

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Turn over to get started!





ASA NEWS

TIME TO RENEW!

All 2018-2019 ASA memberships expire on July 1st, as they follow the calendar of the financial year. If you haven't already renewed, now is the time to do it to ensure you do not miss out on another year of fun ASA activities. Anyone who doesn't renew will receive a short grace-period before their member privileges are revoked, which is why you are receiving this newsletter even if you haven't renewed. A membership form will be attached with this newsletter.

AROID BIOGRAPHY

One of our members, Matt Bogart, has kindly offered to write an account of his journey to Sumatra to find one of his favourite childhood plants in the wild. His account is very exciting, we hope that you take the time to read it. If anyone else has an aroid related story that they would like to share, please forward it to secretary@aroids.net.

ANNUAL GENERAL MEETING

We would like to take this chance to inform you all of our upcoming AGM held on the 7 August 2018. This is a significant meeting because, during the meeting, the committee is disbanded and all positions become vacant. Following this, the committee for the proceeding year takes over.

We have now started taking nominations, the secretary has sent out nomination forms in a recent email.

Nominations will close 5pm 13th July 2019.

Considering that we are an australia-wide society, we would like to do our best to represent the whole of australia. As such, we welcome nominations from all states, and will run an online election prior to the AGM if a vote is required so that all members may vote.

200TH MEMBER!

We are still a young society, but we are growing! Recently, we just reached our 200th member. To show our excitement, we offered a beautiful *Epipremnum amplissium* (donated by Neil) to whomever became member number 200. The winner was Juanita Miranda, who confessed that she had never won anything before. Congrats Juanita!

ASA ONLINE LIBRARY

We are now starting to collect an impressive back catalogue of Newsletters, information sheets, and presentations. Uploading them to Facebook can be messy, and things can be hard to find, so we have dedicated a section of our website to hosting these files. If you are looking for any of our earlier newsletters or files, just go aroids.net/files.html. To ensure these files are only accessible for ASA members, you will be asked for a username and password:

Username: ASA
Password: 2019



*A selection
of plants in
the popular
vote from
the
February
meeting*



UPCOMING EVENTS ANNUAL GENERAL MEETING

When: Wednesday 7th August 2019

Where: [Sunnybank RSL](#), 19 Gager Street, Sunnybank, Queensland, Australia 4109

Plant sellers arrive at 6:00pm set up by 6:15pm, doors open 6.20pm for members to sign in, purchase raffle tickets and set up popular vote.

Plant sales start 6:30pm, meeting at 7pm

Guest Speaker Neil Crafter will give a talk.

Online Raffle will be drawn on the night, details of the plants being raffled off will be posted in our facebook groups towards the end of July.

Popular Vote The popular vote gives you a chance to win a \$50 voucher to spend on plant sales. To win, all you need to do is bring a unique, special or attractive plant and display it in the popular vote section. You must be a financial member and bring a plant along that you think will be of interest. Upon arrival, bring your plant to Bec to get a number to display with your plant.

For Sellers: If you would like to sell on the night, please be set up by 6:15 pm. Aroids only for sale please. Each seller is responsible for setting up, packing down, and tidying their area. There will be pricing labels available at meeting, \$2 for 40 labels. The ASA will take a 10% commission on the sale of plants, unless the person is a guest speaker or travelling from interstate.

What to bring: The ASA does not provide single use plastic bags, so please bring your own bags or box to carry your plants home. ASA does not have eftpos facilities, so be sure to bring sufficient cash.

Any pots/plants for sale must be clean or in bags.

Please bring a plate of supper to share, the ASA will provide coffee and tea.

Sales start at 6:30pm, don't miss out! For more information: secretary@aroids.net



Some of the plants given away as part of the online raffle.

Right: *Epipremnum Amplissium*, *Philodendron 'Whipple Way'*.



APRIL MEETING

In April the ASA held their second meeting for 2019. With the weather still warm, there was an excellent selection of plants for sale, as was there an incredible display of plants for the popular vote. Some of the popular vote plants are shown on the right of this page. There were some stunning entries (images right) and we look forward to doing it again next meeting. Thanks again to Bec Kos for helping to organise this.

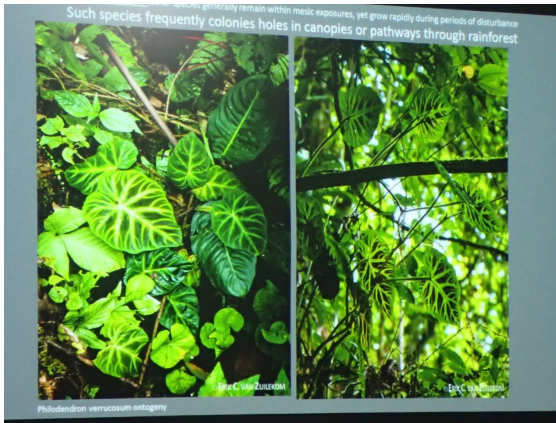
New Queensland resident Erik Van Zuilekom gave an impressive presentation 'Aroid Ecologies & Implications for Culture'. It was widely agreed that Erik gave a fantastic presentation, we are all very lucky to have him and his expansive knowledge of ecology involved in the society. His presentation is available for viewing on the ASA Members Only facebook group.

The online raffle was particularly popular this meeting, with some enviable plants being given away. The first prize *Philodendron 'Whipple Way'* was won by Angelina Rowell.

Be sure to keep your eyes out for the next raffle which will be announced at the end of July.



Various plants for sale and auction. Such a great selection!



Clockwise from top left: A superb Thaumatophyllum spruceanum; Erik giving an excellent presentation to an interest crowd; More plants for sale, Trevor and Jordan; Philodendron 'Henderson's pride'; Caladium 'White Christmas'. Above: A slide from Erik's Powerpoint presentation.





MELBOURNE MEETING

By Karissa Baddeley

It was great to see so many aroid addicts and aficionados attend the first Melbourne ASA meeting in June 2019. In spite of the cold, we had our biggest turn out yet. Fitzroy Nursery were very generous by allowing us to host our meeting on their premises, we are greatly appreciative.

Dylan was extra generous with his time giving an informative and entertaining talk on his experience of successfully growing aroids in the Melbourne climate. Dylan's talk also included a display of impressive Melbourne-grown specimens. Much mingling and frivolity was had, and we were treated to a rare winter aroid sale showcasing plants Dylan had grown.

We were thrilled to see new and familiar faces and we look forward to our Spring get-together.

Just one of the Plant sales table at the Melbourne Meeting. All the sale plants were grown by Dylan.





Clockwise from top right: Victorian members arriving and mingling before the meeting; Dylan pointing to one of his example plants during his presentation; A captive audience enjoying Dylan's presentation; Another table of plants for sale during the meeting; Karissa working hard to sort raffle tickets; Dylan presenting.





Top right: A drool-worthy plant raffle table. Below right: images of Steve's garden.

QUEENSLAND FIELD DAY

By Mim Stocks

Some of our lucky SE Qld members attended another field trip in May. We went to Steve Flood's garden and private nursery at Mooloolah Valley. Steve's daughter, Tamara, and son in law, Eddie were there to help also.

We all eagerly hopped in our cars and headed to this small town on the Sunshine Coast hinterland. 31 members attended, along with 5 guests. We were all privileged to buy some gorgeous plants, some specimens had clearly been in his collection for years due to their size and maturity. There were several shade houses for us to walk through and you had to do a few laps to capture it all. Amongst the shade houses also, Steve had planted an area with the most amazing, hugest aroids I've seen. It certainly was the centre of discussion and we still cannot stop talking about those anthuriums!

It fascinates and excites me when we attend these social events. We have so many knowledgeable members, some are keen gardeners and we have botanists and horticulturists, so the conversations are not only interesting but educational.

A field trip is not only about aroids, but food and raffles too. Steve whipped up a pot of his famous pumpkin soup and fellow members Daphne and Kevin did an amazing job of cooking up a storm on the BBQ! Our members brought desserts and sweets, so we were well fed! What do you do when you're full and can't move? Pull out those raffle tickets and cross your fingers! I lost count of how many prizes there were but let's just say the table was full.

I had a fantastic day and want to say thank you to Steve, Tamara, Eddie, Daphne, Kevin, and the ASA Committee who all played a part in getting this day organized.







Matt Bogart's
"Collection of
camouflage":
Aglaonema
pictum tricolor,
bicolor and
rotundum x
bicolor.



AROID BIOGRAPHIES
MATT BOGART

**HUNTING FOR THE
CAMOUFLAGE PLANT
OF SUMATRA,
AGLAONEMA
PICTUM.**

PART 1

Written by Matt Bogart

My parents were (and still are) avid gardeners who tend to favour semi-tamed jungles over formal and manicured landscaping. Living in Cairns on large blocks certainly helped their endeavours to turn their gardens into a blend of incredible leaf shapes and colours, with native rainforest trees draped in Philodendrons, bromeliads and orchids while Athuriums, Calatheas, Alocasias and a plethora of other terrestrial tropicals compete for space underneath and threaten to overrun any remaining lawns. Growing up and playing in their urban jungle instilled a passion for tropical plants in me from a young age, ogling the metallic gold and copper veins of my mother's jewel orchids or the extravagant colours and shapes of dad's heliconia and ginger flowers.

When I was about twelve, I was introduced to a plant that would quickly become my favourite and still is to this day. We were visiting one of Dad's brothers at his property

near Fishery Falls one weekend and tucked under the trees at the edge of the rainforest he had an impressive stand of *Aglaonema pictum tricolor* growing. The perfect army camouflage pattern on the leaves was unlike anything I had seen before and for the rest of the day I would wander back to the plants to marvel at them. Needless to say my parents took some home and they were planted in the garden where they slowly spread over the years. When I moved to Brisbane in 2005 to finish my university studies, I potted a couple up to take with me and the descendants of these plants moved back to Cairns with me in 2010 and still have pride of place in my collection.

At the beginning of this year my Director alerted me to the fact I had accrued a rather large amount of leave and 'suggested' that I would be taking at least a month-long holiday in the near future. Previous holidays had been spent at home working on various renovations and projects or hiking around the Wet Tropics and I was determined that this holiday I would head back overseas on an adventure. I tossed around a few ideas and then, one day, while I



Homolomena humilis

was doing a weekly plant inspection, it hit me: I would go to Sumatra and see pictums in their natural habitat. My father and uncles were also born in and spent their early childhoods in North Sumatra (my Oma is Indonesian and my Opa was a Dutch rubber plantation manager) so it would also be an opportunity for me to explore a small part of my heritage.

After some online research, I decided that I was going to avoid any of the resorts or eco-lodges with their planned tours and wildlife experiences that are the usual fare for tourists in Sumatra and would instead find a guide who could take me to some more remote locations. I quickly discovered that this was harder than I had imagined. I had no contacts in Sumatra and it was obvious that I needed a well-connected guide who could organise local hunters in the places I wanted to visit and I needed one who could speak a reasonable amount of English because I had absolutely no grasp on Bahasa or Batakese. After a few weeks of sending emails and messaging various botanists and plant enthusiasts through Facebook, I finally directed to someone who fit the bill. Another few weeks were then spent picking locations, working out travel details, organising local hunters and homestays in villages, negotiating payments for everyone and a fee for my guide. At the end of it I finally had what could loosely be described as an itinerary and a healthy level of excitement with just a dash of apprehension.

After plane hopping from Cairns to Darwin to Singapore and Jakarta, I finally found myself flying over Sumatra with my guide as the sun rose over the horizon. Peering out the window I could see rivers snaking through swathes of oil palm and rainforest. We were flying to Pekanbaru in Riau and from there we would take a taxi to Sidempuan. Low clouds and heavy fog made the descent into Pekanbaru slightly unnerving and, after an initial aborted landing attempt that had the whole plane wide eyed, we finally touched down at 7am. Collecting our bags

we then waited for our taxi to show up. And waited. And waited. After an hour and a half, he finally arrived and we bundled in, ready for the 10-hour drive from Pekanbaru to Sidempuan where we would pick up our car. Over the next half hour, we proceeded to pick up other travellers on our way out of the city and by the time we had left Pekanbaru behind I found myself pressed against the window with five other people and various items of luggage wedged in any available space

We finally arrived in Sidempuan after 12 hours and as we sprawled on patch of grass on the roadside in the centre of town watching the evening bustle and waiting our legs to work, my guide's long-time friend and tag-a-long for our expedition appeared, Wirr. Wirr had an infectious energy and comedic wit, and would be the source of much entertainment and laughter for the rest of the trip. He soon had us on our feet and eating a late but welcome dinner. It was after midnight before we finally found ourselves stumbling into my guide's house at the edge of Sidempuan.

Early the next morning I was woken by roosters and morning prayers broadcast from a nearby mosque. Looking out the window I realised that the house was only a few hundred metres from thick rainforest clad hills. My guide told me he had explored all through the hills and, while there were lots of interesting plants, he had never seen any pictums there. These hills were not our target though and after breakfast we gathered our gear, picked up our car and headed to the first location on our trip. Three hours of pothole ridden road later we arrived in a village that would be our home base for the next week. After dropping our bags off at the home where we would be staying, we went off to find our local hunter. This turned out to be fairly easy in such a small village and, after some sweet tea and showing a



Blue Homalomena

few pictures of the plants we were looking for, I found myself on the back of our hunter's motorbike with my guide and Wirr following behind on a scooter. The forest we would be exploring was another hour by bike but the distance was of no concern as I found myself eyeballing the many species of Schismatoglottis, ferns and other jungle plants that adorned the earth banks, small hillside streams and waterfalls on the side of the road. My head was already starting to spin and we hadn't even got into the jungle yet!

We pulled up at the area we had identified via Google Earth as a potentially good spot to explore. Here the hills were still heavily forested and well removed from the ever-expanding oil palm menace and old rubber plantations. A number of streams emptied into a very large swamp at the base of the hills which we would have to get through to reach the jungle. I eyed the dark tannin water, stands of pandanus and head high reeds warily. As a born and bred north Queenslander, this swamp was picture perfect crocodile habitat to me and if it was anywhere in northern Australia I would not be venturing too close to the water. My companions told me there were no crocodiles in Sumatra, which I quickly corrected. They then admitted there were crocodiles in Sumatra but just not here. Not feeling very reassured, I encouraged our hunter to find a way through the swamp that kept us as far from the water as possible. We pushed through the long reeds and they soon thinned out as we made our way into a ravine and up a clear flowing stream to a small 6ft waterfall. Here the forest started, and we had climbed the waterfall and gone no more than 3 metres when my guide pointed out a small green Homalomena growing on the rocks. I grow a few smaller Homalomena species in terrariums so I was quite excited to see one in the wild and looking around I realised I was surrounded by a number of small rheophytic Homalomena and Schismatoglottis species. I quickly took pictures and clambered after our hunter.

A little way up the creek, the banks levelled out slightly on either side for about 10 metres before meeting sheer and impassable rock walls.

On this small area of level ground, a thick layer of soil and leaf litter allowed larger trees to grow and scattered through the area were larger terrestrial Homalomena and Schismatoglottis species. Many of the Homalomena looked similar to *H. rubescens*, however my eye was quickly caught by a shimmer that stood out in the shadows of the forest. Closer inspection revealed a stunning Homalomena the size of *H. rubescens* but with large rounded with a distinct light blue. The blue was offset by slightly darker lines following the leaf veins from the centre to the edge of the leaf and the leaf had soft velvety texture. I have not been able to identify this species since my return and unfortunately my lacklustre photography skills have not helped either. Quite possibly it is a new species and one that would certainly be a hit in cultivation. We continued up the stream and everywhere I looked were new and unfamiliar plants growing on every surface. My excitement about what we would find in these forests was growing and I was surrounded by so many new floral treasures I had already forgotten that my original purpose for the trip was to see wild pictums. Eventually, we came to a large overhanging waterfall surrounded by sheer rock walls. There was no way for us to continue up this particular ravine, so we took a quick rest by the pool at the base of the falls before the gathering cloud of mosquitoes forced us back on our feet. As this was just a short recy trip to scout for the best access points into the hills, we decided to call it a day and head back to town and prepare for tomorrow which would be a full day of hiking.

Early the next morning we packed our lunch and water and prepared to head back to the jungle. The previous evening, we had been informed by one of the locals that some plant hunters had been in the area a few months beforehand



and taken hundreds of pictures from the forest. These plants have become very collectable in Japan (and globally it would seem) in the last decade and as a result huge numbers are being removed by both Japanese and local plant hunters to supply the demand. With their slow growth rate and the plant hunters' habit of removing entire populations, including small pups, it was likely we would struggle to see many in this area.

With this sobering thought, we jumped on the bikes and headed to a ravine we had identified the previous afternoon as a likely access point to get us high up into the hills, and hopefully into areas that had not been picked over by plant collectors. We climbed a few hundred metres up a fairly exposed ridge before reaching the forest. At this point the barely discernible track we had followed vanished and we had to rely on our local hunter. As the jungle thickened, I started to notice familiar small plants from my collection back in Cairns: *Homalomena humilis* and *Labisia pumila* were growing in clusters around rotting logs and creeping across the leaf litter. The former is a stunning, small growing aroid with velvet leaves that are iridescent in the light. While I had always assumed the seemingly different varieties I had purchased from other enthusiasts over the years were from different locations, I observed that here in the wild they displayed a high level of phenotypic plasticity, with plants growing in relatively close proximity to each other often displaying very different leaf and colour forms. *Labisia* belong to the Primulaceae family and have a growth habit similar to jewel orchids, with prostrate stem that creeps through the leaf litter from which new shoots emerge at various intervals. These plants also bear more than a passing resemblance to



some jewel orchids, with their dark leaves having a velvet like offset by a prominent pink central vein and pink leaf edge. Also

Labisia pumila

growing here was a variety of climbing aroids including *Scindapsus pictus* and *Rhaphidophora* species.

As the forest got thicker our local hunter decided we would be better off using the creek that was somewhere far below us and promptly lead us over the side of the ridge. What began as an orderly descent soon became a barely controlled slide as the wet leaf litter and clay soil sent us shooting down the steep slope, wildly grabbing at any available tree trunk, vine or root to slow ourselves down (this would become our involuntary method of descending hills for the rest of the trip, sometimes with hilarious results). We emerged at the creek and after brushing ourselves off and checking for any cuts we tackled the first of a series of waterfalls that would take the next hour to navigate.

After completing the obstacle course of waterfalls, we finally found ourselves on more level ground. Here the previously steep and narrow ravine opened up and the banks either side of the creek were gently sloped for about 10 metres before rising sharply. On one side a sheer cliff ran for 100m or more up the ravine and rose 50m before disappearing back into the hill slope above it. Water seeping from the cliff had turned it into a giant drip wall and the entire surface was covered in plants. At the top of the cliff I could see a band of plants with long strappy leaves sprouting from the tops of their thin trunks. From this distance it was impossible to tell if they were a variety of pandanus or a *Dracaena* similar to *D. cambodiana* and I cursed myself for not bring a pair of small binoculars. Further down a variety of small shrubs and tree ferns grew, and the lowest 20 metres was covered in a stunning array of plants.

As we worked our way along the base of the cliff, I could see a number of different small lithophytic *Homalomena* species growing on the wet rock face. Some had smooth leaves, others



Undescribed very large *Homalomena* sp.

with leathery hairy leaves while others had leaves with a texture like shark skin. Alongside the Homalomena were a variety of ferns, Selaginellas and smaller ginger species including the diminutive *Camptandra parvula*. Other plants I recognised included a number of *Sonerila* species, *Sauvagesia serrata*, *Elatostema* species and a *Didymocarpus* sp. with its heavily rugose leaves pressed against the rock.

Up ahead in a small sandy clearing, I could see a group of plants with large green leaves which I initially dismissed as a stand of young *Ficus elastica*. As we moved closer, I noticed they looked uncannily like aroids and, when I was finally standing in front of them, I realised they were in fact Homalomenas, but unlike anything I had seen either in collections or in my many hours trawling through plants online. It was as though one of the small lithophytic species had been fed steroids. The plants themselves stood three feet high and probably four feet across. Thick deep red petioles held large green leaves which felt like plastic and each leaf had a contrasting lime green central rib with a texture that was like exaggerated grooves on a vinyl record (plicate for those who prefer botanical terms). Running a fingernail along the length of the leaf produced an audible whir and sent vibrations through my arm. There were about 10 plants in all and I soon had the group hunting among the stand for any signs of a fruiting spadix. When none could be found we fanned out to look for any more plants that might hold fruit. After 15 minutes of vigorous searching we realised that there simply were no other specimens to be found. That small population



appeared to be it in that area and as it turned out, we did not encounter this species again over the rest of the trip despite spending many more days in the

jungle. Eventually we decided to leave these giants behind press on in our search for pictums.

We continued up the creek, zigzagging up and down the banks looking for *Aglaonema*'s. After another few fruitless hours it was time to make our way back down the mountain and head for home. Over the next week we continued to scour these mountains looking for the camouflage plants of Sumatra only to come up empty handed each time. My guide had become increasingly apologetic and worried that I would be upset about not finding the plant I had come here to see, but how could I be?! I had been blessed to see plants I grew at home in their natural habitat and already had new ideas on how I could improve my cultivation of them. And, I had been privileged to see so many species that were completely new to me and some that have since been confirmed as undescribed. As I packed my things into our car on the last day and prepared to leave for the next location on our trip, my guide was busy talking to the old lady whose house we had been lodging at. He was explaining that I had come to see a particular plant, but we could not find it and as he described it to her, she broke out into a grin. She beckoned us to follow her and as we went around the back of her house, we found her pointing to a spot at the edge of the forest and chuckling. Looking at where she was pointing, I could not see anything significant or unusual. Suddenly my guide gasped and started to laugh as well. Straining my eyes, I finally saw it...a small clump of *Aglaonema pictum* amongst the undergrowth. The leaves were well patterned in two shades of green and though it was not the tricolour I had dreamed of seeing, it was definitely a striking bicolour form of *pictum*.

I could not help but laugh as well, so many hot sweaty hours clambering up and down hillsides looking for this plant and it had been growing not more than 20 metres from where I was sleeping the whole time! This was the icing on the cake for me and as we left for our next location on our trip, I was all the more ready to hit the hills and continue our search to find the tricolour form of *Aglaonema pictum*.

To be continued...

Undescribed very large Homalomena sp.
(*Chamaecladon* clade)



AROID NEWS

The world of Aroids is an exciting and constantly changing place. We have a section on Aroid News in each newsletter to keep you up to date. Heard some news also? Let us know!

POTHOS SHOWN BEST AT REMOVING DUST AND SMOKE FROM AIR

A study conducted by the Pohang University of Science and Technology, South Korea, identified that *Epipremnum aureum* (commonly called Pothos) was one of the most effective at removing particulate matter from the air.

Reduction of particulate matter (PM) has emerged as one of the most significant challenges in public health and environment protection worldwide. Air pollution caused by airborne particulate matter (PM) poses a serious threat to public health, climate, and environment in many countries (Dominici et al., 2014).

PM particles of various sizes are categorized into PM₁₀ and PM_{2.5} based on their particle diameters below 10 and 2.5 μm , respectively. PM_{2.5} particles are particularly harmful to health because they, along with various toxic compounds, accumulate in human bronchi and lungs due to their small size. Long-term exposure to PM_{2.5} particles, which can remain suspended in air for several weeks, may trigger cardiovascular diseases.

Thus, various dust removal technologies have been developed to mitigate and remove PM_{2.5} particles effectively.

The authors investigated the PM removal performance of five plant species in a closed chamber. The authors theorise that it is the effect of relative humidity (RH) caused by plant evapotranspiration, that drives the particle removal.

The authors tested seedlings of five representative test species that have been known for air purification and dust removal capacity: *Epipremnum aureum* (Pothos or Scindapsus), *Sansevieria hyacinthoides*, *Ficus banghalensis* (Rubber tree), *Hedera helix* (English Ivy), and *Viburnum odoratissimum* (Coral tree). The authors created several controls also. Some chambers were left empty and, to mimic leaf transpiration, three pieces of papers either dry or wet with distilled water were hung on the ceiling of the test chamber.

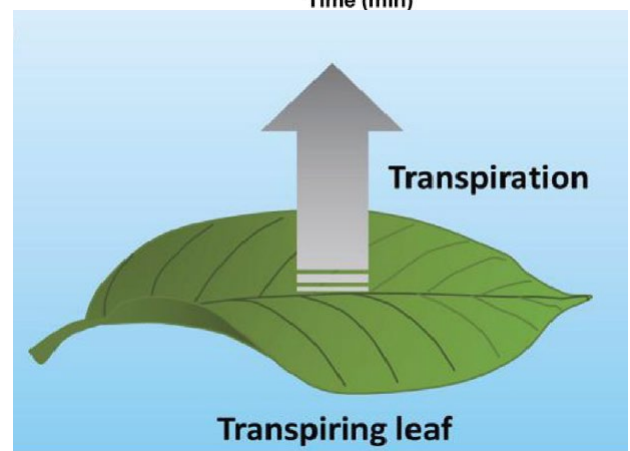
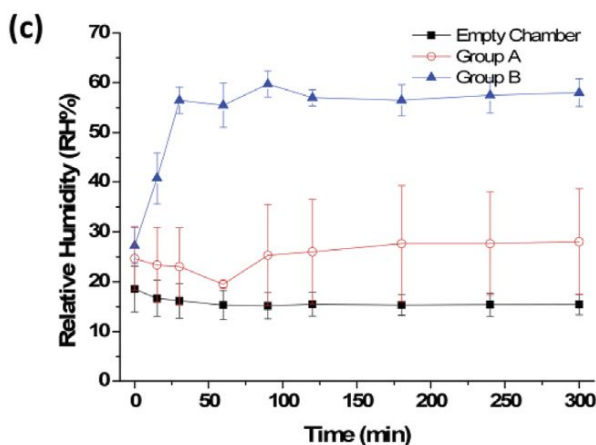
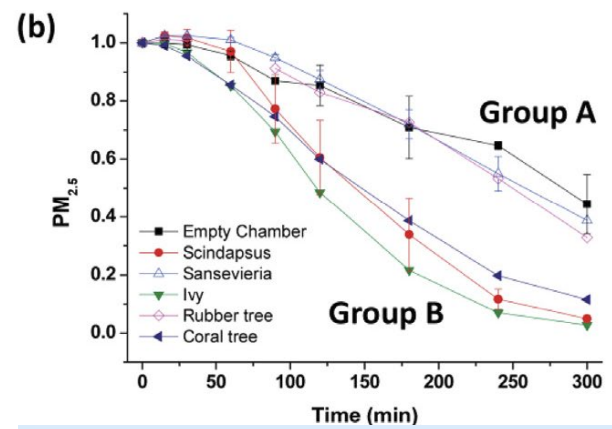
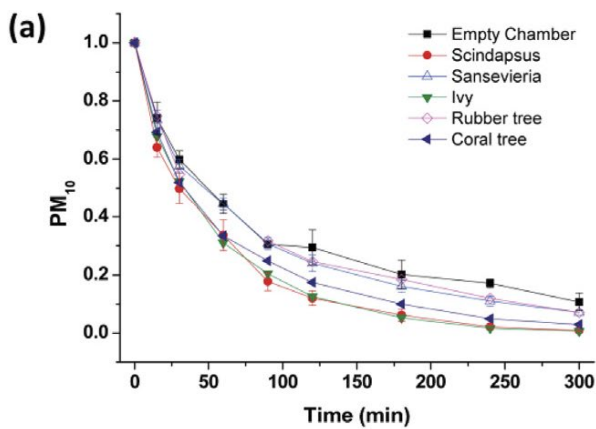
Two different types of PM particles were examined: Arizona dust (A1 Ultrafine Test Dust, Powder Technology Inc.) was used as a test dust to evaluate the filter performance, as was dust generated by burning incense. The initial concentration was set to a hazardous pollution level, which was equivalent to the TSP index ranging from 1000 mg/m³ to 1500 mg/m³. A hand-held particle counter was used to monitor the particle concentration for 3-5 hours after the particles were injected into the chamber.



The change in the mass concentrations of PM_{2.5} particles was considerably different for the five plant species. The mass concentration of PM_{2.5} in group A (Sansevieria and rubber tree) is reduced by 50%-60%, whereas the mass concentration of PM_{2.5} in group B (Pothos, ivy, and coral tree) is decreased to approximately 90%. The removal efficiencies of Scindapsus for PM₁₀ and of PM_{2.5} smoke particles under light condition are 4.0% and 21.4% higher than those under dark condition after 180 min.

The study was titled 'Removal of fine particulate matter (PM_{2.5}) via atmospheric humidity caused by evapotranspiration' by Jeongeun Ryu, Jeong Jae Kim, Hyeokjun Byeon, Taesik Go, and Sang Joon Lee, and was published in *Environmental Pollution*.

Jeongeun Ryu, Jeong Jae Kim, Hyeokjun Byeon, Taesik Go, Sang Joon Lee, 'Removal of fine particulate matter (PM_{2.5}) via atmospheric humidity caused by evapotranspiration', *Environmental Pollution*, Volume 245, 2019, Pages 253-259, ISSN 0269-7491, <https://doi.org/10.1016/j.envpol.2018.11.004>.



Temporal variations in (a) PM₁₀ and (b) PM_{2.5} particle concentrations of the test chambers with and without plant species: *Epipremnum aureum* (Pothos), *Sansevieria hyacinthoides* (Sansevieria), *Hedera helix* (ivy), *Ficus banghalensis* (rubber tree), and *Viburnum odoratissimum* (coral tree). The y-axes represent PM₁₀ and PM_{2.5} concentrations relative to their initial concentrations, respectively.

AROID POLLINATION: BIRDS JOIN THE PARTY

The limited information available on aroid reproductive systems suggests that most species are visited and pollinated by arthropods, especially bees, beetles, and flies.

The authors of a new article, 'Bird visitation to a high Andean Anthurium (Araceae) in Eastern Ecuador', Robert Bleiweiss, Francisco Sornoza Molina, Efraín Freire, Thomas B. Croat, argue that the highly specific reproductive biology of Araceae raises fundamental questions about the role of pollinators in the extraordinary diversification of this plant family.

The characteristic aroid inflorescence comprises a large sheathing bract (spathe) that supports or partly encloses a floral spike (spadix). Field studies support inferences from this morphology that the main aroid pollinators are typically bugs. However, this contrasts with the diversity of pollinators recorded in other taxon-rich and widespread plant families.

Recent investigations suggest that even subtle variations on the basic aroid inflorescence form constitute specializations for very different arthropod pollinators, distinguishing species adapted for pollination by bees, beetles, or flies. Thus, the authors argue, the true diversity of aroid visitors and pollination systems is probably underestimated.

Although the various forms of aroid reproductive structures are atypical for



bird-pollinated plants, aroid flowers, in fact secrete nectar-like fluids indicating potential pollination by animals.

This theory was tested in the field, and it was shown that, in all examples noted, inflorescences were visited by both bugs and birds. Images above and below left.

The article is titled 'Bird visitation to a high Andean Anthurium (Araceae) in Eastern Ecuador', published in *Flora*, by Robert Bleiweiss, Francisco Sornoza Molina, Efraín Freire, and Thomas B. Croat.

Robert Bleiweiss, Francisco Sornoza Molina, Efraín Freire, Thomas B. Croat, 'Bird visitation to a high Andean Anthurium (Araceae) in Eastern Ecuador', *Flora*, Volume 255, 2019, Pages 80-85, ISSN 0367-2530, <https://doi.org/10.1016/j.flora.2019.02.010>

Left: Typical feeding methods adopted by the hummingbird *Boissonneaua matthewsii* (A) and the flowerpiercer *Diglossa cyanea* (B)

Above: Bird-plant interactions at the Guango Anthurium. Male-phase spadix ontogeny (A) indicates copious fluid production in the transition zone (arrow 2) between unopened (arrow 1) and opened (arrow 3) male-phase flowers. Cameos of pollen and fluid uptake by the hummingbird *Boissonneaua matthewsii* (B and C) and the flowerpiercer *Diglossa cyanea* (D and E) indicate roles of bill and tongue (arrows) in acquisition of these plant resources.



SO MANY NEWS SPECIES!

The Missouri Botanical Garden declared 2018 the “Year of the Aroids” (Carlson 2019). With all this increased interest, there have been numerous new species described.

A new species, *Philodendron montemariense* Croat, J. J. Percy & Carrascal, is described from the Reserva Forestal Protectora Serranía de Coraza, in the department of Sucre, Colombia. The species is a member of subgenus *Philodendron*, section *Philodendron*, series *Fibrosa* Croat. It is most similar to *P. asplundii* Croat & M. L. Soares.

P. montemariense is described in ‘A New Species of *Philodendron* (Araceae) from Sucre Department, Colombia’ by José Jorge Percy Beltrán, Dairo Carrascal Prasca, Thomas B. Croat, published in *Novon*, *A Journal for Botanical Nomenclature*.

In the same issue of *Novon*, a new species of *Anthurium* was described. *A. marcusianum* Theófilo, L. Kollmann & Sakur was discovered during a floristic survey of Araceae species in the Atlantic Forest, Espírito Santo State, southeastern Brazil.

Also! A review of Caladieae by Thomas B. Croat, Xavier Delannay, Orlando O. Ortiz, Pedro Diaz Jiménez

has revealed five new species of *Caladium* and seven new species of *Syngonium*.

Two species of *Caladium* previously considered to be synonymous with *C. bicolor* (Aiton) Vent., are fully redescribed: *C. picturatum* K. Koch & C. D. Bouché and *C. steudnerifolium* Engl. Furthermore, three entirely new species of *Caladium* are described: *C. cortesae* Croat & E. G. Gonç., *C. palaciosii* Croat & L. P. Hannon, and *C. stevensonii* Croat & Delannay.

New species of *Syngonium* are *S. adsettiorum* Croat, O. Ortiz & J. S. Harrison, *S. bastimentoense* O. Ortiz & Croat, *S. brewsterense* Croat & Delannay, *S. churchillii* Croat & O. Ortiz, *S. litense* Croat, *S. purpureospathum* Croat & Raz, and *S. tacotalpense* Díaz-Jiménez & Croat. *Syngonium yurimaguense* Engl. Was also reported for the first time outside the Amazon Basin.

This article was published as ‘A Review of the Aroid Tribe Caladieae with the Description of Three New Species of *Caladium* and Seven New Species of *Syngonium* (Araceae)’, also in *Novon*.

These articles are part of a special issue on "Araceae, Recent Advances and Future Challenges," volume 27, number 1 of *Novon*, 2019.



CALENDAR OF ASA EVENTS

- ASA Annual General Meeting: 7th August 2019
- ASA Meeting: 9th October 2019
- ASA Meeting 12th February 2020
- ASA Meeting 8th April 2020

ASA MANAGEMENT TEAM

President - **Michael Pascall**

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Editor/Tech support - **Aaron Grinter**

Assistant Editor/Tech support - **Jace Cowen**

General Committee - **Neil Crafter**

QUICK GUIDE TO FACEBOOK GROUPS

Community group: For the general public and non-fee-paying members to discuss aroids and ask aroid related questions. Strictly no selling or advertisements.

Members Only group: For fee paying members of the ASA for any discussion. Also used for communication about ASA events and uploading of newsletters.

Marketplace group: For fee paying members of the ASA to buy, sell, swap, and give away aroids. Also for posting businesses, sales, promotions and recommendations.

SPECIAL THANKS

We would like to send our upmost appreciation to Trevor Crawford, Steve Flood, Robyn Ganly, Greg Oldano, Peter Boyce and Neil Crafter for your kind contributions and ongoing donations to our online raffle and auctions. Proceeds from these raffles and sales are invaluable to keep our Society functioning.

Special thanks also to Sarah Boyle for volunteering her valuable time to help with our marketing.

Yours sincerely

The Aroid Society of Australia Inc Committee