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The Bulb Garden

~Gardening with Bulbs~
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What's Inside...

Researchers Say It's Time to Stop Naming Organisms After People

An international team of scientists wants to stop using eponyms. But the naming authorities won't budge.

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George Washington's palm tree. Thomas Jefferson's sloth. Edward Harris's hawk. Quite a few species come with a person's name attached to them. Sometimes these names — formally known as eponyms — memorialize the original collector. Sometimes it's a scientist's family member, a benefactor or government leader, a colleague, or even a celebrity. According to one official estimate, eponyms make up around 20 percent of all animal names in use.

Many species got their eponyms during the early days of scientific collecting, which was partially fueled by the broader colonization programs of European powers throughout the 18th, 19th, and 20th centuries. Over the past few years, however, that history has come under increased scrutiny. In 2020, for instance, amid the protests over the murder of George Floyd by a Minneapolis police officer and the push to remove Confederate monuments, some ornithologists began questioning whether birds named for Confederates and slaveholders should be retitled.

Now, an international group of researchers argues that it's time to move away from eponyms entirely. "In short, we believe that naming species in honour of real people is unnecessary and objectively difficult to justify," the authors wrote in a recent paper in the journal Nature Ecology and Evolution. "The Earth's biodiversity

A Bird's Confederate Name Sparks Calls for Change (https://undark.org/2020/07/17/mccowns-longspur-confederate-name-calls-for-change/)

is part of a global heritage that should not be trivialized by association with any single human individual, whatever their perceived worth."

The authors of the paper are wading into an ongoing and contentious debate — and the scientific institutions responsible for approving new species names aren't budging.

The goal of naming species — or nomenclature — is to make sure scientific names are uniform across different fields and research labs, said Luis Ceríaco, a commissioner with the International Commission on Zoological Nomenclature, which controls the naming of animal species. "It's a space to promote stability and promote universality on the use of names," Ceríaco

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added. "What we want is to have a set of rules that allow people to really know what they are talking about when referring to species."

For this reason, the ICZN and its partner organization, The International Association of Plant Taxonomy, follow established codes that prioritize older names, and only alter them for reasons of science and stability.

Proposals to rename species due to social or political concerns have attracted both criticism and support. In February 2023, a group of ICZN commissioners — including Ceríaco — put out a paper against renaming species on ethical grounds. Deciding which eponyms should be replaced due to "perceived offensiveness" isn't in the code's remit, they wrote. "Owing to the inherently subjective nature of making such assessments, it would be inappropriate for the Commission to assert judgments on such matters of morality, because there are no specific parameters to determine thresholds for offensiveness of a scientific name to a given community or individual, either in the present day or in the future."

Other scientists, however, have been happy to step into the gap.

The push to reassess problematic species names isn't new. Consider the case of Anophthalmus hitleri, a cave beetle named after Adolf Hitler in the 1930s, the eponym of which — in addition to honoring a historical genocidaire — has made the insect a target for some collectors. Yet despite calls to drop the eponym, the species has not been renamed by the ICZN. "The logic to date in preserving 'hitleri' is that the name per se is not offensive," entomologist May Berenbaum noted in a 2010 issue of American Entomologist. "Frankly, though, a scientific name that sentences a species to extinction at the hands of fanatical Fascist memorabilia collectors causes considerable offense, at least to me."

Jefferson's sloth, an extinct giant ground sloth from the Ice Age, was named after the former president due to his research on fossils of the animal. Visual: Travis/Flickr

More recently, in 2015, the Rhodes Must Fall movement — a reference to Cecil Rhodes, the former prime minister of British colonial South Africa — launched discussions in the botanical sciences about replacing "culturally offensive and inappropriate names," which grew alongside similar debates in ornithology around the 2020 Black Lives Matter protests.

For some people, the stakes of such decisions can feel high. "Naming and language have power. The way that you use language tells people whether they belong or not," Earyn McGee, a conservation biologist and organizer of Black Birders Week, told Undark in 2020. The refusal to change species names, she said, "tells Black people and other people of color that they don't matter, that they're not important."

Such movements have, in turn, led some taxonomists to argue that renaming species injects political considerations into taxonomy, opening up thorny questions. After all, where should scientists draw lines between good

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actors and bad ones? (Should species named after Queen Victoria be replaced? What about plant names commemorating American slaveholders George Washington and Thomas Jefferson?)

"The Earth's biodiversity is part of a global heritage that should not be trivialized by association with any single human individual, whatever their perceived worth."

"We have a code of ethics," Ceríaco said, "and the ethics part says that no one should erect a new name knowingly that's going to cause offense." However, he added, the ICZN emphasizes the freedom of authors to name species as they see fit, so they also don't revise names that break their ethics code. "It's always on the responsibility of the author. We strongly suggest for people to be sure that what they're going to erect is not going to cause offense to anyone."

The alternative, Ceríaco said, would be for the ICZN to have to adjudicate which names are acceptable, opening "a pandora's box." Allowing such revisions at all would affect the work of global researchers, conservationists, and others who depend on a stable taxonomic framework. "We're not being dismissive toward the arguments that the names are offensive," he said. But, he added, the consequences of changing the names would be trickier than keeping them.

Not all researchers were convinced by the ICZN's argument. Some of them, like Patrícia Guedes — a biologist with the CIBIO Research Center in Biodiversity and Genetic Resources — banded together to in March 2023, pointing out that eponyms were effectively more trouble than they were worth. Part of the issue with eponyms, they noted, was that the practice is inextricably bound up with science's colonial history: Many past researchers came from colonizing European nations, and as a result many species ended up named after White, male, upper-class Europeans. In Africa alone, the researchers found, 1,565 species of birds, reptiles, amphibians, and mammals — a quarter of the continent's native vertebrates — are eponyms, the majority of which honored "colonizers or people of colonial descent."

Where should scientists draw lines between good actors and bad ones?

"A name that is considered innocuous by some may be perceived as offensive by others, and names that were once considered inoffensive are not necessarily viewed in the same way in a post-colonial world," the authors wrote. Overturning all prior eponyms would be ethically sound but practically unfeasible, they conceded. Still, the authors argued that the ICZN could put taxonomists of the species' native region in charge of renaming proposals.

Guedes told Undark that it would be neater — and easier — to tighten the ICZN code's rules to restrict eponyms going forward. As long as organisms are named after people, she said, such arguments about which names are appropriate will continue: "I'm sure there are other ways of honoring people who've contributed to science that's not attaching their name to another living being."

Guedes and her colleagues face an uphill battle: Many taxonomists like eponyms. "I think it's positive in many, many cases," Ceríaco said. He himself has described around 40 species, some of them eponyms, including a species of viper named after James Hetfield from Metallica. (This is a bit of tradition in taxonomy: Consider Taylor Swift's millipede, or Leonardo DiCaprio's snake.) Such names are a chance to get communities that generally don't pay attention to such discoveries involved, he said.

Eponyms also give researchers the chance to name species after scientists from the countries in which they were found, he added, such as an Angolan gecko that honors local scientist Francisco M. P. Gonçalves. (See photo page 4.)

"There are certainly unfortunate eponyms out there," Stephen Heard, an ecologist and author of "Charles Darwin's Barnacle and David Bowie's Spider," a book about eponyms, wrote to Undark in a Twitter message. "There are also wonderful ones that bring attention to underrecognized figures in science, including Indigenous people, women, and more."

It's an honor for a researcher to have a species

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named after them, said Brian Sidlauskas, an ichthyologist at Oregon State University. (He would know: There's an Amazonian fish with his name on it.) But while he's not interested in barring their use, he does think the ICZN could create a

A species of Amazonian fish, Leporinus sidlauskasi, was named after Oregon State University ichthyologist Brian Sidlauskas in 2019. *Visual: José Birindelli/Oregon State University/Flickr* (https://t.co/MkoBcTwsl-IS)

process for ditching problematic names — perhaps through a panel of experts tasked with weighing in on proposed name changes. "There

One example is this Angolan gecko, Pachydactylus maiatoi, that honors local scientist Francisco Maiato Pedro Gonçalves. *Visual: Photo by Luis M.P. Ceríaco/Marques et. al, Vertebrate Zoology, 2023*

really are some names in history that genuinely are really offensive, so having some mechanism for changing those is a good idea," he said — a position other researchers have staked out as well.

Eponyms give researchers the chance to name species after scientists from the countries in which they were found, said Luis Ceríaco, an ICZN commissioner.

In addition, the ICZN's stance against making changes for ethical reasons is a "classic slippery slope argument," Sidlauskas said. "It's clear that they don't want to the responsibility for doing so. But if not them, then who has the responsibility and ability?"

Others argue that naming practices should change on a community level, regardless of what the ICZN does. "Going forward I think that White Europeans should not be naming species from countries that are not their own after other White Europeans," said Laura Jennings, a botanist at Kew Royal Botanic Gardens. While she doesn't feel it's for her to tell colleagues how to name species in their own country, she'd decline her own eponym. "My preference is to name species after a characteristic of the plant, a place name, or a name in a local language," she added. "Something that links the plant to its native habitat."

The broader community discussion isn't going anywhere. The ICZN is currently working on the 5th edition of its formal code, Ceríaco said, which will be delivered for comment and debate by the community before it's ratified in the next year or two. That's part of the reason he and his colleagues made their position clear earlier this year, he said — to foster debate.

It's a goal that Guedes' team shares. "I don't think the real change is going to happen anytime soon. But what we wanted to do was create a space for discussion," she said.

"And I think we're achieving that," she added.

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Pacific Bulb Etymologies

Julian Pecht completed a master's program in Classics at the University of Oxford, focusing on nature in didactic poetry. He maintains a few flower beds at home in Leonia, New Jersey.

Knowing my affinity for Latin and Ancient Greek, Arnold Trachtenberg once told me about the surprising etymology of the genus *Boophone*. The first part comes from the Greek word for cow, *bous*. The second element is not, as I first guessed, from *phōne*, meaning sound, but from *phonos*, meaning murder. A poisonous plant, *Boophone* merits its ominous name. But it is not alone in having a noteworthy etymology: many genera are in some fashion derived from Latin and Greek, whether adopted from a whole word or, like *Boophone*, fashioned anew from compounds. Without knowledge of Classical languages (and, indeed, sometimes even with!) one might not understand them. The following is thus an overview of some of the more memorable genus names I've come across on the Pacific Bulb Society's wiki.

The Greeks and Romans were keen botanists, and a sizable number of their appellations continue to this day. Some of these names come from unclear origins, such as *Arum,*[1] *Asphodelus,*[2] *Allium,*[3] and *Lilium.*[4] More apparent are the ones bound up in mythology: *Iris*, after the Greek goddess of the rainbow; *Narcissus*, for the eponymous youth who turned into a flower after gazing too long at his reflection;[5] and *Hyacinthus*, a flower said to have originated from the blood of the slain hero, a lover of Apollo. Curiously, the name remains, but the plant is not the same: our *Hyacinthus* differs from the plants known to the Greeks as *hyacinthoi*, which were more likely *Scilla bifolia* and *Delphinium ajacis.*[6] Nor is it the only time an ancient name has been transferred to another plant. *Narcissus*'s common name, daffodil, likely originates from the Dutch word for asphodel, *de affodil.*[7]

Also common in ancient times was naming plants for their peculiar features and resemblances. The naturalist Pliny spoke of the *dracunculus*, a plant whose reddish purple spathe and spadix aptly suit the meaning of the name, 'little dragon'.[8] *Ornithogalum*, literally 'bird's milk,' is similar to an idiom in both Greek and Latin for extraordinarily rare goods, but the genus might have also received its name from the resemblance *Ornithogalum umbellatum*'s white flowers bear to bird poop.[9] And then there is *Orchis*, which, on account of the genus's double tubers, shares its name with the Greek word for testicle.[10]

The tendency to name genera after distinguishing features continues to this day. You might think the genus *Paris* was named after the mythological Paris who set off the Trojan War (or, for that matter, after the city of Paris), but in fact the name comes from the Latin adjective *par* ('equal'), referencing the proportions of the plant's leaves and flowers.[11] Color has also influenced a few names, such as *Haemanthus* ('Blood-flower')[12] and *Rhodophiala* ('Red-cup').[13] *Hedychium* literally means 'Sweet Snow', from the smell of *H. coronarium*'s white flowers, though not all in the genus are white—hence two species with the names *H. flavescens* ('yellowing') and *H. flavum* ('yellow').[14]

There are also names, like Pliny's *Dracunculus*, stemming from physical resemblances and attributes noticed by taxonomists. *Corydalis* is the Greek name for the crested lark, and the plant genus received its name from similarly crested flowers.[15] Nor is it the only genus to have an avian origin; *Pelargonium*'s long, thin fruit looks sufficiently like the beak of a stork, *pelargos* in Ancient Greek, to have earned its name.[16] Inanimate objects also sometimes supply coinages. Both *Gladiolus* and *Doryanthes* suggest the plants' likenesses to weapons: the former is the Latin diminutive of *gladius* ('sword'),[17] while the latter is a compound of Greek words meaning 'Spear-flower'. *Fritillaria* derives from the Latin word for dicebox, though whether that's because of the capsule's shape or the flower's pattern is unclear.[18]

Another way for genera to be named is according to time and season. There is *Maianthemum*, which literally means 'May-flower'.[19] *Proiphys*, from the Greek words for 'early' and 'grow', describes the early germination of genus's seeds.[20] *Hemerocallis*, from *hemera* ('day') and *kallos*

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('beauty'), refers to the genus's short-lived flowers[21]; *Hesperantha*, from *hespera* ('evening') and *anthos* ('flower'), refers to flowers which mostly open at night.[22] You would thus be forgiven for thinking the genus *Hesperocallis* also describes a flower which blooms at night—the plant is found in the Southwestern United States, and thus *hespera* here invokes its secondary meaning, 'the West' (i.e., where the sun goes in the evening).[23] *Zephyranthes* was named along similar lines: the Zephyr was the west wind, and the genus is likewise found in the western hemisphere.[24]

Then there are a few genera whose names are pretty singular. One is *Tropaeolum*, derived from the Greek *tropaion*, a memorial of defeated enemies' armor made to hang from a tree (and from where we get 'trophy'). Linnaeus came up with the name not just because of the plant's own appearance, but because it was often supported by wooden implements in gardens, with the whole contraption resembling those ancient trophies.[25]

In the opening lines of Virgil's first *Eclogue*, the shepherd Tityrus is said to recline in the shade and sing about his love, Amaryllis. She is a character in pastoral poetry, found first in Theocritus's *Idylls* and then mentioned throughout Virgil's *Eclogues.*[26] But unlike Hyacinthus or Narcissus, she had nothing to do with flowers until more modern times: no plant was ever known as *Amaryllis* until Linnaeus named the genus such.[27]

Finally, a classical scholar might think the genus *Musa* refers to the Muses, *Mousai* in Greek and *Musae* in Latin. But it is not so. The name is, in fact, a transliteration of the Arabic word for 'banana', the fruit for which this genus is most known.[28] Greek and Latin are the key to many a genus's etymology, but *Musa* is a good reminder that not all genera have Classical origins—and it never hurts to check and make sure.

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[1]Merriam Webster, *arum*
[2]Bryan and Griffiths (1995): 43
[3]De Vaan (2008): 33
[4]Ibid.: 341
[5]The word itself derives from ναρκάω, meaning 'to grow numb'; cf. *LSJ* νάρκισσος.
[6]Lindsell (1937): 82, cf. *LSJ* ὑακίνθος
[7]Merriam Webster, *daffodil*
[8]Bryan and Griffiths (1995): 119
[9]Obermeyer (1978): 324. For more on the idiom, see Payne (2017).
[10]Merriam Webster, *orchis*
[11]Bryan and Griffith (1995): 282
[12]Bryan and Griffith (1995): 164
[13]Ibid.: 293
[14]Ibid.: 166
[15]Ibid.: 84
[16]Ibid.: 283
[17]Ibid.: 147
[18]Ibid.: 133
[19]Ibid.: 243
[20]Ibid.: 288
[21]Ibid.: 168
[22]Ibid.: 173
[23]Ibid.: 173; cf. *LSJ* ἑσπέρα
[24]Ibid.: 358
[25]Ibis.: 328
[26]See *Idylls* 3,4; *Eclogues* 1, 2, 3, 8, 9.
[27]Bryan and Griffiths (1995): 22
[28]Merriam Webster, *musa*

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Growing from Seed

Robin Hansen has grown plants from seed since starting Hansen Nursery more than 30 years ago, but every year seed-sowing is a new adventure and an act of optimism.

The Pacific Bulb Society seed and bulb exchanges will be taking place as I write, and this is an exciting opportunity for members to order seed unlikely to be available anywhere. Many donations come from members who have grown very specialized and highly sought bulbs and whose collections are extensive and full of rarities. I hope you'll take advantage of these offerings to extend your own collections and knowledge, and to pass on seeds and bulbs to other members when the time comes. For seeds in particular, you may never see a bulb for sale from many of these genera or species, so the only way to have them is to grow from seed. Below is a description for growing from seed; the PBS Forum and Wiki can provide much more information about growing.

Growing from seed starts for some of us after we've collected, cleaned and stored seed. For others, ordering from seed catalogs and seed exchanges is a winter-time occupation allowing us to ignore the weather and just about everything else.

If you're going to collect seed, please be sure you know at least what family you're collecting or, better yet, which genus, ideally also the species. In sowing last year's seed from one particular exchange I've had three mis-named packets so far. Not a good idea as you may contribute noxious weeds to someone's garden without the gardener realizing what they're actually growing.

The rule of thumb when collecting is to take only 10% of 10% of the plants available. This means that there will be times you won't collect any seed because there are too few plants. If that plant is more abundant down the road or higher up, then it's not as much of a concern. It's better, if you're desperate for that specific seed, to find a supplier who grows it commercially or a seed exchange of which there are countless specialist societies that offer unusual and/or rare seeds. That might be a lesser option but one you should take.

When collecting seed, it is essential to clean the seed as soon as you can. Sometimes seed can be difficult to separate from the chaff or seed coat, such as those of composites or berries or the like. There have been times when I've done my best to clean the chaff, and hoping there are some viable seeds, sown all of it only to be rewarded with few or no plants. If you can find photos of viable seed, this will help you determine viability. Lilies are one of the easiest seeds to reveal whether they are fertile or not and fortunately there are photos of lily seeds to help. With flesh-covered fruits, depending on the genus, I will macerate the fruits, leaving them on a paper towel for a few days in the open air so that the pulp becomes less liquid or sticky and more pliable or leathery. Drying the seed a bit makes it easier to rub the pulp off the seeds.

However, put up a sign if other household members are inclined to be tidier than you. A sister who was visiting for a few days and was trying to be helpful swept my *Cornus canadensis* seed on a paper towel into the trash. I was rather disappointed as I'd hike a few miles at a location more than a hundred miles away to get them.

I never store seed at room temperature, always in the bottom of the fridge. Furthermore, always use seed envelopes (semi-clear paper) or coin envelopes. Coin envelopes come in many sizes and are as easy to find as the nearest office supply store. Plastic Ziploc bags should only be used for those fleshy seeds such as *Trillium* that need to be stored cold and damp in vermiculite or peat. Do not use any medium that potentially carries disease, and check the Ziplocs frequently for signs of mold, etc.

Many seeds require a cold period when sown to germinate but often seeds native to warmer areas such as parts of the Mediterranean or South Africa will do best if sown when conditions are warm. Some seeds will suffer fungal diseases or rot if not sown in peat-based starting media while many bulb seeds prefer a fast-draining mix so moisture doesn't build up and rot them. For a faster-draining mix, you can use about half and half seed starter and pumice or 1/4-10 gravel or any formula that works similarly.

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The amount of light needed for germination is often a neglected factor in sowing seed. My rule of thumb is this: if the seed is tiny, I sow it in a pot filled with starting mix and topped with1/4 inch of pumice or 1/4-10 gravel. I sprinkle the tiny seeds on top and place the pot in a tray of water usually overnight or until it's clear the soil is saturated.

If the seeds are large enough to pick up, cover them with 1/8 to 1/4-inch of potting media, then add 1/8 to 1/4-inch of pumice or 1/4-10 gravel. Perlite is too light and floats too easily, plus it's too dusty to use safely. It has its uses but not without a dust mask and glasses, please.

In all cases, keep a tray of some sort filled with water so you can bottom water your newly sown seed pots. I use the heavy plastic square trays plumbers put under water heaters in case of leakage. They need cleaning occasionally but are much better than the cake pans and other items I used to use.

One very important requirement which you really cannot put off. A label for each pot is a necessity. Regular vinyl pot labels take pencil lead best and writing lasts the longest. That label should contain the plant name, the source and at least the sown date. I write this information on the part of the label visible and at the opposite end which is buried in the mix. I guarantee you will be so relieved when that label breaks off above soil level to remember the name is still there. There are many materials that can be used for labels, so be creative. A visit to a thrift store for used aluminum or vinyl window blinds gives one of the best and most durable labels but test the pencil or ink you will use.

Check pots frequently for germination and moisture levels. I'm sure you've seen seed which is etiolated or grown long and lanky due to lack of enough light, so once seed germinates give it as much light as possible and watch the moisture levels. Bulb seed pots once germinated are usually left for a year or so to allow the tiny bulbs time to develop before transplanting. The larger the seed the lower the number of seeds per pot, keeping in mind that you'll need to leave room for them to grow on for a year.

Rarely do seed starting mixes or peat/coir include fertilizer so once germination occurs you'll need to use a sparing amount, half strength at most, for liquid fertilizers (NPK plus trace minerals), or a pinch or two (again a very small amount) of either granular or resin-coated pellets. Many bulbs don't need much if any fertilizer and I often forget until it's time to transplant, but really, the plants grow better and faster if fertilized; they may flower a year or two sooner as well. Be picky about your fertilizers. Ask friends and other knowledgeable growers for their advice - don't just pop into your local store and take the first fertilizer that promises glorious results. There are differences in nitrogen fertilizers for example, and whether there are trace minerals is also important since the trace minerals are often not even added to seed starting mixes and can cause deficiencies. Would you live on cows' milk and wheat bread and expect to stay healthy without eating your

***Trillium undulatum* with exposed seeds (Rutland County, Vermont, August 2020). Trscavo. Creative Commons.org.**

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***Calochortus albus* v. *rubellus*. Native to California. Grown from seed. Photo by Jan Jeddeloh.**

greens and fruit?

The Pacific Bulb Society has a large number of articles on seed starting and quite a number of articles written on individual genera which can be especially helpful as many of our members grow very unusual and/or rare bulbs with very specific germinating and growing requirements. Nearly all articles and the wiki can be searched and the forum is open to everyone for conversations and information on growing bulbs. ✦✦✦

***Cyclamen hederifolium* seed pods. Seed are covered in clear, sweet gel beloved of ants. Photo: Robin Hansen**

Announcements

PBS Board member Johannes-Ulrich Urban, who lives in Portugal, at the PBS booth the end of March at a plant fair. Held before the spring EU seed and plant exchange, Uli took 3 pots of his own bulbs and a large printed poster advertising PBS. Uli also had bookmarks PBS had printed and previous editions of *The Bulb Garden* to hand out. These items, including a .pdf of the poster, are available to members who would like to advertise PBS at various plant events.

Membership Directories
are included with this issue. They are revised and mailed every other year.
The deadline for inclusion was June 15, somewhat later than normal.
If you see errors or have changed email addresses, please contact the Membership Secretary
to make corrections. If you wish to be omitted from listing, please contact us.

Announcements—MARY SUE ITTNER GRANT AWARDS for 2023

Congratulations are in order for three successful applicants for the Mary Sue Ittner Grants.

They are $500 each to Dr. Guadalupe Munguía Lino for field explorations on The Mexican *lirios* (Iridaceae: *Alophia*), Carlos J Jiménez, MSc, for electron microscope studies of alkaloid profiles in species of genus *Narcissus*, and Maria José Roman-Ayo, PhD candidate (University of Florida) for field studies of highly endemic *Conanthera* species (Tecophilaeaceae) in Chile.

Just a reminder that applications for grants are available on the PBS website and the deadline is usually about March 31 of each year.

Included in the application process for successful applicants, each applicant is required to provide an article on their research work for *The Bulb Garden* when their grants are finished.

Dr. Guadalupe Munguí-Lino, Cátedras, CONACYT, University of Guadalajara, Jalisco, Mexico, is a specialist in Tigridieae taxonomy, in the management of geographic databases and Geographic Information Systems (known as GIS). Her main interest is the origin and evolution of the tribe Tigridieae (Iridaceae) in North America. Her grant will help fund field explorations in summer 2023 to collect botanical specimens and tissues for DNA extraction, observe species in their habitat, analyze floral structures, obtain photographs, and record phenology; she will travel to various areas of Mexico. Live plants, bulbs, and seeds collected will be cultivated in the Jardín Botánico Didácticos Ciencias Biológicas y Agrópecuarias of the University of Guadalajara, Jalisco, Mexico.

Carlos J. Jiménez, MSc Plant Science and Forestry, was awarded a grant toward costs associated with Field Emersion Scanning Electron Microscopy of various species of Amaryllidaceae, particularly lesser known species of *Narcissus*. He, in association with Dr. Jaume Bastida Armengol, PhD Biology, Healthcare, and Environment (University of Barcelona, Spain), is focused mainly on identification and characterization of alkaloid profiles of certain species of Amaryllids. The interest in these alkaloids is especially noteworthy from a pharmacological point of view, particularly genera as noted above. Additionally, seeds and flowers are being macrophotographed using tomography techniques.

Mariá José Roman-Ayo, PhD candidate in Botany, University of Florida, has received intense botanical training at her university in Chile, including rigorous field work experience as well as running a molecular lab for her undergraduate advisor. She is continuing her investigations of South American Tecophilaeaceae and has generated a large phylogenomic data set for her Tecophilaeaceae species, specifically *Conanthera*, of which five species are accepted currently while more than twelve species have been recognized in the past. The taxonomy of this genus remains controversial and she is therefore studying the integrative processes that drive the evolution of biodiversity, believing such studies are crucial to threats to biodiversity, in order to improve understanding of ecological and evolutionary processes, integrating insights from molecular, ecological, and morphological studies.

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EDITOR'S NOTES

Dues Increase: At its June 2023 board meeting, the Pacific Bulb Society board reluctantly passed a motion to increase yearly dues beginning January 1, 2024 by $5.00 U.S. to all members. U.S. members will pay $25 U.S, and all other members will pay $30 U.S. This increase is due to considerable and still increasing postage costs in particular, but also to increased expenses for supplies such has mailers for seeds and bulbs. Postage costs are significant because of our seed and bulb exchanges, but also include mailing of quarterly journals and new member packets which are sent to all new members. Making the journals available as

Announcements *continued*

either PDFs or on the web has been discussed and will eventually happen, depending on volunteers' time available and decisions about format.

This dues increase is the first (to my knowledge) in the twenty-year history of PBS, which was established in the early 2000s; the increase had been considered any number of times as costs have risen but with yet another postage increase to take effect in mid-June of this year, we were faced with a decision we had long avoided.

These increases will take effect January 1, 2024 but you can avoid them to some degree in the following ways: by renewing for 2024 on or before December 31, 2023 or by renewing for multiple years at a time provided payment is made on or before December 31 of this year.

If mailing payment, please be sure your envelope is postmarked no later than December 31, regardless of how long it takes to arrive. You may also consider using any exchange credits you may have at time of renewal.

Don't forget that you can use your exchange credits to pay for a gift membership for one person for one year.

In other news: Many features available on our website and wiki are now searchable thanks to Webmaster David Pilling. Here's the link for *The Bulb Garden*: https://www.pacificbulbsociety.org/pbswiki/index.php/TheBulbGarden

You can also search the early version the *The Bulb Garden*, first called the Bulb Newsletter, at this address: https://www.pacificbulbsociety.org/pbswiki/index.php/BulbNewsletter and the Mariposa newsletter, an archive of *Calochortus* growing: https://www.pacificbulbsociety.org/pbswiki/index.php/Mariposa.

PBS Board Meeting Quarterly Minutes: The Board has committed to begin publishing board minutes from the quarterly meetings as soon as we work out the details.

Webmaster: As some of you may know, David Pilling has plans to retire from the wiki and website, hopefully by the end of 2023 and is in the process of training one or more replacements. We'll keep you informed as time goes on.

✦✦✦

When you pay your dues at the end of this year — please remember the increase for 2024.
For all U.S. members the new rate is $25.00 USD
For members in all other countries the rate is $30.00 USD.
Renew online via PayPal—you must use the button on our membership page,
OR
payable by check to: Pacific Bulb Society c/o Arnold Trachtenberg, 140 Lakeview Ave., Leonia, NJ 07605
Renew before Dec. 31 and pay the current rate.

***Ferraria densepunctulata*. Photo: Uli Urban.**

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***Tecophilea* sp. Photo: Jan Jeddeloh. Grown from seed. *Techophilea* spp. are native to South America.**

Inside This Edition:

The Bulb Garden is the newsletter of the Pacific Bulb Society (PBS). It is published, if enough articles are submitted, around the third week of each quarter and is available to PBS members. This newsletter provides gardening or bulb related articles, news of interest to members, and announcements of the PBS organization.

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