

# What's Growing On?

## BASTROP COUNTY MASTER GARDENER ASSOCIATION

June 2021

### Mosquito Repellents

By Wizzie Brown

Mosquitoes are out in masses and since they are capable of disease transmission, it is important that you protect yourself when spending time outside. Of course, you can wear long pants and a long-sleeved shirt in light colors to reduce the number of mosquitoes that can reach your skin when outside, but this is not always the option people choose with temperatures on the rise. Another option to protect yourself is repellent.

Repellent should only be applied to clothing and exposed skin; do not apply repellent underneath clothing! If you want to apply repellent to your face, spray your hands with repellent and rub it onto your face. Do not spray repellent directly into your face or near eyes or mouth. Make sure to apply repellent outdoors. Do not allow children to handle repellents and seek advice from a physician regarding insect repellent use for children under two years of age. Wash hands before eating, smoking, or using the restroom.

To reduce disease transmission from mosquitoes, the Center for Disease Control (CDC) recommends using a product *registered with the EPA* (Environmental Protection Agency) containing one of the following active ingredients: DEET, picaridin, IR3535, oil of lemon eucalyptus (OLE), para-methane-diol (PMD), or 2-undecanone. DEET, also known N, N-diethyl-m-toluamide or N, N-diemethylbenzamide, was developed by the U.S. Army in 1946 to protect soldiers in insect-infested areas. Pesticides containing DEET have been used by the public since

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### Palafoxia – An overlooked Texas Native

By Carolyn Turman



I saw a beautiful little plant last fall hiding under the branches of a mesquite bush and took the pictures below. I think this is a Palafoxia callosa (picture at left). Palafoxia is a Texas native and part of the Asteraceae family. It is an annual that reseeds.



This spring while waiting for them to emerge in the same place, I saw more in a meadow near Buescher State Park. The ones in the meadow have been identified as Palafoxia rosea (picture at right). Although they look the same from a distance, there are subtle differences. According to the data in Flora of North America, ([www.eflores.org](http://www.eflores.org)), P. callosa phyllaries (bracts) are a bit narrower than P. rosea. This difference in the flowers indicates that they are two different species.

According to the information on the Lady Bird

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1957. Products containing DEET should not be used on children younger than 2 months of age (read the label and check with your pediatrician if you have questions). DEET has a slight odor and may have a greasy feel to some people. It may damage plastic, rubber, vinyl, or synthetic fabrics. DEET may be irritating to the eyes and skin for some people and comes in a wide variety of concentrations, so choose one that will work best for your situation.

Picaridin was first made in the 1980's and resembles a natural compound called piperine (which is found in plants used to produce black pepper). Picaridin has been used in Europe and Australia for many years but has only been in the U.S. since 2005. Picaridin is non-greasy and odorless.

IR-3535, or 3-[N-Butyl-N- acetyl]-aminopropionic acid, ethyl ester, was developed in the mid-1970's and became registered for use in the U.S. in 1999. It is registered as a biopesticide by the EPA because it is functionally identical to a naturally occurring substance (an amino acid). It may dissolve or damage plastics and may be irritating to the eyes.

Oil of lemon eucalyptus (OLE) and PMD (para-menthane-3,8-diol) are essentially the same thing; PMD is the synthesized (lab created) version of oil of lemon eucalyptus. "Pure" or "essential" oil of lemon eucalyptus is not labeled as a repellent and has not undergone testing and should not be used as a repellent product. OLE/PMD has been on the market in the U.S. since 2002. OLE/PMD should not be used on children younger than 3 years of age. The natural product (OLE) has known allergens within it while the synthetic version (PMD) has less of a risk to allergens. This product is classified as a biopesticide. OLE/PMD has a varying range of residual effectiveness, some offering about 20 minutes of protection while other products may last up to two hours.

The product 2-undecanone is also known as methyl nonyl ketone or IBI-246. It is a colorless oil that can either be produced synthetically or extracted from plants such as rue, cloves, ginger, strawberries, or wild grown tomatoes. This product is fairly new.

Many factors play into how long a repellent will last for a person. Some of these are:

- The concentration (or percent of active ingredient) of the product. You can find the percentage on the product label.
- Person's attractiveness. Some people are more attractive to mosquitoes than others (and no scientific research has proven that it is because of eating garlic, taking vitamin B, using tobacco products, etc.). A person's genetic code plays a large part on what makes a person so attractive to mosquitoes.
- Frequency and uniformity of application. In other words, how often is the repellent applied and how good of coverage did you get?

Activity level of the person. The more active the person is, the more sweat they produce which can cause the repellent to wash off the surface of the skin.

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## Volunteering

Master Gardeners volunteer in the community to teach others about horticulture. We follow the research-based recommendations of Texas A&M AgriLife Extension. Members who complete 50 hours of volunteer service in the year after training earn the designation "Texas Master Gardener." We use our title only when engaged in Texas A&M AgriLife Extension activities.

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As a word of caution, there are products that combine sunscreen and insect repellent. The CDC recommends that if you need sunscreen and repellent, that you choose two separate products. Sunscreen should be applied more often than repellents.

For more information or help with identification, contact Wizzie Brown, Texas AgriLife Extension Service Program Specialist at 512.854.9600. Check out my blog at [www.urban-ipm.blogspot.com](http://www.urban-ipm.blogspot.com)

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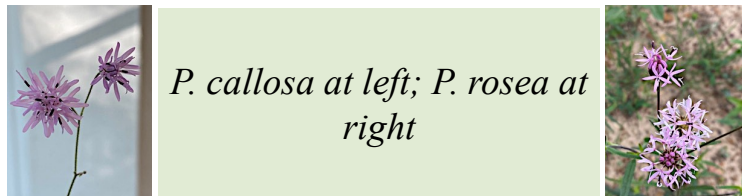
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Johnson Wildflower website, ([www.wildflower.org](http://www.wildflower.org)), *P. callosa* grows in limestone glades; bald knobs; open, sandy areas; and along gravelly stream edges. It is drought tolerant, likes full sun and blooms from August to November.



*P. callosa at left; P. rosea at right*

The Lady Bird Johnson website information on *P. rosea* indicated that it is normally found in prairies, plains, meadows and pastures and grows in many different types of soil from sandy to caliche. It prefers partial shade and blooms June to October.

I wanted to introduce you to this plant since it is a native plant that would be great in butterfly gardens. Be on the look out and find some seeds. Lady Bird Wildflower center suggests collecting seed in October and November and plant in December or January. Please don't take them all, as we want nature to be able to reseed as well. This is an amazing little plant.

"*Palafoxia callosa*." Flora of North America. Accessed June 12, 2021

[http://www.efloras.org/florataxon.aspx?flora\\_id=1&taxon\\_id=242416916](http://www.efloras.org/florataxon.aspx?flora_id=1&taxon_id=242416916)



"*Palafoxia rosea*." Flora of North America. Accessed June 12, 2021

[http://www.efloras.org/florataxon.aspx?flora\\_id=1&taxon\\_id=250067282](http://www.efloras.org/florataxon.aspx?flora_id=1&taxon_id=250067282)

*Palafoxia callosa*." Lady Bird Johnson Wildflower Center. Accessed June 12 2021

[https://www.wildflower.org/plants/result.php?id\\_plant=PACA3](https://www.wildflower.org/plants/result.php?id_plant=PACA3)

"*Palafoxia rosea*" Lady Bird Johnson Wildflower Center. Accessed June 12, 2021.

[https://www.wildflower.org/plants/result.php?id\\_plant=PARO](https://www.wildflower.org/plants/result.php?id_plant=PARO)

## New Website Features

Check out our website, which features project slideshows, a new photo gallery section, and an events calendar to check out upcoming activities. Find news articles and our newsletters. Thanks to Dave Posh for keeping the info timely for us <https://txmg.org/bastropcounty/>

# Larval Host Plants: Completing the Circle

By Howard Nemerov

If you grow nectar plants, you'll attract butterflies. If you provide food for their offspring, butterflies will call your garden home.

## Pipevine Swallowtail



For years, Pipevine Swallowtail (*Battus philenor*) has been enjoying nectar from annuals in the Aster family, mostly *Zinnia elegans* (California Giants Zinnia) and *Tithonia rotundifolia* (Mexican Sunflower). As per their name, this Swallowtail species is *monophagous*: their larvae feed only on certain Pipevine (*Aristolochia*) species.<sup>1</sup> For example, Xerxes Society notes that Pipevine larvae cannot feed on tropical species like *Aristolochia gigantea*.<sup>2</sup> North Carolina Extension goes further, stating that Pipevine larvae will die within 3 days after consuming *Aristolochia gigantea* leaves.<sup>3</sup> While tropical vines like this may wow the human eye, they present a threat to native butterflies.

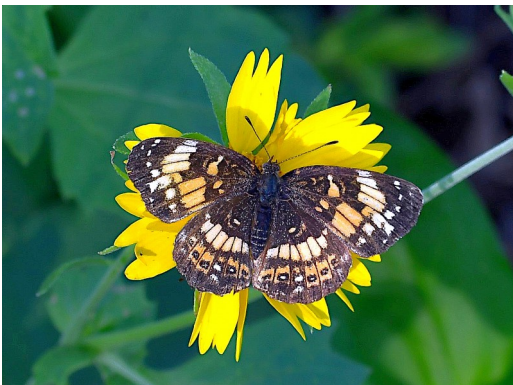
There is a Bastrop County native Pipevine, *Aristolochia erecta*, a misnomer if ever there was: While this plant can get long like a vine, it's hardly "erect" but trails along the ground as a grass mimic, "presumably to evade female Pipevine swallowtail butterflies looking for a good place to lay their eggs."<sup>4</sup>

Fortunately, *Aristolochia fimbriata*, though native to South America, is a suitable host for Pipevine Swallowtail larva.<sup>5</sup> Considered a groundcover, it produces a low mound that spreads 2–3 feet. Along with white-veined, heart-shaped leaves, it's a pleasing landscape element that enhances pollinator gardens. I obtained seeds from a Central Texas gardener and planted this perennial in a location receiving direct morning sun.



In the picture to the right, there are at least 3 larvae happily munching away. By maturity, they had eaten all five plants to the ground. Fortunately, *Aristolochia fimbriata* has a fleshy taproot, and the plants have since regenerated, looking better than ever. I hope to save seed and plant more next year, to ensure sufficient larval hosting without over-stressing a few plants.

## Silvery Checkerspot



Silvery Checkerspot (*Chlosyne nycteis*) began visiting after I introduced Bastrop native *Verbesina encelioides* (Cowpen Daisy) into my garden (both on left). Larva are polyphagous, feeding on a number of genera in the Aster family.<sup>6</sup> The University of South Florida confirms that Silvery Checkerspot caterpillars feed on *Echinacea purpurea*.<sup>7</sup>

I'm trialing a new *Echinacea* hybrid this year called "Cheyenne Spirit" which has *E. purpurea* ancestry.<sup>8</sup> I found a cluster of recently-hatched Silvery Checkerspot larvae consuming on of the #1 plants in an isolated corner of the garden. These hungry babies were too small

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to migrate, so I moved the pot beneath an established sunflower (*Helianthus annuus*). By the next day, the larva had migrated to the sunflower (right).

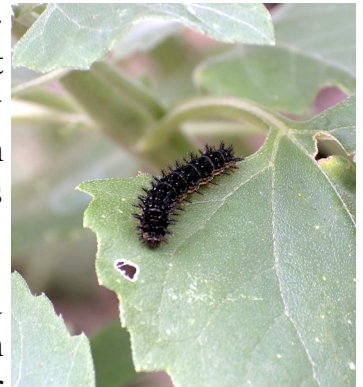


Meanwhile, on the Cowpen Daisy, I also found young Silvery Checkerspot larvae the same day (left). All three plants are in the Aster family, underscoring this butterfly's ability to survive on a number of taxonomically-related plant species.

Since they consumed the Cheyenne Spirit plant, it's good to know that my garden has plenty of options for this butterfly. This benefits plants too, spreading the banquet around so that fewer

plants end up having to regenerate from the roots like the poor young Echinacea.

Cowpen Daisy naturalized in my yard this year, and Silvery Checkerspot butterflies followed suit, laying eggs on it as well as enjoying its nectar. One benefit that only native annuals can provide is attracting native butterflies. While many pollinators enjoy flowers like zinnias, only natives offer season-long attraction of nectar and larval hosting. Cowpen Daisy has made a home here, and so has Silvery Checkerspot (right).



Initially, it may be challenging to accept disappearing leaves on your prized flowers and perennials. Caterpillars need to eat *a lot* to successfully pupate. With a little management and preparation, Nature eventually finds a balance, and your garden will provide a longer-lasting dance of these winged jewels.

## Endnotes

<sup>1</sup> "Pipevine Swallowtail." Butterflies and Moths of North America. Accessed June 25, 2021. <https://www.butterfliesandmoths.org/species/Battus-philenor>

<sup>2</sup> "Gardening for Butterflies: How You Can Attract and Protect Beautiful, Beneficial Insects." Xerxes Society. Timber Press, 2016.

<sup>3</sup> "*Aristolochia gigantea*." North Carolina Extension Gardener Plant Toolbox. Accessed June 25, 2021. <https://plants.ces.ncsu.edu/plants/aristolochia-gigantea/>

<sup>4</sup> "*Aristolochia erecta*." Lady Bird Johnson Wildflower Plant Center. Accessed June 25, 2021. [https://www.wildflower.org/plants/result.php?id\\_plant=ARER](https://www.wildflower.org/plants/result.php?id_plant=ARER)

<sup>5</sup> "*Aristolochia fimbriata*." North Carolina Extension Gardener Plant Toolbox. Accessed June 25, 2021. <https://plants.ces.ncsu.edu/plants/aristolochia-fimbriata/>

<sup>6</sup> "Silvery Checkerspot." Butterflies and Moths of North America. Accessed June 25, 2021. <https://www.butterfliesandmoths.org/species/Chlosyne-nycteis>

<sup>7</sup> "Silvery Checkerspot." Alabama Butterfly Atlas. Accessed June 22, 2021. <https://alabama.butterflyatlas.usf.edu/species/details/40/silvery-checkerspot>

<sup>8</sup> "Echinacea Cheyenne Spirit." PanAmerican Seed. Accessed January 25, 2021. <https://patft.uspto.gov/netacgi/nph-Parser?Sect1=PTO1&Sect2=HITOFF&d=PALL&p=1&u=%2Fmetahtml%2FPTO%2Fsrchnum.htm&r=1&f=G&l=50&s1=7,982,110.PN.&OS=PN/7,982,110&RS=PN/7,982,110>