

Youth Contest Winners

Sculpture Contest Winners

- 1st Place District Winners:
- 4th Grade: Trace Stumbrie, District 5
 - 4th Grade: Ian Burns, District 6
 - 5th Grade: Noah Shields, District 6
 - 6th Grade: Jaylah Fisher, District 6

1st in State:



4th Grade: Ian Burns, District 6



5th Grade: Noah Shields, District 6



6th Grade: Jaylah Fisher, District 6

High School Essay Winners

- 1st Place in the State: Ammond Willmott
- 1st Place District winners:
- District 1: Ammond Willmott
 - Sponsoring Garden Club: Livonia Garden Club
 - District 2A: Hannah Baker
 - Sponsoring Garden Club: Hillsdale Garden Club
 - District 5: Alivia Farr
 - Sponsoring Garden Club: Elk Rapids Garden Club
 - District 6: Arryelle Wiesen
 - Sponsoring Garden Club: Caro Garden Club

Winning Essay

Special Guests in the Garden

Ammon Willmott

9150 Seminole, Redford, MI 48239

313-473-7586

Home school

12th Grade

Activities: BSA Eagle Scout, church Young Men's secretary and author
of weekly newsletter, co-caregiver of grandmother, seminary student

Sponsor: Livonia Garden Club, Inc., Livonia, MI

What adolescent creature can kill predators by extending an orange, stinky, horn-like thing from its head, yet transforms into a beautiful and peaceful pollinator as an adult? It is *Papilio Polyxenes*, also known as the Black Swallowtail butterfly. And what would you call that orange, stinky, horn-like thing? I will explain this and other characteristics that make the Black Swallowtail butterfly so special.

Because Black Swallowtail caterpillars are easy to raise, they provide wonderful educational opportunities to learn about nature and science. It's a great way to ensure the next generation appreciates, respects and cares for our environment. When I was younger I raised several Black Swallowtail caterpillars and released the butterflies into the wild. I have kept as a temporary pet nearly every type of bug that has ventured inside my house and yard, and Black Swallowtails are definitely my favorite. In fact, I still have the face plate left behind after one of my caterpillars molted.



The molted face plate of my favorite caterpillar, July 26, 2022 (greatly enlarged)
The actual size is slightly smaller than an old fashioned rolled oat.



Me with “Spotty” the butterfly
June 22, 2012



Me with my favorite caterpillar, “Tiny”
July 27, 2012

In order to raise these caterpillars, I learned a lot about them through books and the Internet. In writing this report, I used Wikipedia and other websites to refresh my knowledge and gain new understanding. I also reached out to Brenda Dziedzic who runs Brenda’s Butterfly Habitat in Westland, Michigan and is the author of three books about butterflies and gardening.¹ She encourages people to raise butterflies through her butterfly habitat where people can see and learn about butterflies. Her website also educates and encourages people to create butterfly friendly environments.²

Black Swallowtails stay in Michigan year round. That is made possible because the last generation of butterflies overwinter in their chrysalis before emerging. They

¹ Books by Brenda Dziedzic: Raising Butterflies in the Garden, Raising Butterflies and Moths in the Garden, and Learn About Butterflies in the Garden,

² Brenda Dziedzic’s website: <http://butterfly-lady.com/>

also live throughout Michigan. In fact they live in most of the eastern and some of the western states.³

The thing that I personally find the most fascinating and unique about Black Swallowtail caterpillars is their osmeterium, which is exclusive to swallowtails. They gain it after their third instar (or molting). It is a bright orange and glossy Y shaped organ on the top of their head.⁴ Most of the time it is completely hidden, inverted within its thoracic region. But when the caterpillar is threatened, its osmeterium immediately everts releasing a repulsive scent and the caterpillar tries to wipe its osmeterium on the threat. Its osmeterium is covered in volatile organic acids.⁵ I know from personal experience that their osmeterium can stink up an entire room. “Eversion of the osmeterial gland is demonstrably effective in reducing predation by ants and small spiders, and its chemical constituents have been shown to repel or kill ants, and mantids.”⁶ That is impressive, especially for someone like myself who has caught, studied and released several Praying Mantids. Mantids are tough. The Y shape of the osmeterium resembles a snake’s tongue. Combined with their eye spots, these are effective defenses against birds and small reptiles by making the caterpillar look like a snake.⁷ As a butterfly, predators are deterred because the underside wing pattern mimics the poisonous Pipevine Swallowtail.

³ “Black Swallowtail Butterfly - Papilio Polyxenes | Wildlife Journal Junior,” accessed February 24, 2023, <https://nhpbs.org/wild/karnerblackswallowtail.asp>.

⁴ Wikipedia contributors, “Osmeterium,” Wikipedia, November 19, 2022, accessed February 16, 2023, <https://en.wikipedia.org/wiki/Osmeterium>.

⁵ “Butterfly Gardener Fall 2018 Page 9,” October 10, 2018, accessed March 2, 2023, <https://mydigitalpublication.com/publication/?m=46000&i=533419&p=8&ver=html5>.

⁶ Wikipedia contributors, “Osmeterium,” November 19, 2022.

⁷ Ibid



Black Swallowtail caterpillar showing its osmeterium⁸

By Styler - Own work, CC BY-SA 3.0, <https://commons.wikimedia.org/w/index.php?curid=10718776>

Black Swallowtails are very beneficial to the ecosystem. Not only are the adult butterflies excellent pollinators that keep our plants growing, but the caterpillars are essential to feed bird nestlings that keep our bird population going.⁹ And the scent of their osmeterium will deter their predators from your garden.¹⁰

⁸“File:Black-Swallowtail-Osmeterium.JPG - Wikimedia Commons,” June 24, 2010, accessed February 11, 2023, <https://commons.wikimedia.org/w/index.php?curid=10718776>.

⁹ Ira and Ira, “Planting for Pollinators: Black Swallowtail Butterfly | Southern Exposure Seed Exchange,” Southern Exposure Seed Exchange | Saving the Past for the Future, February 6, 2017, accessed February 27, 2023,

<https://blog.southernexposure.com/2016/05/planting-for-pollinators-black-swallowtail-butterfly/#:~:text=The%20Eastern%20Black%20Swallowtail%20is,delightful%20sight%20among%20the%20flowers.>

¹⁰ “Planting for Pollinators: Black Swallowtail Butterfly | Southern Exposure Seed Exchange.”

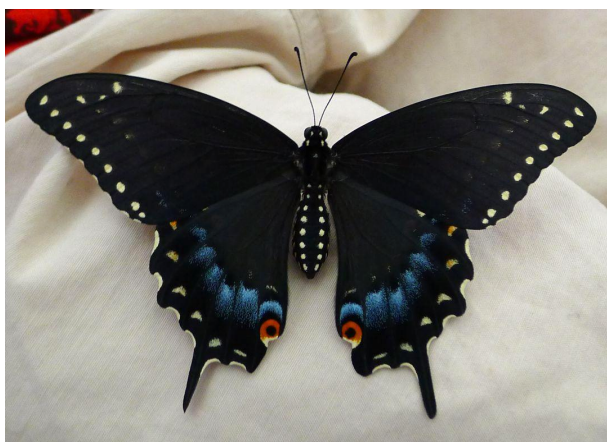


Female drinking nectar on a sedum plant¹¹

Their unique appearance makes Black Swallowtails special. Along with having the distinctive “swallow tail” at the back edge of each wing, they have a unique color pattern, as seen in these photos. The males have larger yellow spots while the females have more blue.

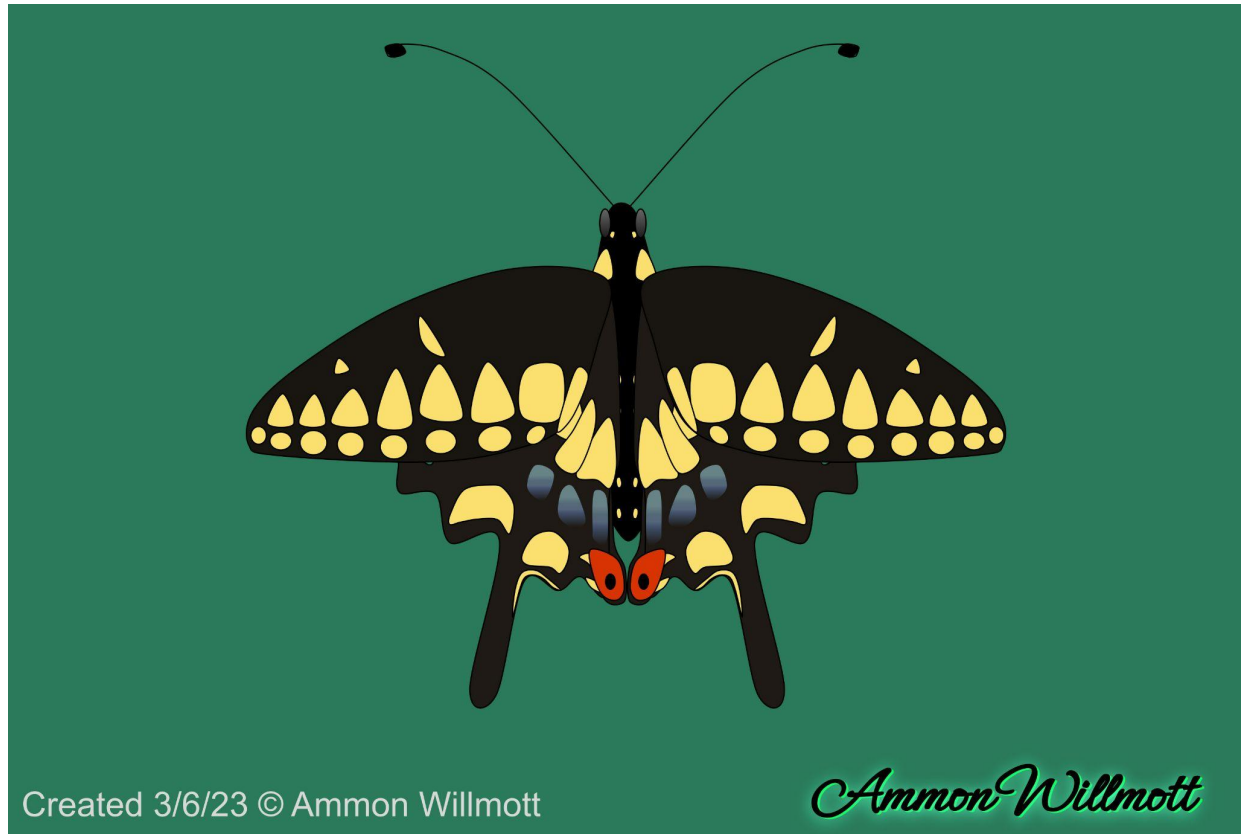


Male (one we raised)



Female (another one we raised)

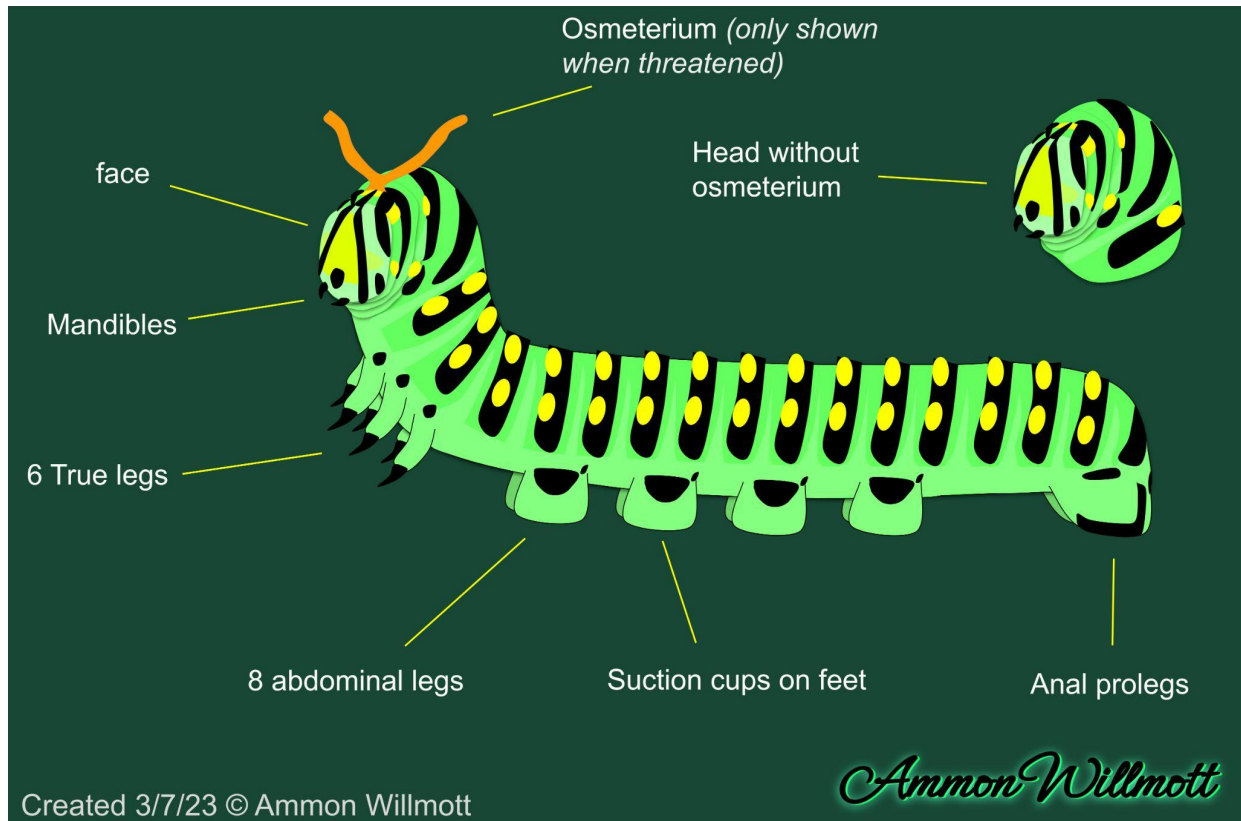
¹¹ Photo taken by my neighbor Judy Laswell, September 4, 2017



I drew the above illustration using Google Draw on my computer. This depicts a male Black Swallowtail butterfly with its wings swept back.



Photograph taken by my mom which shows how the underside of the wing pattern mimics the poisonous Pipevine Swallowtail.



I drew this illustration using Google Draw on my computer. This depicts the unique color pattern of the Black Swallowtail caterpillar and identifies the various body parts.

Judy Laswell, my neighbor and a member of the Livonia Garden Club, told me about Michigan House Bill 5642 which proposes to make the Black Swallowtail Michigan's official state butterfly. It would be wonderful if the butterflies I raised as a child became our state butterfly. Organizations such as Michigan Garden Club and Meridian Township Garden Club support the bill. The Michigan Garden Club sold Black Swallowtail pins to help support the cause. Brenda Dziedzic informed me that not much has happened with that bill since last May. I verified this unfortunate fact on the Michigan.gov website.



Black Swallowtail pin from the Michigan Garden Club¹²

Black Swallowtails are fascinating creatures. They are prey, but far from defenseless. They pollinate to keep the world going. They help defend our gardens from pests with their osmeterium. Black Swallowtails make great pets by providing entertainment and learning opportunities to those who study them. They have their own unique color pattern. Black Swallowtails certainly are special guests.

word count: 747

¹² Photo taken by my neighbor Judy Laswell, March 6, 2023