

Addressing Human Attitudes towards Insects through Storytelling

By: Susanna Sisk

The original intent of this Capstone project was to create an educational story about insects to be used in a school setting. However, as work on the project progressed, something occurred to me. This department and others have been working for a while now to educate the public on insects and their relatives, and while people are learning, if asked, most will say they would still kill an insect or relative on sight. So instead of writing a purely educational story, the purpose of this project changed to something more complicated. Could people be made more empathetic or at least more comfortable with insects?

The method to test that still came in the form of a short story. To simplify the initial test, moths and butterflies were selected as subjects for the story. People are already partial to both, butterflies more than moths, but people are less likely to kill either on sight. In hindsight, a slightly more difficult insect could have been used, a honeybee perhaps. It is difficult to truly analyze the public's reactions if an insect they are already comfortable with is used. A honeybee would have been a better early test of empathy since people are more open to learning about it, yet most still carry some fear of it as well.

The story is based off the symbiotic relationship of the Monarch butterfly with the milkweed plant. The main character is a young tobacco hornworm caterpillar named Psyche who wants to change her fate and become a butterfly. Some creative liberties were taken with biology for the effect of the story as Psyche does change herself; she is still a moth at the end, but her wings resemble a bright yellow death's-head moth (links to images on page 8). Fewer liberties will be taken in future experiments as despite a small disclaimer at the end of the story; there were still some readers who thought that moth caterpillars could be changed that dramatically in real life.

After the story was completed, it was released to public review alongside a list of open-ended questions;

Name: _____

Are you an Entomology student or have you taken an Entomology class?

Yes/No

The purpose of this experiment is to familiarize the public to insects in a way that is not purely educational. The intent is to create a more empathetic connection to a group of species that are often perceived as pests.

1. Do you feel that this story achieves its intended purpose? Why or why not?
2. If not, then do you have any suggestions of how that purpose could be fulfilled?
3. Does this story make you curious about the insects involved in it?
4. Did you learn anything new from this story?
5. Would you read a collection of stories like this one if you found it in a bookstore or library? Yes/No
6. Would you read a story like this if it were about other insects such as cockroaches or wasps? Why or why not?
7. Would you like to see more stories like this one in the future? Yes/No
 - a. What insect would you want to read a story about?
8. Feel free to leave any additional comments/advice/questions you may have below:

Those tested were of varying ages and backgrounds. Of fifty requested reviewers, eleven responded. (Out of the eleven, one test was deleted as I doubted its honesty.) Three out of the remaining ten responded that they were entomology students or had taken an entomology class. The remaining seven had no prior education on insects. Three of the responders were in their fifties, one was post-graduate, and the remaining six were college-age students in their early twenties.

Response to the first question tended to be divided along the lines of those with entomological knowledge and those without with one outlier. Those in the general public thought the story did achieve its purpose, while those with prior entomology backgrounds tended to think that it was just shy of achieving the potential and felt it needed more direct facts and references to the insect nature of the characters. One reader suggested the word 'skin' be replaced with 'cuticle' for example.

Answers to questions three and four were too varied to present a clear result.

The response to questions five and six were both overwhelming yes, and there was variety of suggestions in regards to question seven. People said they would read a story about ants, spiders and flies, unicorn katydids, dung beetles, luna moths, grasshoppers, ladybugs, cicadas, and anything bizarre or uncommon.

Such a positive response to the possibility of more stories about insects, and uncommon ones at that, shows that future tests have a real possibility of success. However, the pool that was tested was very small and still from around the immediate area. Results might change if a wider pool were tested and throughout different regions. People who have more interaction with cockroach infestation for example, might be less partial to reading a story about them.

I do not feel that I fully achieved what I set out to do. I was too cautious with the material in this story. Yet, the response I received from this small test was positive enough that I have hopes that any future testing would be successful. I fully intend to write a collection of insect stories one day and get it published. "The Garden Wall" will be part of that collection; albeit probably with some small edits since I feel it still has some kinks in the storytelling. I have included the present draft, and what was presented to readers below.

Before you read the story I'd like to express my gratitude to my Capstone mentor, Tom Turpin, for putting up with the three or four different and constantly changing stories and formats he endured over the roughly two years before getting to this one. I'd also like to thank my friend Kali Walbring who made the illustration at the end of the story. I'd also like to thank my ten readers; Allison and Todd Murray, Julie Routt, Scottie and Stacey Brittsan, Sara Noë, Emily Rames, Jennifer Thystrup, Emily Zahora, and Katie Zahora.

Now without further ado:

The Garden Wall

By: Susanna Sisk

Illustration by: Kali Walbring

Between two gardens sits a wall.

Now the world is full of walls, some so high that only the birds can fly over, but this particular wall, at least in the beginning, was low enough that two small caterpillars could peer over the edges at each other.

Psyche came from the garden lined up in neat rows filled with vegetables and separated by a path from the carefully pruned rosebush in the corner. Monarch came from a jungle of a garden overgrown by orchids and geraniums, and other such sweet smelling and colorful flowers that spiraled together around a clearing in the center that held a single tall, pink-petaled plant called the milkweed.

Psyche was too young to heed the whisperings of the other moths in their neighboring neat-rowed gardens when they looked over the wall at the jungle on the other side. She missed the dark looks her parents cast when she left broken snail shells and fallen white rose petals at the base of the iron bars that rose up out of the low stone wall. She didn't even notice when the neighbors chastised her parents for letting her get too near the other child. But Monarch saw their looks and heard their whispers, and she never passed anything back through.

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When Psyche grew taller she squeezed through the bars and went over the wall.

She knew enough by now to wait until her parents and the others weren't looking. Monarch was waiting when she crossed over. Eagerly, she took Psyche's hand and led her deeper into the garden, babbling happily all the while about this flower and that plant; snap dragons and bleeding hearts, lavender and sage, willow and oak trees.

Once, the two caterpillars came upon Monarch's mother elbow deep in the soil among the orchids. Psyche was stunned by the butterfly's bright orange wings. She'd never seen wings so colorful and intricately decorated by black bands and white spots. The wings fanned slightly as the woman hummed about her work. Psyche thought of her parents' dull brown wings that always lay crumpled against their backs and was sad at the thought that someday she'd have wings like theirs. She found herself suddenly envious of Monarch. One day she'd have wings as glorious her mother's.

Seemingly unaware of the caterpillar's envious look, the butterfly invited both children to help her plant the new orchids. Tucking the flower bulbs into the soil was much like planting the potatoes for the garden at home, Psyche thought, and she wondered not for the first time why her parents and the others had such an aversion for the jungle on the other side of the wall.

To Psyche the garden was beautiful and as time moved on she spent more and more of her days across the wall from the neatly organized garden of her parents'. Every now and then she brought a part of the jungle garden home in her pockets; an orchid bulb, a hyacinth blossom, a branch of the geranium, and a sprig of lavender. She always thought about showing it to her parents, to help them see the other side as she did, but every time she lost her nerve and hid all of her findings away beneath the floorboards in her room.

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Then came the day when the two caterpillars' wanderings led them to the center of the jungle garden. Monarch immediately ran forward to the milkweed and ran her hand against the underside of the large leaves.

"They feel like velvet Psyche, come and see!" she called over to her friend.

Psyche ran forward, grinning, but found her way blocked by Monarch's mother. Psyche stopped in her tracks, stunned by the sheer size of the bright orange wings now stretched wide to block any sight of the milkweed. The butterfly folded her wings back and bent down until her face was level with the caterpillar child's.

“Don’t touch it little one.” Psyche thought she looked very sad when she spoke. “You won’t like what will happen if you do.”

Psyche almost argued, but the woman cut her off when she stood and moved away.

“You should run along home now, it’s getting late.” The woman’s voice was cutting and dismissive, and she didn’t glance back over her shoulder.

Psyche could only nod, numbly, before turning around and running out of the clearing as fast as she could, ignoring Monarch’s voice behind her calling her name. She could feel tears threatening to fall down her face. She couldn’t quite say why she felt so upset, only that this was the first time she’d been made to feel different from Monarch and her mother. She knew deep down that she would never look like them, but now she knew that she could never be them either.

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It took several days, but eventually Psyche returned to the jungle on the other side of the wall. Monarch wasn’t waiting for her when she stepped down from between the bars, and at first she almost turned around and went back. Instead she walked into the jungle garden on her own.

It wasn’t long before she found herself standing in the center of the garden before the milkweed. The butterfly’s words echoed in her head, and Psyche almost turned around right then and walked away. But in the end curiosity got the better of her and instead of heeding the words of Monarch’s mother, she approached the forbidden plant. She didn’t think anyone would notice if she just ran her hand over the underside of one of the large leaves. It did feel like velvet just as Monarch had said. Psyche laughed and reached up to run a finger over the tiny flowers. Even this close she could barely smell any scent coming from the pink blossoms. She giggled even more when her fingers began to tingle. There were fat seed pods now sitting on the edge of the plant, and Psyche poked at the bumpy green surface of one. The pressure caused the pod to wobble and the fall off the stem, and with horror, Psyche caught it in her hands. The sound of fluttering wings caused her to start even more and turn around guiltily, shoving the broken pod behind her back.

The butterfly stood at the edge of the small clearing, her beautiful wings fluttering softly behind her. Psyche thought at first the woman would see the broken part on the plant, but she didn’t look. Instead, she beckoned towards the caterpillar;

“Come here Psyche.”

Biting her lip nervously, Psyche complied. Gracefully the butterfly sank to the ground and folded her wings neatly behind her as she sat, patting the ground beside her. Psyche sat down, watching the woman cautiously, debating whether or not to come clean even as she stuffed the pod in her pocket. This wasn’t the response she’d expected from touching the plant, and it made her nervous if a little hopeful. Maybe the butterfly wouldn’t be too angry that she’d broken part of the plant. The woman, for her part, seemed to pause and think over her words before she began to speak. She stopped before any sound left her mouth, paused again, and then sighed.

“I’m afraid I can’t explain any of this to you very well.” The butterfly smiled down at the child apologetically; “I can only say with certainty, that I should never have let you play in this garden.”

Psyche was crushed. She opened her mouth to ask; *Why? Why, when this place was so much better than the neat orderly rows back home? When in this place she felt more comfortable than she did in her own home!* But the butterfly’s upraised hand stopped her.

“It is not your fault for being curious little one.”

“Then why do I have to leave?” Even to her own ears, Psyche sounded whiny. The butterfly stood and hesitated again before answering, reaching out to pull Psyche to her feet.

“The milkweed is only for the butterfly’s touch. Moths, even little ones like yourself,” the woman shrugged as she began walking away, pulling Psyche gently after her; “can be irreparably changed from touching it.”

Psyche remembered the tingling in her fingers and rubbed them together, hoping again for the feeling. She looked over her shoulder as the milkweed gradually fell out of sight.

“Would that really be a bad thing? If I became a butterfly, would that make it all alright?” Psyche’s heart skipped a beat at the thought of one day having wings as beautiful as the woman walking next to her, but the butterfly only shook her head.

“You can’t be a butterfly little one.” The woman’s words felt like a heavy weight on the caterpillar’s shoulders; “You’re a moth, and even touching the milkweed will not change that.”

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True to her word, Monarch’s mother led Psyche back to the wall, and waited as she climbed over. Psyche spent the rest of the day beside the rosebush, plucking the white petals off the blossoms and letting them drift softly to the ground, watching the bright rainbow forest on the other side.

The next morning, Psyche came outside to see that the iron bars above the low wall were gone, and instead replaced by more stone wall that rose so high into the air, that she doubted even the birds could fly over.

The broken pod of the milkweed she placed with the rest under the floorboards of her room.

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As time passed, Psyche forgot some of what she’d known in the jungle garden. Instead, she knew the neat orderly rows of her mother’s garden, and the dull vegetables that grew in them. Most days she would sit in the dirt and help her mother pull carrots and potatoes from the soil. Other days she would sit by the rosebush and wish the white blossoms on it would turn the colors of the garden she could no longer see.

And in the dead of night, she would take out all the pieces of that strange, unreachable garden; an orchid bulb, a hyacinth blossom, a sprig of lavender, and finally the milkweed pod with its downy insides, as fresh as the day she’d pocketed them away. She would look at them, silvered by the moonlight, and she would let herself remember. For some that might have been enough, but then again, for most, simply looking at the garden on the other side of the wall would have been enough too.

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Psyche grew tired of pulling vegetables from the soft soil of the neat orderly garden, and she grew tired of the dull, colorless vegetables. She was tired of the white rosebush that couldn’t grow anything else. It seemed even in her memories that even the jungle garden was growing dimmer and more colorless as time moved on.

Sometimes Psyche even believed she had imagined it all; that the high wall had always been there and that what was on the other side was just more neat tidy rows of vegetables. In, the silvery moonlight, not even the hyacinth or the orchid seemed bright enough anymore.

So one morning when she couldn’t stand it anymore she took out the orchid bulb from its hiding place and carried it, along with one of her mother’s trowels, out to a patch of empty dirt near the rosebush. There, she dug a shallow hole as she’d been taught by the butterfly, and planted the orchid.

When her mother asked her why she watered and tended that patch so lovingly, she simply claimed to have taken an interest in the neighboring rosebush.

The orchid when it grew and blossomed was a shockingly vivid purple. Psyche felt her heart stir at the sight in a way she hadn't felt it do since before the wall went higher. Even so she felt sad for the flower. How lonely it looked against the dullness of the surrounding world.

Her mother and father were not as thrilled by the sight, to put it mildly. Her father fainted dead away. Her mother rushed to pull the offending plant out, but not before she donned heavy gloves. Then she yelled at Psyche long enough and loud enough that the neighbors came out to stare, and Psyche was made to swear up and down that it was the only thing she had brought over from the other side.

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They might as well have not bothered uprooting the orchid. Whatever it was of the jungle could not be as easily uprooted. Something had been left in the soil that journeyed first into the rosebush, bruising the white petals a deep magenta, then into the tomato plant and the carrots and the beans. Oddly enough it did not stray outside the one garden, but the neighbors feared that it did, and some even went so far as to scorch the earth around the borders separating them from what was termed the infected area.

Psyche couldn't understand her neighbor's fears, or why her parents now refused to step outside their house. This new garden, even if it was just tomato plants and beans, was as bright and beautiful to her as the one she could no longer see. She took to carrying around the milkweed pod when she went to tend the bright garden.

It was around this time that Psyche began to feel the dull aches and pains that her mother, who would occasionally come to sit by the window to talk to her, told her meant she was would soon have to make a cocoon. This of course, reminded Psyche of the butterfly woman on the other side of the wall and her magnificent orange wings.

"I hope I can have wings like that." Psyche told her mother with dreamy eyes. Her mother scoffed.

"You're a moth Psyche, you can't ever have butterfly wings."

"I could change that if I really wanted to."

"How? You can't change what you are!"

"Why not?" Psyche looked her mother dead in the eyes, running her hands over the lumpy surface of the milkweed pod she always held in her hands; "I changed this garden didn't I?"

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Yet, despite her defiant words, Psyche began to doubt. The garden in all its rainbow colors began to look false in her eyes, like a fuzzy photograph; a poor imitation of the place she could barely remember. Gradually, she tended to it less and less until all she did was sit with her back against the high wall, running her fingers endlessly over the bumpy surface of the milkweed pod.

The aches and pains only increased in that time and Psyche could feel her muscles and tendons straining against the underside of her skin as they grew too large for her current shape. Sometimes, Psyche felt as if she would burst open, the strain was so great. And in that time, she grew a little frightened. Not of bursting into little bits, but of forming her cocoon.

A garden was a much simpler thing to change than a moth into a butterfly, and Psyche was afraid of the dull brown, folded wings like those on her parents and the rest of the village. But what

frightened her the most was that the change would go deeper. That she would wake from the cocoon, dull-winged, and that it wouldn't matter to her in the slightest. That the colorful garden she had built for herself would terrify her like it did her parents. That in the end she wouldn't be any different from the rest of the dull moths and their neat-rowed gardens.

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When she couldn't stand it any longer, Psyche stood up and pocketed the milkweed pod. She strode past the inadequate garden of rainbow flowers, past her mother sitting in the window, and out the garden gate. She walked until the entire village was behind her, and she kept walking. Occasionally, the pain made her pause to catch her breath, and she would curl into herself on the path until she could see straight enough to move again.

There was nothing but birds and flat green fields of grass beyond the village, but to Psyche it was oddly refreshing. There were no annoyingly straight rows of vegetables, no infuriatingly, frustratingly bright flowers to remind her of what she wasn't.

Then came the point where she could walk no further. The pain was almost blinding, and all she could do was pull the surrounding blades of grass around herself and sew them together with string from her pocket. It was time to change whether she wanted to or not.

As she drifted out of consciousness, she idly hoped that if she really were destined to become a dull-winged, dull-minded moth, than maybe a bird would be kind enough to come along and eat her before she woke up. She felt the familiar weight of the milkweed pod in her pocket, and she hoped even more that she could wake up a butterfly.

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The first thing she knew when she woke up was that she was still a moth, and she began to despair.

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When they had dried, Psyche spread her new wings wide across her shoulders, expecting the same dull brown lines and blotches as her parents' wings. But instead her eyes were greeted by a burst of color.

They were not butterfly wings, but neither were they like the wings in the village. They flashed bright yellow with black stripes cascading to the end, and even the brown backside of the wings had

golden highlights. A little bit shocked at the sight, Psyche reached out to delicately trace the lines of the stripes with her finger tips before letting the pads rest on the bright yellow underside.

The wings were beautiful, but they still weren't butterfly wings, Psyche thought with a small ache in her chest. Then she pushed the feeling aside. No they were not butterfly wings because she was a moth, and as much as she didn't want to be that was what she was. She would have to learn to live with it.

However, neither was she like the villagers. Psyche smiled at her new wings and flapped them experimentally, marveling at the flash of the gold highlights. These were her wings, somewhere in between moth and butterfly, and as much as it surprised her, she was quite alright with that.

Psyche reached into her pocket and pulled out the milkweed pod. Clearing a space in the grass, she set about digging a hole to plant it.

The End



“The Garden Wall” is inspired by the real life behavior of the Monarch butterfly. As larvae, the insects dwell and feed on the milkweed plant which gives them the natural toxins that they carry as adults. This is also indirectly responsible for their bright coloring that warns predators of their poisonous taste. (<http://www.monarchwatch.org/milkweed/>)

Psyche and her parents are based off the Tobacco Hornworm moth, a common species in the Indiana area that is of a plain brown coloring as an adult. Psyche's wings at the end of the story are inspired by a different species of moth; the Death's Head hawkmoth *Acherontia atropos* (http://tpittaway.tripod.com/sphinx/a_atr.htm).