

FLY FREE

A Monarch Butterfly Story



By: Grand Pa J and the Monarchs
Assisted by my Granddaughters: Lorelei & Ceilidh Johnson

This is the story, in pictures, of a monarch caterpillar and its route to becoming a butterfly.

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All errors in the following document are mine and mine alone.

This not meant to be a scientific study or report

I took all the pictures used, except where noted.

Cheers, FEJ

Butterfly Lady

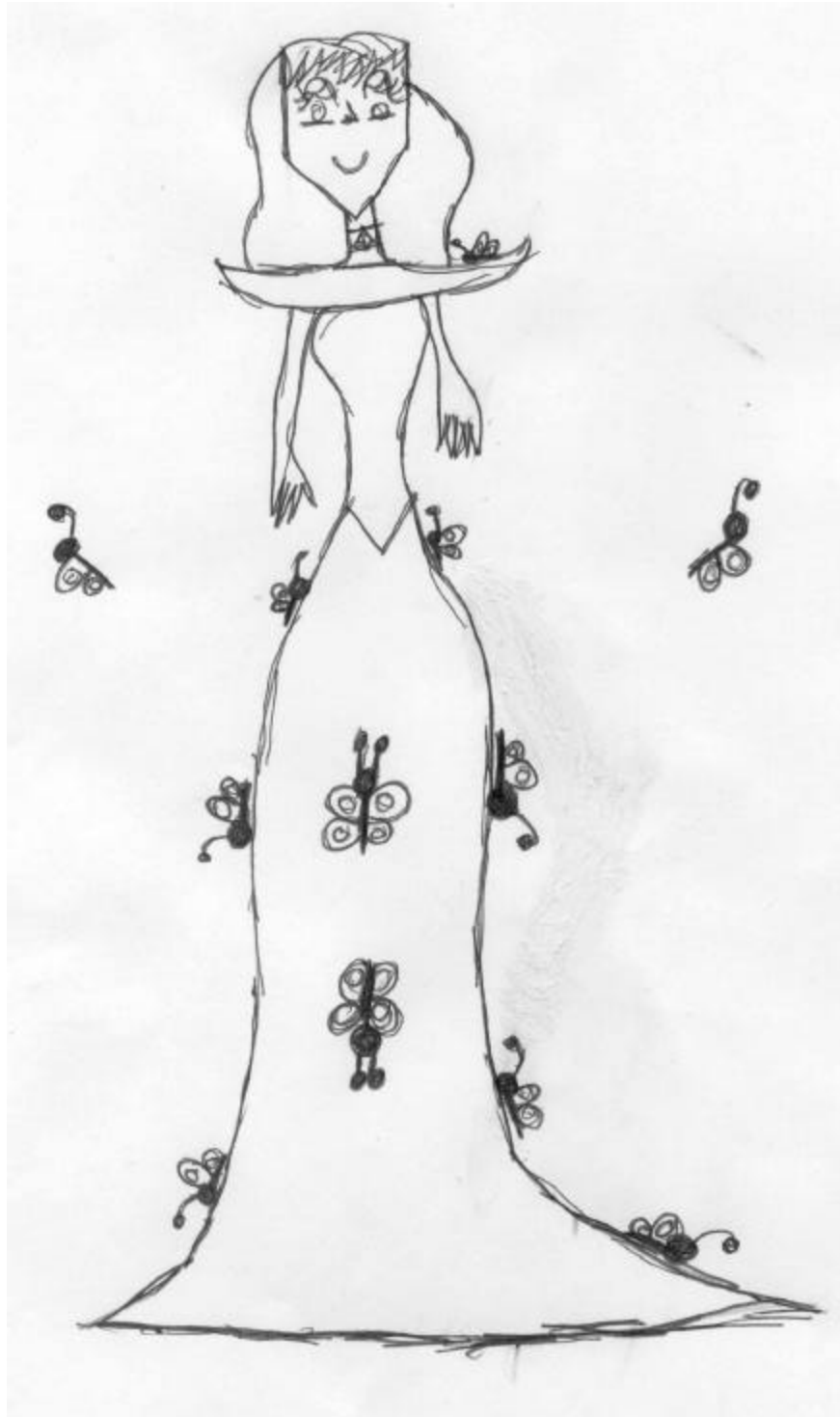


Fig. 1 [Drawing by: Lorelei]

It is generally known that Monarch Butterflies go to Mexico in the winter to get together with millions of other Monarchs. They are not the same butterflies that wintered there the previous winter, but their descendants from the tenth, or later generations.

But this story is not about the Monarchs that go to Mexico. This story is about some Monarchs that ended up in Florida during the winter. Specifically the ones that ended near Tampa (Like this one found sitting on my pool screen one day in January.)

Perhaps the descendants of these Tampa Monarchs will end up in Mexico in future years.



Fig. 2

Now to the story of my experience with the Monarchs:

In the beginning Ceilidh saw this caterpillar on the leaf of a Milkweed plant. It is a young caterpillar eating its favorite food - the juice and leaves of the Milkweed plant. It hatched on this plant from an egg its mother left on the bottom of a leaf. It only takes a few days for the caterpillar to increase its size as it puts on weight in preparation for the metamorphosis stage to come.



Fig. 3



Fig. 4

The caterpillars are food to birds and small creatures such as lizards. So this caterpillar needed protection if it was to grow and become a butterfly. I built a small cage with scrap lumber and a few nails. Then wrapped it with

window screen and placed a small plant inside for the caterpillars to eat. Ceilidh found more caterpillars for the cage.

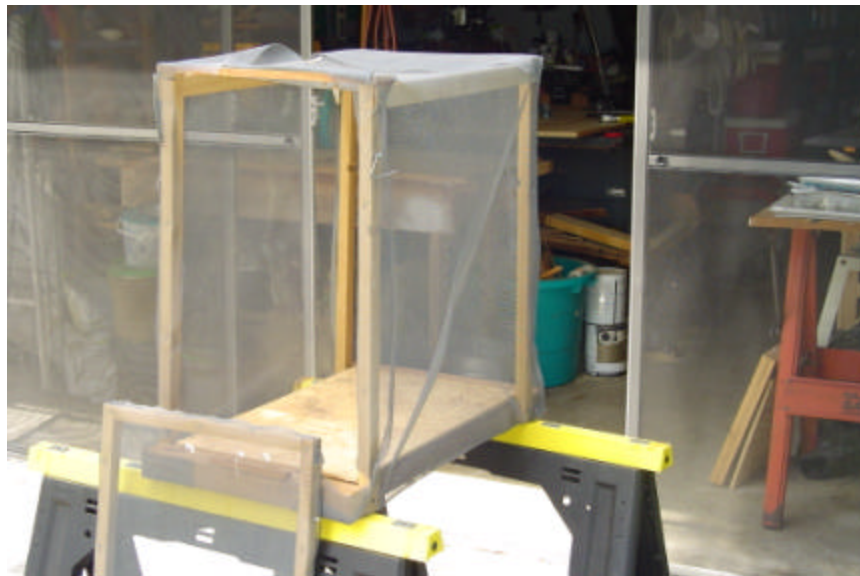


Fig. 5



Fig. 6

The cage looks like it is leaning to its left, and it is. However, it is straight when the door is in place and I have not heard any of the caterpillars complaining. It should have been a little taller so the taller plants would not have to bend over while inside.



Fig. 7

The little white dots on the bottom of the leaf are butterfly eggs. Here in the cage they can hatch into caterpillars without the birds and lizards eating them. There were 4 eggs on this plant. Three hatched the next day.

Now - Into Metamorphosis



Fig. 8

In this these photos you can see that caterpillars suspend themselves upside down when they prepare to go into metamorphosis.

This was a rare event as the caterpillar attached itself to a leaf of the milkweed plant. All the other caterpillars have gone up to the top of the cage, as high as they could go. This one soon curved into the "J" shape they all take before the chrysalis stage gets started.



Fig. 9

Normally all caterpillars will remain motionless while hanging awaiting their chrysalis stage. When I saw the caterpillar on the right start to wiggle around a little it indicated that something was about to happen. I grabbed the camera and took this picture to start a record of the sequence to follow. Note the chrysalis to the left of a caterpillar that previously went into metamorphosis.



Fig. 10

The next photo shows the start of the chrysalis development from the head of the caterpillar. The material seemed to just ooze out of the skin, in a series of rings around the body of the caterpillar. Note the ring pattern on the chrysalis to the left of a caterpillar that previously went into metamorphosis.



Fig. 11



Fig. 12



Fig. 13

Note how the chrysalis continues the ring pattern up the caterpillar in pictures 12 through 16.



Fig. 14



Fig. 15



Fig. 16

Fig 16 shows what the finished chrysalis looks like after the debris is pinched off at the top of the tail. The debris consists of caterpillar parts not needed by the finished butterfly. The dark ring has small gold colored spots in it. I suspect the color green works as camouflage as it hangs in nature

The time from Figure 11 to Figure 16 was about 5 minutes.

In this stage of the life cycle the creature inside the chrysalis is no longer a caterpillar. It is not a butterfly yet either. It is now called a Pupa .

This part of the story shows the butterfly emerging from the chrysalis.

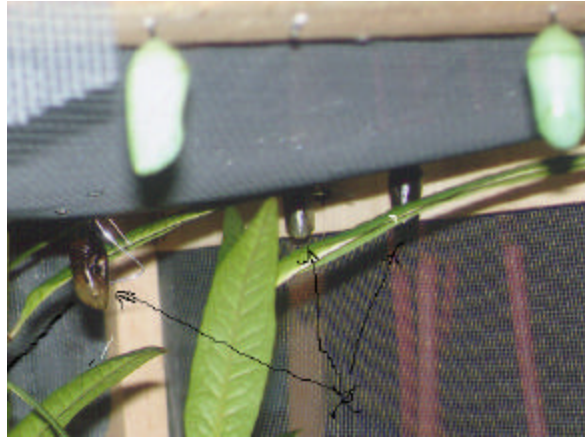


Fig. 17 [Photo by Becki Smit]h

In this photo you can see the darkened chrysalis in the background. This color change from green to black happens about 24 hours before the chrysalis clears and the butterfly is ready to emerge.



Fig. 18

Note that the green chrysalis has now turned so clear that you can see the butterfly inside just before it emerges. The wings are tightly wrapped around the body of the butterfly.



Fig. 19

This butterfly has just emerged from its chrysalis. Note that the wings are still folded.



Fig. 20

Here in Fig 20 you can see the wings starting to unfold. This process will continue in Figures 21 and 22.



Fig. 21



Fig. 22

We now have a complete butterfly. However, it cannot fly at this time. It must continue to exercise its wings to pump blood out the veins to make them strong enough to fly. Butterfly wings do not have bones, so the blood pressure must be maintained in order to keep the wings spread for it to fly.

This procedure takes up to half a day during warm weather. It takes longer during cold days, and for one butterfly in January, it took all the first day. I could not let it go until the next morning.

I would take the cage outdoors on sunny days, which seemed to warm and increase the activities of the adult butterflies. This would get them ready to fly away sooner.

I made every butterfly prove that they could fly before I released them to 'fly free.' Usually they would fall from the ceiling of the cage, flapping their wings, and go straight down to the floor. Then they would walk back up to the top of the cage. I would tell them walking strengthens the legs, not the wings, so try again. They usually tried several times, with me urging them on, before the wings started working right.

The following chart shows that time in metamorphosis decreases as the temperature increases.

Month	Tampa Days in Metamorphosis	Historic Avg. Temperatures (F)
January	20 - 22	59.5
February	15 - 16	61.0
April	12 - 14	71.2
May	8.5 - 9	77.1
June	7 - 8	81.2

Note: The Tampa Historic temperatures were found at: <http://tbo.com>

Now - 'Fly Free'

A Butterfly learning to fly was also a learning experience for me. When I thought my first group ready I opened the cage door and nothing happened. I waited and they just stayed inside the cage.

So I reached in and picked one up. It just sat on my hand and looked at me. After a short time I pushed it off my finger. It flapped its wings, made a descending left turn, and made a hard landing at my feet. (Guess they also have to learn how to land.) I put my hand down in front of it and it grabbed my finger with its right leg and climbed unto my hand. Again a few wing flaps and it flew again, only to make another - not as hard- landing back at my feet. Its third try about 5 minutes later went much better and it kept going this time. (I have an eyewitness to this two stories)

Then I pulled out the second butterfly. It too went just a short way and crash-landed. Picked it up and placed it on a red flower. It waved its wings and raised the right foot. So, I picked it up and placed it on a white flower. It did not approve of that color either and raised its right leg to be picked up. This time I held it for a few minutes as it practiced its wing flapping routine. Then it got going and landed on one of the purple flowers near the top of a Tibouchina tree.

It was then that I decided to make them prove to me that they can fly inside the cage before releasing them.

Would you say the butterflies were right handed? Right footed? Or right legged? I will go with right legged.

Only a few stayed around once the cage door was opened. The rest flew away as fast as their wings could take them. They did not even take time to say, "I'm out of here."

Score: From January 2007 through July 2007
52 caterpillars - 42 butterflies flying free



Fig. 23 [Photo by Becki Smith]

This one did not want the leaf because they eat nectar - caterpillars eat leaves.



Fig. 24 [Photo by Becki Smith]

Note caterpillar on leaf just above the butterfly.



Fig. 25

My friend still does not want to leave.

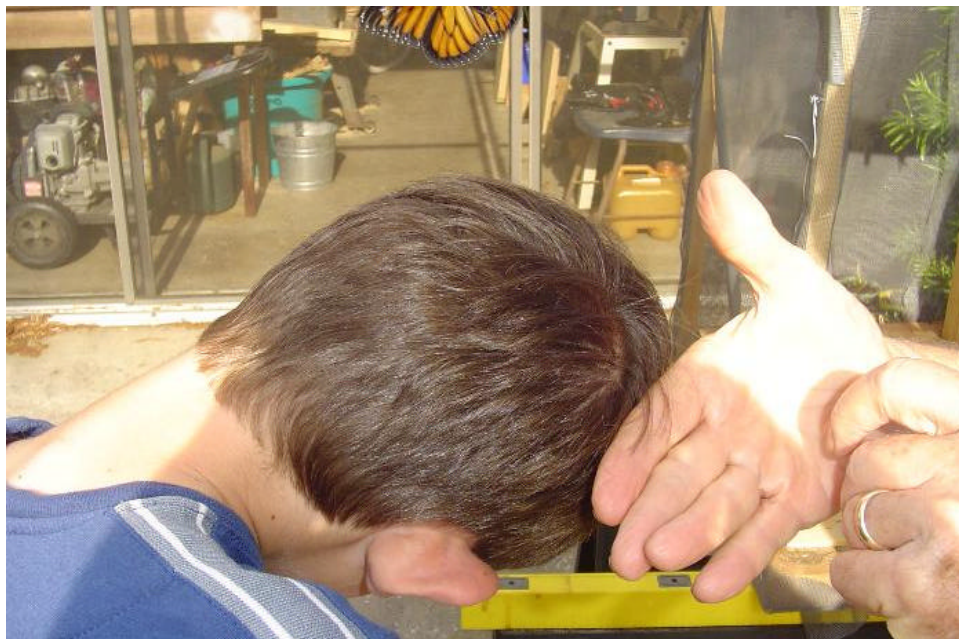


Fig. 26 [Photo: by Edward Langer]

Michael, Ed's son, wanted me to put the butterfly on top of his head for a picture. Butterfly wanted nothing to do with that. Ed's picture caught the butterfly leaving - at the top of the photo.



Fig. 27 [Photo by Edward Langer]



Drawing by Lorelei
And the butterfly Lady says, "FLY FREE."