

Loretta Shigo: Trailing the Monarchs V

A butterfly is born

Following the last article with its pupa dance, Conga beat and the light of a child's imagination, let's check in with the pupa now in chrysalis form.

It has remained in this state for eight or so days not eating nor moving. Faint wing patterns are now visible in the green of the pupa. The chrysalis is in fact transparent; the green color is the pupa itself.

Ten to 12 days after pupation, the day before emergence, the pupa turns black and the orange, black and white wing colors can be seen. Inside, the butterfly is waiting for the internal signal that will nudge its legs to push open the doorway built into the chrysalis. Shrinking and turning somewhat opaque like wax paper, ridges form on the dome of the chrysalis outlining the butterfly's abdomen.

The butterfly pulls away slightly from the chrysalis walls, as if taking a breath. Indeed, watching this process, I have held my breath waiting, watching, and squinting to see the first stirrings of emergence.

What prompts the next step? A biological process moved along by a combination of temperature and sunshine, and although unscientific, perhaps even a little magic.

A gap appears where the doorway edges have separated a bit, revealing a glimpse of what lives within. A few heartbeats (my own) later, the gap widens. The legs of the butterfly can be seen pushing the door open.

A pause – a few more heartbeats, and the legs extend themselves opening the door wider as bits of membrane cling to the edges of the gap. Another pause, then the head drops below the doorway and with a graceful slide the monarch tumbles out into the world head first, grasping the skin of its chrysalis with Velcro-like feet.

Gravity overtakes the abdomen as the butterfly somersaults into an upright position. The proboscis splays out in two parts and the antennae spring up and back. For a moment, it seems impossible that this creature will be able to maintain its hold on the skin. Twirling



A butterfly emerges from chrysalis.

from side to side, miniature wings brilliant with color and damp with birth fluid, the butterfly has emerged!

Does not the process of birth awe, in any manner?

Unlike our own wailing entrance into waiting hands that swaddle us in warm blankets and check to make sure that all our parts are there, the monarch emerges silently and mostly unseen into a hostile environment and immediately begins the business of survival.

Dangling by its feet, it starts pumping its muscles pushing fluids stored in its fat abdomen through the veins of its tiny crumpled wings thus expanding them. It reaches for a better purchase on the papery skin of the chrysalis and twirls, flexing its proboscis, which is in two parts.

Imagine a straw that has been slit in half. With its tiny palpi, the monarch gently pats the two strands together curling and unfurl-

ing them until they have fused or zipped up to form a hollow tube. This tube, a mere two inches or so long, contains nerves and muscles which enable the butterfly to draw in fluids and sip nectar from flowers.

Coiling up its proboscis when done, the butterfly continues with the process of wing expansion. It takes about 15 to 20 minutes for the wings to fully expand. Hanging like damp crepe paper, the wings droop and sway as the butterfly shifts positions. Drying time is about four to six hours. The butterfly remains with its wings closed until they are dry, stiff and flight worthy.

Most vulnerable at this beginning of the last stage of its life, the monarch must withstand breezes that may blow it from its perch, predators that may try to eat it and humans with mowers, weed-wackers and pesticides. To be knocked off and fall to the ground means almost certain death, as the wings may crumple and dry deformed, rendering the butterfly unable to fly.

On the brighter side, nature has endowed the insect world with the ability to proliferate in amazing numbers. Two percent of the millions of monarch eggs laid in a season survive the journey from egg to adulthood, evidenced by the yearly migration to Mexico. Staggering numbers of butterflies over-winter in the Mexican Oyamel forest reserves.

There they wait for the signal come spring that will spur their migration north to the new milkweed patches of Texas and the Gulf Coast states where they will lay the eggs of the next generation.

The fall migration to Mexico is under way! Future articles will feature The Great Migration South, milkweed seed collecting and more.

Until then, be part of the journey. Plant milkweed.

Visit monarchjourney.com for time-lapse photography of a monarch emergence, school program information and more. E-mail info@monarchjourney or call 267-614-3609.