

# The Other Side of Paradise - Part II

## When Worms Take Wings

By Rob Bettaso

Indulge me a moment as I attempt to re-create a circa 1930's radio drama (something like *The Shadow* or maybe, *The Lone Ranger*): When we last tuned in (Part I of this article in the September GYMOAZ), our hero, the lowly caterpillar, was in a state of suspended animation in what is known as the pupa stage of development. The fantastic forces of evolution (or Supreme Design, you be the judge) had conspired to envelop our quiescent protagonist in an all-encompassing cocoon.

Yet now, said cocoon is ripping apart at its seams and a strange new creature is about to emerge -- The Butterfly (cue a powerful operatic theme, Puccini's *Madame Butterfly* anyone?). She unfurls her still fragile wings and prepares for her maiden flight. In this particular case, The Butterfly is a Monarch -- ruler of a Kingdom that stretches from Canada to Mexico (and an Empire that has, in recent decades, expanded to colonize far-flung portions of the world).

Indulgence over, back to more prosaic narration. After all, virtually all species undergo a transformation of sorts. Many will even experience the miracle of metamorphosis, including the pustulant maggot (changing into the only slightly less disgusting housefly) or the goggle-eyed, gaping tadpole -- before our very eyes, *sans* cocoon, slowly (over weeks) re-configuring into the humble but lovable toad.

For the past several months, while working as a seasonal biologist (a job that has had me slogging through various high elevation creeks and rivers), I had been privileged to witness congregations of butterflies swirling among the riparian blossoms. On a recent September weekend, off-duty from my job, I decided to direct my butterfly viewing energies on one particular locale -- Silver Creek, about 15 miles north of Pinetop.

In the course of doing a bit of library research on various butterfly species, I had fortuitously happened upon a website focusing on monarch butterflies in the Southwestern United States. It even turned out that a "citizen-science" group ([www.swmonarchs.org](http://www.swmonarchs.org)) dedicated to monarch butterfly research and conservation in the Southwest was planning their annual field trip to tag monarchs near the State Hatchery at Silver Creek.

I corresponded with the group's leader, Gail, and reserved a spot among the participants who would be attempting to net and tag monarchs. We met at 8 a.m. on a slightly breezy, late summer Saturday. Gail briefly gave our group of ten a quick overview of the morning's plan.

First, she demonstrated (without a living specimen, since we were still in the parking lot) the proper techniques for capturing a monarch: sneak up from behind a monarch that is either feeding or resting on a plant and then, swiftly but gently, either sweep upward or scoop downward with the net. With the monarch in the bottom-most portion of the unusually long net, constrict the netting above the monarch with one's free hand. From there, let go of the handle and reach that hand past the constriction to carefully grasp the butterfly at the point where its four wings come together (the four lobes are referred to as the right and left forewings and the right and left hindwings).

The process of affixing a tiny, super-adhesive, alpha-numeric tag (similar to a very small price sticker on grocery store produce) is likewise a delicate and exacting maneuver. The monarch's orange wings are patterned with conspicuous black "veins" which partition the wings into "cells." Gail used a model (actually, a child's stuffed animal of a monarch!) for her illustration of where to attach the tag which was on the underside of a hindwing in a mitten-shaped area known as the "discal cell."

Next, she issued us each a butterfly net, a sheet of tags, a clipboard, a laminated (and illustrated) instruction sheet, a pencil and a datasheet. On the datasheet were places for us to fill out the following bits of information: weather conditions; date; start and end times; tag number; tagger's name; location; GPS coordinates; County, State; gender (the monarch's, not ours); condition (just emerged, excellent, good, fair to poor); wild or farmed (long story); activity or type of perching/feeding plant; comments. I pondered the last item and figured when it came time to add a "comment," I would insert some lame joke like: "erratic flier, probably drunk due to excessive nectar consumption."

Gail concluded our orientation by having us sign “hold harmless forms” although I was pretty sure I could defend myself against a butterfly.... She then pointed us in the direction of the creek and suggested we begin exploring its other side where there were patches of flowering goldenrod, rabbit brush, mallow, various composites and, she recalled, maybe even some non-flowering milkweeds (the monarch caterpillar’s sole leafy food source).

Our little group crossed the bridge and fanned out through the fields and headed up the slope in the direction of the junipers. As it was still a bit chilly, the butterflies were not yet especially active and the few we saw were other species (red admirals, painted ladies, pipe-vine swallowtails and the fairly common cabbage butterfly). I tested my netting ability on a few cabbage butterflies and quickly discovered that capturing a butterfly, either perching or especially on the wing, was not as easy as I would have thought.

I shied away from being too animated in my attempts -- the mental picture of a stereotypical butterfly collector, clad in safari garb, wearing a pith helmet and leaping about through a field of flowers was not exactly an image I cared to cut (the male ego, being almost as fragile as butterfly wings). In my mind, I envisioned the actor Wally Cox in search of the “rare and beautiful Blue Morpho Butterfly.”

In the distance, I heard a shriek of glee and turned to see one of our crew in pursuit of a monarch -- the first of the day. The would-be Lepidopteraologist was zigging and zagging her way toward me, flailing about with her net and mixing expletives with giggles and whoops. She gave up, slightly winded, as the monarch sailed up high on a gust of wind.

That was to be a fairly frequent occurrence in the early part of the morning. However, once the temperatures warmed up, the monarchs became more numerous, both in their fanciful flights and in their stops to feed on flowers or rest in the junipers where they could escape the wind.

It was on one such juniper that I nabbed the first monarch of the day. I must confess, I was quite thrilled to capture a monarch. Not only because it was the purpose of our outing but also because butterflies are such sublimely delicate creatures; as fragile as a spider’s web. My over-riding impulse was that I not harm the specimen. In my long career as a field biologist, I have known all of us in the profession to occasionally do more harm to an organism than good and generally for a common reason: handling stress.

As such, I was relieved when Gail came to my assistance and closely supervised my extrication of the monarch. Soon, the others in our small group also gathered around to observe the tagging technique. I followed Gail’s reiterated instructions as she coached me through the procedure. When the tag was secure, she instructed me to gently place the monarch on the opened palm of my free hand. I dutifully complied and we all watched as the butterfly flexed her wings and suddenly sprung from my hand and back into the freedom of the air.

With enormous relief, I watched as the liberated “brush-foot” (the common name of the Family Nymphalidae, of which the monarch is a member) fluttered and floated ever-upward. Although monarchs are known for having relatively rigid and powerfully built wings (hence their impressive feats of migration, a rarity in the world of Lepidoptera), it still seemed highly likely that any handling of this gossamer species would result in inadvertent and unseen adverse effects (up to and including a “delayed mortality,” as they say in the profession).

I monitored her progress until she flew beyond sight. I assuaged my worries about handling stress by hoping that the data we gathered did more good for the species than it did harm. We spent another couple of hours catching, tagging and releasing monarchs. Eventually the wind kicked up to such a degree that our efforts were futile and we turned in our data sheets to Gail and called it a day.

As I crossed the bridge back toward my truck, I stopped to watch a fisherman catch and release a stout rainbow trout. He called his son over to demonstrate how to carefully extract the hook and free the trout, all the while taking care to keep the fish partially in the stream and to minimize contact of the fish’s scales with his own wet hands. He’s doing as good a job as we can, I thought, but still, I always wonder if, in our interactions with other species, whether our best efforts might nonetheless take too high a toll.

On the drive home, I reflected back on the morning’s excitement and the ephemeral beauty of a butterfly. Years ago, I had read several books by Vladimir Nabokov, generally regarded as one of the greatest writers of the Twentieth Century. Nabokov was not only a renowned “man of letters” but was also a respected chess expert and, perhaps

somewhat incongruously, an avid butterfly collector. As such, it is fitting that I conclude my story with a paraphrased quote from old Vlad:

My loathing's are simple: stupidity, oppression, cruelty and soft music. My pleasures are the most intense known to man: literature and butterfly hunting.