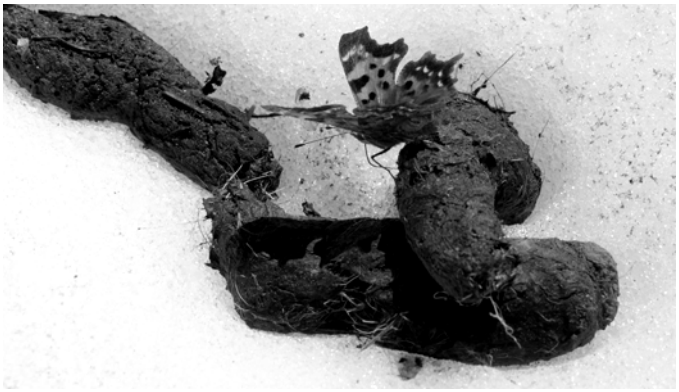
Butterflies and Peregrinations In the Cascades

Guest Naturalist Bob Ross

As I hike in Western Oregon on a regular basis, I often find myself caught up in nature's stories. One of those began while I was snowshoeing in mid-May. I was following the tracks of a coyote that was heading back to its summer home when I came upon its feces. I took a photo of them, and as I did so, a butterfly that I hadn't noticed opened its wings.

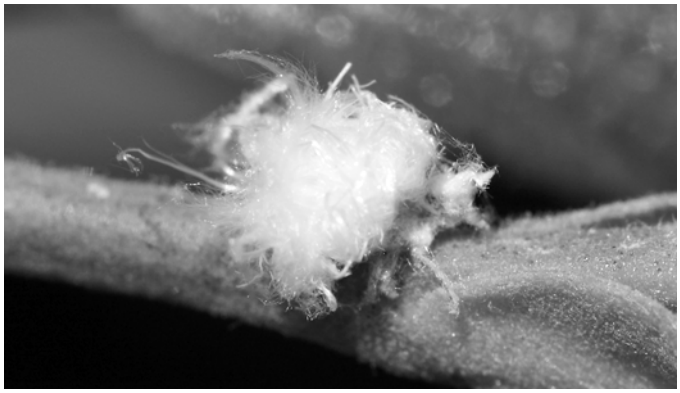


While the undersides of the wings were dark brown and black and had ragged edges, thus making it exquisitely camouflaged, the tops of the butterfly's wings were brilliant orange. Within seconds, it folded its wings together and disappeared. In the next ten minutes, it flashed its wings several times. What does wing-flashing accomplish? Does opening its wings draw air into its body, allow it to communicate with other butterflies, or keep its flight muscles limber? I wondered what the butterfly might be obtaining from the feces--water or minerals perhaps?

A month later, Bill Myers and I were hiking along the ridge between Bear Point and Mt. Jefferson when I noticed large numbers of butterflies streaming quickly over the ridge from South to North. I had noticed them feeding on manzanita flowers as we hiked up to the top of the ridge, but they were moving too quickly from flower to flower for me to be interested in photographing them. I didn't recognize that this was the same species as the coyote feces' butterfly. Actually, I was so intent on other things, that butterflies were pretty low on my list of interests that day.

In June, I had a call from Alice Smith, the botanist at the Sweet Home Ranger District Office, alerting me to the California tortoiseshell butterfly, *Nymphalis californica*, that was literally stripping all of the leaves off of the mountain balm bushes (*Ceanothus velutinus)*. She said the butterflies were in the millions along the Hackleman Creek Road, and that I would have no trouble finding them since they were swarming around puddles in the road.

In haste, I grabbed my camera equipment and raced off to see this miracle. I found the puddles right away, but then I recognized the error of my haste: I hadn't bothered to look in my butterfly book to see what the tortoiseshell looks like. Before me were three species of butterflies. There were many dozens that were bright orange on both sides of the wings, a few had black and white wings, and there was one ragged butterfly that was half dead; it had lost most of its scales, making it look light brown. (This turned out to be the species of interest). I photographed the prevalent orange-orange butterflies and walked down the road to see if I could find the bushes where the caterpillars had eaten all of the leaves. I found a few leaves missing here and there, but nothing like what Alice had described. While searching, though, I did spot something quite unusual: a woolly aphid on an Alder. I photographed it, and soon discovered that it is new to the western United States, and that it is the woolly alder aphid, *Prociphilus tessellates*, which was probably brought to the west on plant materials.



This aphid is common on the east coast, and is revered by ecologists because it is the primary food source of North America's only predatory butterfly. What will restrain it in the west?

Back home I researched the California tortoiseshell butterfly, and realized that I hadn't photographed it at all. A call to Alice made clear that I had not gone down the road far enough to see the damage. A vacation in Yosemite prevented me from getting back to the Cascades right away, but as soon as I could, I ventured back in early July. I was afraid that if Alice had been seeing butterflies in huge swarms a month earlier (but why hadn't I?), then maybe the show was over and I had missed all of the excitement. I traveled farther down the Hackleman Creek Road and discovered the decimated bushes. Actually, there were patches of *Ceanothus* that were entirely stripped of leaves, and patches of bushes that were untouched. Why? I felt fortunate that I could still find caterpillars. They were swarming over the leafy plants and gobbling the leaves with surprising efficiency.

More amazing to me were the pupae that were festooning the bare branches. Talking caused them to start thrashing about, and when many dozens all started thrashing about, the whole bush vibrated in a very ghostly way--particularly since there were no leaves.

Why did noise set them to vibrating? I had never noticed this behavior in pupae of other butterflies. It seemed reasonable to assume that this was protective behavior rather than a mating ritual, so I looked about for possible predators. Over several trips back to

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the mountains, and with much observation, I was only able to find one predator--a bug that I have yet to identify. No birds or anything else seemed to be feeding on the pupae.

I was extremely interested in photographing a butterfly emerging, so I spent many hours watching pupa cases to no avail. One day I decided to take a branch bearing many pupae home with me and watch it carefully. I placed its base in water and left it outside so that the daily changes in light and temperature could have their normal affects upon the pupae. For several days, I inspected the branch every 15 minutes or so. At 9:15 one morning, there were no butterflies, but when I checked again at 9:25, one had appeared. I photographed it and then waited to see if another one would appear. I went into the house to change lenses, and when I came out with my macro lens, a second had emerged. I had missed the action both times, and no others appeared that day. The next day, several more emerged around 9:30, but even though I was watching, I somehow missed the emergences. Shortly after a butterfly would emerge, wasps would appear and start consuming the pupa case--mind you, these are Willamette Valley wasps, not the ones I have seen in the Cascades. Then I saw four wasps showing interest in a live pupa. As they flew around it, the pupa began to vibrate long and hard. The wasps were tossed about and the pupa had a respite from the attackers. I'm not sure how it happened, but somehow several wasps managed to mount an attack on the pupa, because in a while, I saw the wasps carving out pieces of flesh and hauling them away.

Each week in August, I spent a least part of a day studying the butterflies, and particularly looking for predators. Butterflies were moving everywhere--sometimes heading north, sometimes heading south. I wouldn't exactly call it a migration. I failed to find any more predators.

While on a hike near Booth Lake, on the east side of the Cascades, the butterflies were moving from East to West, over the crest of the Cascades. None of the young plants in the B&B Burn (the fire of 2003) seemed to be affected by the butterflies. I did find a few dead caterpillars, so maybe the plants were protecting themselves chemically. The butterflies must have been emerging from bushes closer to the Metolius, beyond the burned part of the forest. They would fly a short distance, land on a blackened tree where they would rest briefly, then fly a short distance and disappear on black wood once again. Butterflies were constantly appearing and disappearing before my eyes. I spent several hours chasing the orange-flashing butterflies in hopes of seeing one land so that I could photograph it camouflaged on black wood. Alas, they flew faster than I could crash through the brush, and as soon as they alighted on the charred trees, they became invisible.

In mid-August I was still going to the mountains early in the mornings (along the Lava Lake Road) to see if I could catch a butterfly emerging. Never any luck. I did find butterflies that were exercising their proboscises. I didn't realize that they were split into two until I examined my photographs closely.

On the early mornings, the butterflies would leave their wings open for a while, perhaps to obtain heat. When visible like this, they festooned the bushes and conifers like Christmas ornaments. They were everywhere. Later in the morning their wings were closed most of the time, yet magic still happened. As each butterfly periodically flashed its wings, it made the forest twinkle with millions of orange lights.

Where did they get their energy? I was surprised to find that I rarely saw them feeding even though I spent many hours watching them and looking at flowers. There was much pearly-everlasting around (*Anaphalis margaritacea*), yet I rarely saw a tortoiseshell on one, and never saw them feeding on any other plants. They regularly alighted on Bill or me, unrolled their proboscises and lapped up salts or whatever. They fed on the salts that had accumulated on our camera gear as well.

The most common places to find gatherings of butterflies continued to be along the edges of puddles and streams and wherever coyote feces were present. They didn't seem to be attracted to bear feces for some reason, even though they were just as prevalent along the roads and trails.

The butterfly drama was only one story that I was pursuing. I have had a fascination with huckleberries as well. One has to find them first, of course. I begin this process by driving down gravel roads and looking for bear feces. If they are spread out (a sign of diarrhea), the huckleberries in the area are too green to eat. If the feces are tall and bright purple, then the berries in the vicinity are ripe. (Since I watch for bear feces, I would surely see butterflies if they were there.) Naturally, I eat the berries in order to celebrate the best that summer has to offer, but there is much more to the story than eating them--but this story is about butterflies.

In addition to looking down for berries and out for butterflies, I also look up for birds while on my peregrinations. Lucky I did so on one sunny huckleberry day in August! I spotted a Peregrine Falcon circling around close by. It then pitched its wings and shot down the

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mountainside and traveled several miles in just a matter of seconds. Good show! Everything seemed to be on the move.

Butterflies were still on the move too. Many millions were crossing the highways and many of these were killed by trucks and cars. Their bodies were strewn all over the road--sometimes 12 to 15 inches apart in every direction. I also observed windrows of butterflies along the center stripes and along the sides of the roads, yet by morning, one would be hard-pressed to find any at all. What denizens of the night were scavenging their bodies?

By late August, there were only a few pupae still hanging on the bushes; most of the empty cases had been consumed. Wondering about the ones that were still present, I tore one open, suspecting that the pupa was dead, and discovered that there were about 50 minute wasps developing inside. I dissected another pupa and discovered similar contents. Hmm, maybe pupae vibrate hard in order to shake off attacking parasitic wasps.

A week later, even the little wasps had left the pupa cases. The few remaining cases that I could locate were empty. I was pleased to see that the shredded bushes were now putting forth a new crop of leaves. I wonder if they are more heavily laced with insecticides?

I continued to see tortoiseshell butterflies on my September hikes, but in steadily decreasing numbers. I am confident that they are camouflaged and are "chilling out" until next spring. I finally had success in photographing a pair of butterflies on a tree trunk. They are nearly invisible in the photo, as you might guess. So this year's butterfly campaign has come to a close and it is time to move on.

Just as sure as I hike, I'll be looking at poop and puddles again next year, but in the meantime, I have to identify all of the organisms I photographed this summer, and of course there will be snowshoeing to see who is out and about in the winter. Busy, busy times--lots to do when you are a naturalist.

A special thank-you to Bob Ross for this wonderful natural history journey. Bob is the author, along with Henrietta Chambers, of *Wildflowers of the Western Cascades*.

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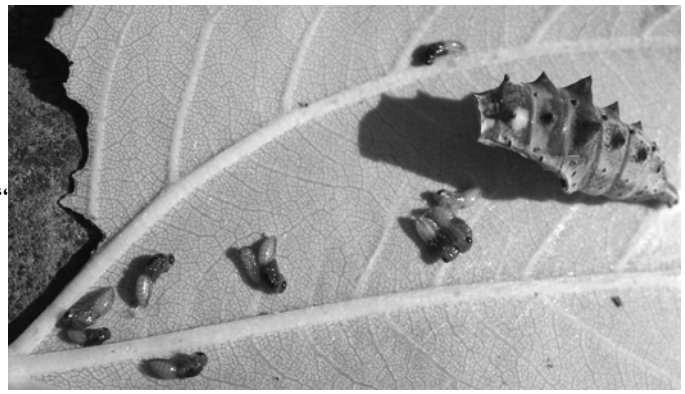

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