



G'n^um*

The newsletter of the Washington Butterfly Association

P.O. Box 31317 Seattle WA 98103
www.naba.org/chapters/nabaws

*G'n^um is the official greeting of WBA. It is derived from the name of common Washington butterfly food plants, of the genus *Eriogonum*.



Overwintering Monarchs near Santa Cruz, CA. See story on page 6.
(D. James)

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Upcoming Programs

Winter Party: January 24, 2015, 6 pm in West Seattle, at the home of Jim Flynn and Marissa Benavente. There will be an E-vite sent out.

Recent Programs

For our October 5 program, Jim Cronan gave a fascinating talk on "Habitat Recovery After Wildfire," covering the importance of fire as a disturbance and the effects of climate, fuels, and fire frequency on fire severity as well as the habitats that result. Jim is Research Scientist at the Forest Service's Pacific Wildland Fire Sciences Laboratory in Seattle as well as a doctoral student in fire ecology at the University of Washington and has over 12 years of experience with wildland fires.

Trip Reports

John Baumann would like to announce the tentative start date of his butterfly class in Spokane this spring, Tuesday, April 28, 2015. He will be teaching it in four daytime sessions that will conclude with a field trip. It will be sponsored by the community college's local Institute For Extended Learning Act 2 program.

Late frost this fall allowed Spokane lepidopterists to continue finding butterflies in select locations in Lincoln County as late as early November. Jeanne Dammarell found four species at Coffeepot Lake, including Cabbage Whites and what might be a Sachem Skipper on Nov 2, and Purplish Coppers and Orange Sulphurs on Nov 7.



Possibly a Sachem Skipper (J. Dammarell)



Purplish Copper (J. Dammarell)

WBA Dues Increase

As of January 1, our dues will increase, for the first time in many years, to \$20 for individuals and \$25 for families.

2015 Annual Conference in Omak



Omak Lake, largest saline lake in Washington.
(Wikipedia user Yimmy149)

This year's annual conference will headquarter in Omak, June 26- 28. Save the dates. Since there are so many great butterfly sites in this region, it might be desirable to add a day and extra field trip for those who'd like to stay over. Dave Nunnallee has been exploring this area over this past year and has identified several great butterfly sites in this butterfly-rich region. Expect to add some new species to your butterfly state-list. Joyce Bergen is working on identifying our headquarter motel and announcements will come later as to conference rates.

Watching Washington Butterflies with Bob Pyle

Number Nineteen

Cloaked in Mystery

The first time I ever beheld a Mourning Cloak, it was flapping across a field, past my face, then soaring, up and over a great domed cottonwood, into the far beyond. I recognized it from a picture in my *Book of Knowledge*, an old black-and-gilt encyclopedia. I was on my first-ever butterfly hunt, catching Painted Ladies. I will never forget it.

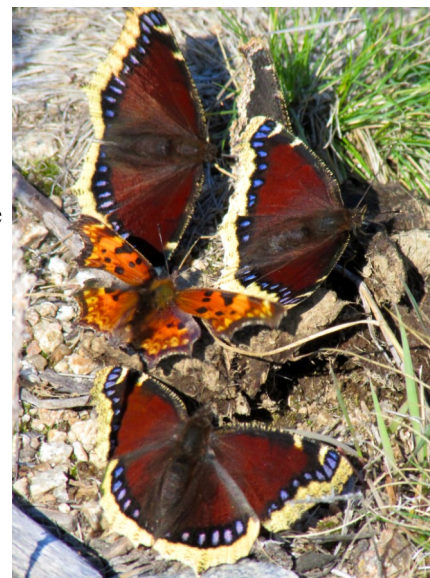
There is something about this big, one-of-a-kind butterfly that few can forget, once they've had a good look. Its ragged but regular outline, impressive bulk, and startling colors—seemingly confected from dark chocolate, French vanilla, and blueberries—impress themselves on the mind and the mind's eye such that you find you're looking for Cloaks evermore.

I remember particular Mourning Cloaks: one tussling with a Monarch, a Weidemeyer's Admiral, and a big darner dragonfly in turn, as it patrolled a section of Colorado canal. Another, nectaring from pussy willows in a German town square in spring, as I nectared on good Pilsner below. A bright one bucketing down a busy street in Guadalajara, heedless of the traffic. A totally tatty one in late August in the Colorado foothills, a possible year-old survivor of the previous winter's hibernation. And, not far from there, behind an old log lodge along the Peak-to-Peak Highway, a cherry-fresh individual drying its wings against a white aspen trunk, before tanking up on the sugars of asters and gentians for the coming winter.

I suspect few lovers of *Nymphalis antiopa* know much about its lifeways. As a member of the genus *Nymphalis*, the "type" genus of the whole family of brush-foots (Nymphalidae), it is a tortoise-shell—one of four species in Washington along with the California, the Compton, and Milbert's, though it resembles none of those except in shape. It is also closely related to the anglewings or commas in the genus *Polygonia*. As such, it is one of eight species of butterflies in the state that overwinter strictly as an adult butterfly, finding shelter in a nest cavity, an old cabin, or a cave, for example. This is why we find bright, fresh individuals in the fall, and faded, often ragged ones in spring, depending on the winter they've spent. These eight may be seen on any unseasonably warm day of winter. But when they come forth for good, usually March or April, they vigorously seek both foodstuffs and mates. Since little nectar is available in early spring, they seek not only the small stores of it in pussy willows, but also flowing sap from frost-cracked branches or sapsucker holes. Later they visit many flowers, as well as carrion, scat, and mud for the males. The marvelous photograph of mass Mourning Cloaks above shows them visiting dung.

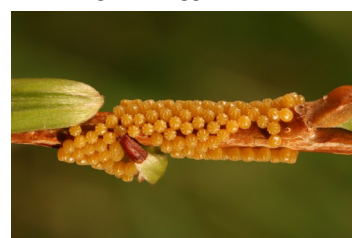
Fed and mated, the females seek broadleaves such as willow, elm, rose, poplar, or hackberry to lay their eggs upon. Unlike most butterflies, but similar to checkerspot, they oviposit *en masse*, ringing a stem with dozens of eggs at a sitting. The resultant larvae feed communally and make quite a spectacle themselves, these spiny black, scarlet-spotted caterpillars all in a flock, as they make a mess of a willow branch. Then, after the fifth molt, they amble off to pupate alone or loosely grouped. As a boy, I found their chrysalides, like thorny corpuscles, hanging from their silken pads upside-down under the eaves of our house—not far from my mother's weeping willow they had riddled.

This beloved butterfly has carried many names. Linnaeus named it in Latin after Antiopa (an Amazon or a lover of Zeus, depending on your myth) in his 1758 *Systemae Naturae*. As for its American common name, one story links it with the "widows' weeds" (black mourning dress) so common after the Civil War; and its brilliant flash of yellow and blue edge was supposed to recall the singular advantage gained (at a time of great competition for young men) from young widows who flashed a bit of bright petticoat before the end of



Three Cloaks open, one closed, and a Hoary Comma (=Zephyr Anglewing), at dung in the Thirtymile fire zone, Methow Valley. Photograph by Elissa A. Cobrin.

Mourning Cloak eggs (D. Nunnallee)



their official grieving period. "White Petticoats" is, in fact, one old name for the butterfly. Some other languages carry a similar sense to the usual common name in English: *Trauermantel* in German, *Sorgmantel* in Swedish, for example. In Great Britain, the insect is an uncommon visitor known as the Camberwell Beauty, for having first been observed in that village (now suburb) outside London. But my favorite vernacular name for the insect is an old one also favored by Vladimir Nabokov: the Grand Surprise. Moses Harris applied this moniker in his 1775 *The English Lepidoptera: or, the Aurelian's Pocket Companion*. I reckon it refers to the shock one is liable to receive when first seeing the dull aspect of the butterfly, from its ashen underside, transform into a splendid being robed in maroon, lined with gold, flecked with indigo, when it spreads its wings.



If there remain mysteries about the Mourning Cloak (as doubtless there do), one concerns its distribution and abundance. Why is it a common, even abundant butterfly in the Cascades and other places east of the crest, but scarce on the west side, where there is plenty of willow? Why, likewise, does it abound in Finland while being protected in Austria? Why is it considered a non-migrant resident, when sometimes clearly undertaking mass movements? And why was the year 2013 "The Year of the Cloaks" all over Washington, even in the West? That year, Thea and I saw more Mourning Cloaks in Gray's River than during the entire preceding thirty years.

Mourning Cloak underside.
(Wikipedia user Sanja)

No doubt many factors pertain. But it seems to me that certain traits of the butterfly and its genus stand out, which may help answer most of these mysteries. First, even though (or perhaps because) it spends the winter as an adult, it clearly seems to prefer cold, dry conditions to cool, moist situations. I suspect the underlying cause here is rot (see my column number 8, February 2012, "Mold Butterflies: The Rot Factor.") It is challenging for many organisms to persist in conditions too warm for hibernation, but too damp to avoid molds. Second, all of the tortoiseshells are notorious for radical population fluctuation and population displacement. The Compton Tortoiseshell (*N. vau-album*) goes missing for years, then pops up in numbers, just like the Large Tortoiseshell (*N. poly-chloros*) in Britain. The California Tortoiseshell (*N. californica*) is of course the most dramatic about it, with its enormous booms and busts. But the other species go up and down in numbers too, and when more numerous, they expand their ranges as far and for as long as they can. They also undergo a degree of altitudinal migration (especially *N. milberti*), and Cloaks are known to move latitudinally as well, perhaps to remove a portion of the population to less hostile winter conditions. Put all this together and you get a tortoiseshell stew, with species being listed one year and booming the next. Then add global warming, and things can get even stranger. Warmer, drier summers and colder winters may add up to Cloaks expanding their range, just as the Yellow-legged Tortoiseshell (*N. xanthomelas*) is doing in Europe. Camberwell Beauties may become common in Camberwell. Grand Surprises may surprise us more often in Seattle and Aberdeen, as they did in 2013. We shall wait and see.



Mourning Cloak caterpillar, aka Spiny Elm caterpillar. (D. Nunnallee)

Although Mourning Cloaks occur around the northern hemisphere and well into Latin America, they have been considered a single species, with few subspecies. Some, citing differences in size, shape, and ground color, are questioning this. If evidence mounts, perhaps there will be taxonomic changes for a butterfly that has been stable in name (if not numbers) for hundreds of years. But by whatever name; and however we encounter a Cloak—pale and ragged in March or rich and resplendent in September—it is always a special pleasure to meet in the out-of-doors, as it clicks past your face and evades your net handily should you try to catch it. Never has one stuck with me more than that first one, disappearing over the great cottonwood; unless it was the one I describe at the end of an essay bearing the butterfly's old name, in a book called *The Thunder Tree*:

"The prone cottonwood trunks lay about like femurs in a bone-yard, hardly rotting in the desiccating air...the scene seemed lifeless. ... And just then something dark blew out of the hollowed rot wad. It was a Grand Surprise! Had it planned on spending the winter there? Mahogany vanes spread in an instant's hesitation, flashing sapphire spots and yellow bands before my eyes, then sailed away. ... I watched it with my binoculars as far as I have ever followed a butterfly in flight, maybe a mile. Then it disappeared. Not below the horizon—I could see the curvature of the earth—but up above it. Into a point."

Species Profile: Edith's Checkerspot *Euphydryas editha* (Boisduval) by Dave Nunnallee



Edith's Checkerspot.

In Washington we have ten species of butterflies which are loosely grouped as checkerspots owing to the cancellate or squarish patterning of intersecting lines on the ventral hindwings. Our checkerspots are placed in three separate genera, *Euphydryas*, *Phyciodes* and *Chlosyne*. The genus *Euphydryas* includes three species in our area and can be distinguished by their straight leading forewing edges. *Phyciodes* and *Chlosyne* include four and three species respectively, and have strongly curved forewings, especially near the body. *Phyciodes* has a distinct light crescent mark on the ventral hindwing while *Chlosyne* lacks this mark.

Euphydryas editha flies on both sides of the Cascades and in the Olympics and Blue Mtns. The subspecies *E. e. taylori* (Taylor's Checkerspot), a resident of remnant prairies west of the Cascades, is endangered due to habitat loss. Beyond Cascadia *E. editha* occurs from southern British Columbia and Alberta to Baja, Montana and Colorado. The flight period here is mid-April to mid-August, and it flies from near sea level to over 8,000 ft elevation. The preferred habitat includes mountains, high ridges, coastal prairies and chaparral, open woodland and alpine areas. Many larval host plants are used in Cascadia including *Castilleja* (paintbrush), *Plantago* (plantain), *Collinsia* (blue-eyed mary), *Penstemon* (beardtongue), *Pedicularis* (lousewort) and *Orthocarpus* (owl clover).



Edith's Checkerspot eggs.

Adults eclose April to July, depending on elevation; receptive females are passive, unresponsive ones flutter their wings or fly away. Oviposition occurs soon after mating; eggs are laid in clusters of 20-350 on the undersides of leaves or on the inflorescence of the host plant, and hatch in 8-9 days. Young larvae are highly gregarious, feeding together and living in communal silk nests on the undersides of leaves. Larvae feed on flowers or on host leaves, skeletonizing or consuming them entirely. Larval growth from hatch to L3 takes 20-30 days whereupon the larvae enter diapause. The following spring the larvae may opportunistically use a different host plant, for example *Collinsia* or *Plantago*, even though they may have fed on *Castilleja* the previous summer. Overwintered larvae disperse and live solitary lives with no nests; in captivity they grow to maturity in less than two weeks and pupate a few days later. The pupa ecloses to an adult in about 9 days. *Euphydryas editha* has five larval instars and is single-brooded throughout its range. The larvae of Edith's Checkerspot can be distinguished from our other *Euphydryas* species by their broad black dorsolateral stripes and their more solidly orange dorsal spines.



Edith's Checkerspot 1st instar larva.

The adults of our three *Euphydryas* checkerspots are very similar in appearance; Anicia and Snowberry Checkerspots are reliably separated only by dissecting the male genitalia, while the Edith's Checkerspot is more easily identified by the presence of a black line ("Editha line") across the ventral hindwing, this line bordered by orange on both sides. Additionally



Edith's Checkerspot pupa.

E. editha is more cleanly and sharply marked dorsally compared to the somewhat more "blurry" markings of *E. colon* and *E. anicia*.

All photos this page by Dave Nunnallee.



Edith's Checkerspot 5th instar larva.

CHASING MONARCHS: THE VANESSID WAY!

David James



Monarchs overwintering on Blue Gum Eucalyptus, Andrew Molera State Park, CA. Top Right butterfly has a white tag—is it one of ours? Unfortunately we were unable to read the tag. (D. James)

Our friend and yours, Bob Pyle, published a book in 1999 called ‘Chasing Monarchs’ which documented his journey from British Columbia to Mexico to California, following the Monarch migration. I read this book soon after my arrival in the PNW from Australia where I had studied Monarchs for my PhD. Bob’s wonderfully entertaining and illuminating book stimulated a desire to study Monarchs in the PNW, particularly as it raised new questions on where our Monarchs actually go for the winter. Many of Bob’s observations suggested that some of our Monarchs may head in a more southerly or south easterly direction rather than the south westerly bearing that would take them to the California coast. Might some Washington Monarchs actually migrate and join their eastern US brethren in the spectacular Mexican overwintering colonies? Bob’s book also provided the only confirmed recovery of a tagged native Washington Monarch in California, yet there was widespread acceptance that all PNW Monarchs go to California. Bob’s book challenged this dogma and I was keen to accept the challenge! It took many years though before I was able to pursue the challenge and as with most of my accomplishments in entomological research, serendipity was the mistress that led me there.

In 2011, I received an email from Dr Tamara Russell, Clinical Director of the Residential Mental Health Unit at Walla Walla Penitentiary. She had seen my Facebook page on restoring native habitats and butterflies in vineyards and wondered if I had any project with butterflies that the inmates could become involved in. I immediately thought of Monarchs and the idea that we should mass rear them to provide enough individuals to support a tagging program. Thus was born the highly successful program of Monarch rearing in which inmates have reared approximately 75% of the 6590 Monarchs we have tagged and released during 2012-2014. Aside from the direct conservation value of adding more than 6500 butterflies to the PNW pool of Monarchs, the inmate-led rearing program has to date, increased the number of long distance recovered tagged PNW Monarchs from one to nine. Monarch rearing is an extremely popular program in the Penitentiary with a long waiting list of ‘well-behaved’ felons. Monarch rearing is being credited for improved prison harmony!

Releasing one to two thousand Monarchs does not automatically mean there will be lots of recoveries. We live in a sparsely populated landscape and the opportunities for Monarch-human encounters are limited to backyards, parks, gardens, along rivers and frequently visited natural areas. Most encounters occur when Monarchs pause for nectaring on flowers. This year we were fortunate in having two re-sightings of tagged Monarchs feeding on flowers along the migration route. One was spotted in a park near the Napa Valley, the other in a backyard near the San Francisco airport. However, most of our recoveries are likely to come from overwintering colonies. There are challenges here too.... spotting the tagged needle in a Monarch haystack!

In the vanessid household (Jasmine, Rhiannon and Annabella all have Vanessa as their middle name), we are developing a new Thanksgiving tradition of Chasing Monarchs! Our migration with butterflies of passage is unfortunately not a romantic, leisurely Pyle-esque journey stopping at lonely camp sites and visiting fascinating people. Rather it is a frenetic-paced, fast-food, Best Western road trip designed to fit into school and work schedules! We raised the sleeping vanessids at 5am, inserted them into the car and left Yakima. First stop Macca’s in Goldendale. (*Editor’s note: Macca’s is Australian for McDonald’s.*) After amazement at how the cost of a McDonalds breakfast has ballooned in 10 years, we shot over the state line into Oregon. All the vanessids are highly experienced travelers and think nothing of spending the whole day in the car entertained by books, video games and cds. Our meal and rest stop breaks were minimal and we hit the hotel beds at



Tagged Monarch at Crab Creek. (C. Heberlein)

Vacaville, CA before midnight. Next morning the girls thought California smelled very nice and they were happy to see leaves still on the trees. By early afternoon we were at the first overwintering site, Lighthouse Field, near the surfing beach in Santa Cruz. This is where just a few days before Mr 3524 was spotted. Local Monarch expert John Dayton managed to get a good photo of this male Monarch which I had reared and released in our Yakima backyard on August 25. We were hoping to see Mr 3524 for ourselves but despite binoculars, a video camera and my camera with a zoom lens, we didn't spot him or any other tagged Monarch. There was an impressive number of Monarchs though, about 6000 mostly in a Cypress tree with a few in adjacent Eucalypts. We then moved on to another Santa Cruz overwintering site at Moran Lake, near a sewage treatment works. California didn't smell quite so good. The Eucalypts grow very well here and we were thrilled to find an immense colony of Monarchs, festooning and dripping from the trees! Not quite Mexico but the largest colony I've seen in California. I estimated about 20-25,000 Monarchs! Many were high up in the trees and the lighting was poor so it was difficult looking for tags and we didn't see any.

Thanksgiving Day! We set off on roads strangely lacking vehicles, heading for Monterey and the famous Pacific Grove colony. We stopped at Monterey and found a small colony (about 800) in eucalypts along a bike path. Very high up again but no tags spotted. Rhiannon was nearly wiped out by a speeding cyclist so we moved on. We were lucky to find a parking spot at the Pacific Grove overwintering site. Clearly we weren't the only people who wanted to spend Thanksgiving with the Monarchs. Impressive clusters and crowds greeted us. There were probably 15,000 Monarchs, half in view and half well hidden in a neighboring property. Immediately we saw tags, lots of tags, about 10-20 in each group of butterflies! But they weren't ours, they were blue, ours are white. I was expecting these because I'd heard that the local museum was involved in an on-site tagging study. More than 2000 been tagged here a week or so ago, hence the high density in clusters! This is what it would look like if all our PNW tagged Monarchs went to the one site! It was good practice for 'tag-spotting'. Jasmine and Rhiannon each spotted hundreds of tags. Jasmine swore she saw a yellow tag. Quite possible, if there are other groups tagging at cluster sites in different locations. We didn't see any white tags though.

After a sunny lunch we headed down Highway 1 to Big Sur. There are a number of colonies along this scenic highway, including one at Andrew Molera State Park. The guy at the gate had seen Monarchs in the Eucalyptus grove earlier, so we set off on a half mile hike to find them. There is only one group of Eucalyptus in the park so it was easy to find, but it took a little searching to find the Monarchs. Tanya spotted them first, about 800, most of them 40-50 ft up in the trees. She started taking video of the clusters as I scanned with binoculars. Then she spotted it. A Monarch with a white tag! One of ours!? Very likely but it could also be one from the South West Monarch Study Group in Arizona. A number of their tagged Monarchs have turned up on the California coast recently. My binocular power was insufficient to read the tag as was the video and my zoom lens camera! I took some photos hoping that Photoshop might come to the rescue but it didn't. Still, we had spotted a tagged Monarch that might be one of ours, a cause for celebration as we dined in a fancy restaurant and had an expensive bottle of wine! The Seahawks were beating the 49ers too.

The next day rain was heading to California so we planned our escape. First we would go back to Lighthouse Field one more time and maybe Natural Bridges, another famous overwintering site. After 30 minutes of scanning the dormant early morning clusters I decided it was time to move on to Natural Bridges. Rounding up the vanessids is never easy and Annabella had spied a friendly dog. Our precocious little west coast lady can never give up an opportunity to pat a doggie and its owners clearly thought it was a great thing for the dog as well. So my hasty retreat was stalled, but I noticed the guy was holding a large spotting scope. Not being a birder I have no experience of these things but I told him of our Monarch quest and how we had not been able to read the tag on the Andrew Molera butterfly. Within seconds the scope was out of its sheath and on the tripod aimed at one cluster of the Lighthouse Field Monarchs. I was truly impressed. I could zoom way up close to a Monarch wing and if there had been a tag there I would have been able to read it. Jasmine Vanessa wanted to take a look as I talked to my new spotting scope friend Barry. 'Dad' she exclaimed in a very loud voice. "There's a tag!" No.... I said disbelievingly. The girl who struck gold for Dave Nunnallee and I by finding a gravid female *Vanessa virginiensis* ensuring its inclusion in our 'Life Histories' book, had struck again! Observant young eyes peering through a scope that had been focused randomly on a Monarch cluster had found a white tag! I could read 'Monarch@wsu.edu' on the tag so it was definitely one of ours. But I could only make out one digit of the serial number, the last one '6'. It took another hour moving the scope around and adjacent Monarchs shifting a little before we were able to read the entire tag. Mr 6416 was yet another individual we had reared during August in our Yakima home. Its mother was a wild female I obtained from Lower Crab Creek in late July. The vanessids helped in the rearing of all the Monarch caterpillars in our house last summer from cleaning cages to releasing the tagged butterflies. Two Monarchs from the same brood, released at the same location within 4 days of each other had found their way to

the same exact location 688 miles away. Just as remarkable (to us anyway) is that we, the rearers and releasers of Mr 6416, were also the finders! Our experience at Lighthouse Field on November 28 2014 was truly vanessid-induced serendipity. Without Annabella's need to pat dogs and Jasmine's sharp eyes, we definitely wouldn't have found Mr 6416.

On the way home Tanya and I discussed the prospect of buying ourselves a spotting scope for Christmas! Another email arrived in my Monarch@wsu.edu account. Another tagged Monarch recovery! This one from 825 miles away in a cluster near Goleta, not far north of Santa Barbara! Wow! This one did not originate in Yakima. It was reared by the inmates at Walla Walla Penitentiary. They were naturally thrilled to hear about this. To date this is the longest confirmed flight taken by a native Washington Monarch. How cool is that?

Part Two of Chasing Monarchs: The Vanessid Way will hopefully take place soon and we will take a look at the clusters closer to Santa Barbara this time. Our Christmas present and of course all the vanessids will be coming along.....

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