



Volume 13, No. 2

Fall 2009

LINCOLN BROWER: MONARCHS' FRIEND—AND MINE

— Elizabeth Hunter

Had it not been for a male monarch butterfly I tagged at Cape May Point, New Jersey, on Columbus Day, 1997—a monarch that was found 10 days later, on an island more than 1,000 miles south of New Jersey, and 300 miles off the Florida coast—my friendship with Lincoln Brower would never have begun. And had Lincoln's nine-year-old grandson Alex not been visiting on the July 1999 afternoon when I interviewed Lincoln for an article about butterfly gardening, that friendship would never have taken hold.

But those things did happen, and they're part of the reason that Lincoln will be the Friday night speaker at the Fall Roan Mountain Naturalist Rally this year. Let me explain.



Monarchs cluster in oyamel fir trees in the central highlands of Mexico from late October to March.

Monarch tagging began in 1938 in an effort to discover where the butterflies, observed flying south every fall, spent the winter. The mystery wasn't cleared up until 1976 when an associate of Dr. Fred Urquhart, the scientist who launched the tagging program, encountered a blizzard of monarchs in the mountains west of Mexico City. By unimaginable good fortune, Urquhart found a tagged butterfly when he visited one of their overwintering sites shortly thereafter. (Tagging monarchs has continued, however, because there are other questions to answer.)

In the early 1990s, Dick Walton (of "Birding by Ear" fame), the Cape May Bird Observatory and Lincoln began collecting baseline data on the monarch migration down the Atlantic flyway. As their 1997 research intern, I spent the months of September and October in Cape May affixing Lincoln's tags to the forewings of a total of 4,236 monarchs. Recovered tags went to Lincoln, a scientist I venerated as the foremost authority on monarch butterflies in the world. When Lincoln received the envelope with the wings of the monarch found in a garden on the island of San Salvador, it caused a flurry of excitement. That monarch was only the second to be recovered from

an offshore location in nearly 60 years. (The first was found in Cuba in 1968.)

You could say I had butterflies (not monarchs!) in my stomach when Dick emailed to say that Lincoln would be calling to pick my brain about that monarch and the day I tagged him. I pulled my data sheets and was surprised to discover that the preeminent scientist was not nearly so daunting to talk to as I had imagined. We had a nice chat, and from that time on remained in desultory contact—one reason I decided to ask him for an interview for my butterfly gardening article. The day of the interview I followed his directions, fording a small stream and passing a "Caution: Butterflies Crossing" sign tacked to a tree before pulling up in front of a two-story house in a clearing halfway up a mountainside. As two large German Shepherds circled my car, barking, I saw a woman and two kids on the porch. The woman called and quieted the dogs, and beckoned me up to the porch, where I found the children, each with a jar of soapy water in which floated the corpses of myriad Japanese beetles, adding columns of numbers. Turned out they'd been given the task of eliminating 1,000 Japanese beetles from the butterfly bushes flowering on the slope above the house. The woman stuck out a hand and introduced herself as Linda. Like her husband, Linda Fink is an entomologist with Sweet Briar College affiliations (she's a teaching professor; he's a research one). Lincoln was off in the house somewhere; she was overseeing the Japanese beetle project, then in its second or third day. I conducted my interview; we all went to Lincoln's and Linda's labs and to Lincoln's research site on the Sweet Briar campus. Then we went out to supper. As we said goodbye, Lincoln invited me to "come back some time when the

grandkids aren't visiting."

Alex was listening. "I want to be here when she comes back," he interjected. A month or so later, he emailed Lincoln to ask him "whatever happened to that writer." At Lincoln's suggestion, I emailed Alex. That was the beginning of what became a 10-year correspondence. (For a few years, Alex's emails were barely a line or two long. Gradually they got longer.) At Alex's insistence, every time he and Tori came down from their New Hampshire home for a visit, I was invited to join them at Lincoln and Linda's. You can bet I accepted the invitation, and not *just* to visit Alex. The Brower/Fink household is a great place to visit. The food's first rate and conversation (although sometimes over my head) is fascinating. So's the place itself, with its resident chameleons, German shepherds (Ruby and Meriwether now, Hana and Homero when I first visited), and ancient, complaining, calico cat Hoopoe.

The dinnerware has pictures of insects on it. The real thing is on the kitchen island, chomping away on its larval food plant, spinning cocoons, making chrysalises. This July the island's population included 60 monarch caterpillars—each in separate containers, being reared on four different kinds of milkweed for a British researcher—and the odd luna moth larva (or three). Sometimes it's walkingsticks (a research interest of Linda's), sometimes hickory horned devils.

In Lincoln's upstairs office photographs pinned to a flannel board detail the damage being done to the Mexican overwintering sites in Mexico. Among them is one I shot when I accompanied Lincoln to Mexico in March 2005. The picture shows heavily laden horses we had to get out of the way of, coming down Cerro Pelon after we'd scattered the ashes of a friend amid an oyamel forest. The horses were dragging illegally cut logs from within the monarch sanctuary. The noise of chainsaws intermittently drowned the sluicing sound of monarchs taking flight around us as our friend's son spoke of his father. Lincoln has returned to that beautiful place, where butterflies flashed from the heavily laden boughs like fire, and tells me that the monarch-laden trees, like our friend, are only memories now.

In 2007, Lincoln was feted on a European tour that included lectures to the Royal Entomological Society in London and the Fifth International Conference on the Biology of Butterflies near Rome. In an article they wrote about the tour, Linda and a colleague noted that Lincoln has been studying monarchs "for more than 50 years, and for 30 years he has made preservation of the unique migration of this butterfly a personal mission." Although he officially retired in 1997 when he moved to Virginia after academic careers at Amherst College and the University of Florida, he continues his research, and is unflagging in his efforts to fight for protection of monarchs on their summer breeding grounds in the United States and Canada and on their overwintering sites in Mexico.



Cerro Pelon logs dragged out by horses

Virtually every aspect of monarch behavior and natural history is of interest to Lincoln. Take, for example, the "hot off the press" copies of two studies he gave me on my last visit: one entitled the "Comparative Success of Monarch Butterfly Migration to Overwintering Sites in Mexico from Inland and Coastal Sites in Virginia"; the other, "Monarch Butterfly



Lincoln Brower and Elizabeth Hunter (right), pictured with Mexican poet, Homero Aridjis and his wife Betty, at a monarch butterfly sanctuary

Clusters Provide Microclimatic Advantages During the Overwintering Season in Mexico." Both appeared last year in the *Journal of the Lepidopterists' Society*. Lincoln is the lead author of the cluster/microclimate article, the second author of the migration study. The latter looks at a big picture issue. Do monarchs using inland routes through Virginia have a better chance of making it to Mexico than those using coastal routes? (Their data says yes.) The former article details findings from temperature and humidity readings taken inside and outside the dense clusters that monarchs form on fir trees at the overwintering sites. (Their findings show that butterflies inside the cluster enjoy slightly but measurably warmer nighttime—and cooler daytime—temperatures, and higher relative humidity than those on the fringes of clusters do, a microclimate advantage.)

These are just a few of the more recent questions that Lincoln's research has sought to answer. He's conducted published research on the parasites that attack monarchs—

and the cardiac glycosides that protect them from predators; on the ways that changes in forest quality impact overwintering monarchs—and on what fuels their great migration.

Although his knowledge of monarchs is encyclopedic, Lincoln has two qualities that make him more than just a great scientist. The first is his willingness to answer any question asked him—clearly, patiently and completely. He explains complexities in such a way that you understand and appreciate them. One of my great regrets is that I never encountered him in a college classroom. One of my great joys, whenever I get the chance, is sharing nature’s magnificent outdoor classroom with him.

The other quality I admire is his humility. I first grasped it late one September afternoon as he and his dogs and I wandered around his yard and garden. The sky was cloudless; the sun, heading for the hills, was casting its slanting yellow light on asters heavy with purple and blue bloom, on goldenrod’s bright spires. A few monarchs were nectaring on the flowers; others were spiraling down into the clearing to take on fuel before flying up and into the trees to roost for the night. Watching the man who, if he doesn’t know *more* about monarchs than any other living being, knows *as much* as anyone, I understood that a half century of studying monarchs has in no way diminished his wonder and pleasure in seeing them.

He watched the butterflies descending like a child being treated to his very first sight of a monarch migration. “You know,” he said, “the more I watch monarchs, the more I realize how little I know about them. I don’t know—at all—what they’re doing, or how they’re doing it.”

Elizabeth Hunter is an award-winning author and a contributing editor to *Blue Ridge Country* magazine. She provided the text for *Blue Ridge Parkway, America's Favorite Journey* to accompany the photography of J. Scott Graham. Elizabeth, who lives in the Bandana Community of Mitchell County, NC, tagged her first monarchs for Urquhart when she was a little girl.



2009 Roan Mtn. Butterfly Count

The 17th Annual Butterfly Count was held on July 18th, 2009. Nine observers (G. Derouen, D. Draper, D. Holt, A. Mattes, L. McDaniel, J. McGuinness, B. Potter, J. Potter, K. Stroud) spent a total of 7 hours and traveled 2 miles on foot on a cold and cloudy, but nonetheless nice, day completing the butterfly census.

Next year the Roan Mtn. count will be on July 17, 2010.

Roan Mountain, TN. Yr. 17, 36°06'N, 82°07'W, center at Carvers Gap, Carter Co., TN, and Mitchell Co., NC. 18 July 2009; 1000-1800 hrs; sun AM 10%, PM 10%; 53-68°F; wind 0-5 mi/hr. 9 observers in 1 party.

Pipevine Swallowtail 20	Meadow Fritillary 4	Clouded Skipper 1
Black Swallowtail 1	Pearl Crescent 17	Little Glasswing 1
Cabbage White 7	Question Mark 1	Sachem 1
Clouded Sulphur 1	Common Buckeye 3	Unidentified: <i>Speyeria</i> sp. 4.
Orange Sulphur 6	Viceroy 1	Total 21 species,
Eastern Tailed-Blue 33	Common Wood-Nymph 2	118 individuals.
Variegated Fritillary 1	Monarch 2	
Gr. Spangled Fritillary 1	Silver-spotted Skipper 9	[Results submitted by Don Holt,
Aphrodite Fritillary 1	Common Sootywing 1	Johnson City, TN]



PORCH LIGHT INSECTS

— Larry McDaniel

I grew up in Maryland in the 50s and 60s, and like many kids of my generation I spent a lot of time outdoors. This helped to nurture a lifelong interest in nature. In the early 70s I joined a friend on a visit to Hawk Mountain in Pennsylvania, and I became hooked on birding. This was a hobby and an obsession that became the focus of most of my vacations during the 90s. Jerry Nagel was largely responsible for drawing my interest towards studying butterflies about 10 years ago. It was about that time that I started becoming a regular at the Roan Mountain Naturalists' Rallies. My interests were evolving from primarily birding to all-around nature study. About three years ago I took a job as Assistant Park Naturalist at Steele Creek Park in Bristol, TN. It was at the Nature Center at the park where I started becoming fascinated with the variety of moths I was seeing on the walls near lights. I try to identify as many things as I can at the park and was finding myself spending a lot of time in the insect field

guides. Don Holt was the one responsible for getting me into using the internet as a reference. One evening in June of 2008 I was on the back porch at home in Johnson City, and I noticed a moth on the wall near the porch light. I can't remember which species it was, but I do remember going and getting my camera. That was the beginning of my latest obsession.

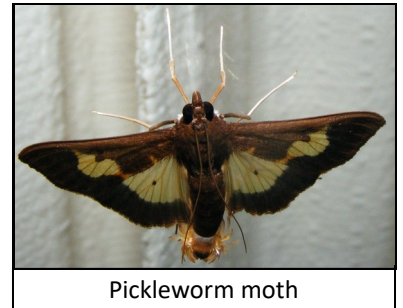
I started out with taking pictures of whatever insects I found by the light with my 2 megapixel digital camera. I since have upgraded to a 7 megapixel point-and-shoot that I purchased at Sam's for about \$180. Through much trial and error I developed some techniques that have worked pretty well. Now I usually set the camera on macro with the fastest shutter speed, highest aperture setting and forced flash. I take lots of shots and use the delete button liberally. The arrangement on the porch has changed some since I started. I now have a white sheet with small discrete squares hanging on the wall. The squares are very helpful in determining the size of some of the insects. This is especially important because I sometimes don't work on identification until months after the picture was taken. Hung over the sheet is an 18 inch tube black light. Black lights attract more insects than regular lights do. There is a shop light with a white florescent bulb shining on the sheet. This setup attracts more insects than I have time to handle.

Once I've taken what pictures I want, I have to download them onto my computer. From there I select which ones to keep and sort them into assigned folders. There they stay until it's time for identification. Many go unidentified. I often start out with looking in a book to get on the right track. My favorite books for this are the *Kaufman Field Guide to Insects of North America*, *A Field Guide to the Moths of Eastern North America* by Charles Covell and *Insects: Their Natural History and Diversity* by Stephen Marshall. Another book I enjoyed reading is *Discovering Moths: Nighttime Jewels in Your Own Backyard* by John Himmelman.

I almost always go to an internet reference to finish my identification effort. My favorite websites for this are *Bug Guide* and *Moth Photographers Group*. I put the picture of the insect I'm trying to identify on one side of the screen and I put Bug Guide or Moth Photographers Group on the other side. I then scroll through thumbnails until I find a match or near-match. Then I read the text that Bug Guide includes. Bug Guide often has a "see also" section that is very helpful. It can be very exciting to find a positive I.D. on a mystery critter.

It has been amazing to me, the diversity of insects and other creatures I have found on my back porch. There have been caddisflies, mantids, katydids, crickets, cicadas, treehoppers, leafhoppers, planthoppers, plant bugs, seed bugs, leaf-footed bugs, stink bugs, ground beetles, flower scarabs, may beetles, chafers, dung beetles, stag beetles, lady beetles, leaf beetles, fungus beetles, fireflies, soldier beetles, long-horned beetles, darkling beetles, click beetles, carrion beetles, fire-colored beetles, bostrichid beetles, green lacewings, antlions, crane flies, midges, mosquitoes, bee flies, long-legged flies, flower flies, blow flies, house flies, tachnid flies, picture-winged flies, ichneumon wasps, paper wasps, ants, spiders, harvestmen, centipedes, millipedes, earwigs, silverfish, roaches and more.

Then there are the moths. These include giant silkmoths, smaller silkmoths, sphinx moths, owlet moths, underwing moths, lesser underwings, geometer moths, tiger moths, wasp mimics, tussock moths, prominents, tent caterpillar moths, ermine moths, plume moths, tortricid moths, pyralid moths, crambid moths and more.



Pickleworm moth

I've been at it about a year at the time of this writing, and it has been a blast. I would encourage others to give it a try. You could do it at whatever level you please. It's something you can do at home. Think of the gas you save. One thing that might bother some people more than others is that the insects are prone to fly all around you. This is especially true when you're trying to get in close for a great shot. It's hard to be patient and still when you're not sure if that was a firefly or an earwig that just landed on your forehead, but you don't want to miss your opportunity at getting a picture of that first ever moth that just landed in front of you. Other than that, it's relatively easy and harmless. I would definitely say try this at home.

Larry McDaniel works as a park naturalist at Steele Creek Park in Bristol, TN. Last year he helped organize the Mountain Empire Butterfly Club. In June of 2008, McDaniel started his Porch Light Insects project. McDaniel currently lives in Johnson City, Tennessee, with his lovely wife Janet and stepdaughter Heather.



GET UPDATES ON THE BAA-TANY GOAT PROJECT

<http://baatanygoatproject.blogspot.com/>

The purpose of the volunteer-based Baa-tany Goat Project is to restore the Grassy Bald corridors in the Roan Highlands, using goats as an experimental management tool.

The 2nd annual "Herding of the Goats Up Across the Balds" successfully took place the morning of June 24, 2009. Todd Eastin, with the help of at least 40 friends, led 44 Angora goats, 1 milk goat named Blue, and their 2 Great Pyrenees guard dogs across Roan's Grassy Balds from Carvers Gap to the summit of Jane Bald where they will spend the summer eating Canada Blackberry and other woody plants that are invading these rare high elevation grasslands.



Hi, Friends! We are looking for a new Treasurer for the Friends of Roan Mountain. Anne officially resigned as of December 31, 2009, but is willing to keep the job for an additional year in order to train another volunteer/volunteers. Anne has held the job since January 2000 when the Friends of Roan Mountain was chartered.

Anne suggests that we need 3-4 volunteers to serve as "assistant treasurer" for each Rally. This person would work with the Rally director, doing all the jobs necessary for registering attendees for the event and meals, both at the Conference Center and in the field where the hikes begin. We may want to also have a membership chairperson, as well, who will be in charge of the membership list and the label list for the brochures. While we are adjusting to this new system, Anne will continue to update the membership list, the label list, serve as facilitator for the goat project, pay dues to partnership groups, and file government reports. She will be the keeper of the checkbook.

At a Rally, you've seen Anne in the Field where we line up for hikes and at the Conference Center giving out tickets for meals. In addition to the treasury duties, she has led wildflower hikes and has been able to occasionally attend a hike. She has worked tirelessly for the benefit of the Friends. It's been her ambition to know each of the members who attend the rallies; many have been amazed that Anne remembers their names from rally to rally! Many members are recipients of her newsy letters when either joining or renewing membership with the Friends.



Preferably, the new Treasurer should live in the Tri-Cities area in order to attend quarterly Board meetings and be in easy contact with the Rally directors.

Anyone interested should contact Anne at anne.whittemore@yahoo.com or 208 Mark Dr, Gray, TN 37615.

P.S. When you see Anne, you might want to express a humongous "Thank you" for her dedication to Friends of Roan Mountain. She goes above and beyond!!



Roan Mountain Naturalists' Rallies

Spring Rally	First Friday - Sunday in May
Youth Rally	Summer Saturday TBA - check website for date
Fall Rally	Friday - Sunday in September after Labor Day
Winter Rally	Saturday in February nearest Valentine's Day



The deadline to reserve meals (dinners and lunch) at the Fall Rally is Wednesday, Sept. 9th!

Please make checks payable to Friends of Roan Mountain and return to:

Lisa Tyler, PO Box 591, Johnson City, TN 37605

You can find a reservation form online at

<http://www.friendsofroanmtn.org/>

Click on the link to the 47th Annual Roan Mountain Fall Rally

REMEMBER THE RAFFLE!

We will be doing our rally raffle again on Friday and Saturday evenings after dinner. We gratefully accept donations of nature-related items (hiking/camping gear, artwork, plants, notecards, books, mugs, etc.). We've also raffled off food items such as local honey and homemade apple butter. All proceeds go to our grant fund which supports research and conservation efforts on Roan Mountain.



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Printed on recycled paper

