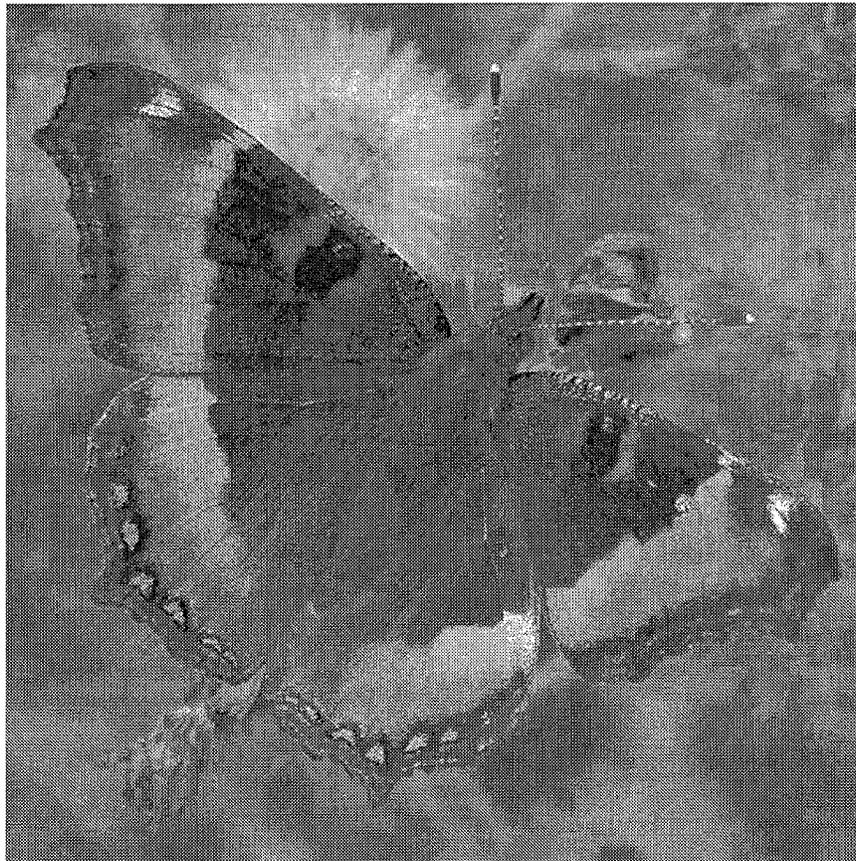


Massachusetts Butterflies



Fall 2003, No. 21

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**Cover photo: Milbert's Tortoiseshell, taken by Erik Nielsen,
Pittsburg, NH 07-08-2002**

Raising Baltimores in W. Bridgewater

by Don Adams

Back when I was a 'buggy' kid growing up in the early 50's in South Weymouth, the three 'most precious' butterflies the neighborhood kids and I searched for were the Question Mark, the Regal Fritillary, and the Baltimore Checkerspot. It wasn't long before I got to see my first Question Mark, and even a Regal Fritillary, but the Baltimore Checkerspot would elude me for decades.

It wasn't until the early 80's, a year after Cheryl and I bought our 3-acre 'farm' in West Bridgewater, that I saw my first Baltimore, and right in our own back yard! I can still recall jumping around wildly like a little kid who had just gotten his most wished-for Christmas present. For the next several years, we would see an occasional butterfly; but never more than one or two, and some years, none at all.

We were becoming concerned that our gardening and other activities might not be working in the best interest of Baltimores, especially after learning that the likely larval foodplant was *Plantago lanceolata*. Our yard and lawns were full of Plantain, and NO *Chelone* in sight anywhere! I really wanted to find a way to establish a safe habitat for the butterfly in our yard along side of our other activities.

Things changed in 1995. While on a trip just across town setting out a couple of *Cecropia* moths, I discovered a large number of Baltimore caterpillars which had overrun their supply of Plantain there, and by removing just a dozen or so and combining with numbers in our own back yard, finally achieved enough diversity to get three pairings that summer. The eggs and caterpillars which

resulted from these would be amplified in the next five years to the present population of 1-2 thousand each year, our gardening and other activities notwithstanding.

The primary means of achieving this relies on two major factors; maintaining a safe food supply and reducing predation . The 'safe food supply' aspect also needs to include provision for overwintering partially grown caterpillars, so it became important to understand intimately the details of this. Although birds and other predators take their toll, predation, as with other butterflies and moths I raise here, is largely due to parasitic wasps, flies and other insects. Another goal is to raise the butterflies under as natural a set of circumstances as possible.

Maintaining Food Supply

An important and more or less distinguishing factor to understand about the foodplants of Baltimores, and other *Euphydryas*, is that ovipositing females of particular colonies, and their resulting offspring, initially will be extremely fussy about selection of foodplant, whereas post-hibernation caterpillars will adopt a much wider range of choices if need be. In some colonies, perhaps only a single plant species will do for gravid female butterflies, and eggs are deposited in clusters of up to 200, usually on the leaf underside. Gregarious caterpillars will utilize this choice entirely, grow through the third instar, then cease feeding altogether and enter a phase of hibernation en masse for the remainder of the season. It is interesting that even southern extended populations maintain this behavior no matter that there would be plenty of time for the caterpillars to mature fully, become adult butterflies and initiate a second brood.

Upon recovery from hibernation the next spring, the caterpillar clusters are again mostly dependant at first on fresh new shoots of this same primary foodplant to resume growth. However they

are now willing to adopt a considerably more varied diet especially if the primary foodplant becomes depleted, as is often the case since they will resume feeding when new growth shoots of foodplant are quite small, and a large caterpillar cluster can quickly consume all of the available new growth.

Although it is now known that Baltimores utilize a much wider range of habitats and foodplants than the traditionally described 'Turtlehead in wet meadows', the adoption of *Plantago lanceolata* by this butterfly here in the northeast is something of a mystery. Plantain, regarded in much literature on the subject as a waste-lot weed, is an alien here, and not closely related to other primary foodplants of this butterfly, and the 'realm' of Plantain, if it can be said there is one, bears no similarity to these others whatsoever. Furthermore, Plantain does not seem to cause the same poisonous reaction to avian predators as other foodplants in the Snapdragon family, so clearly there can be no survival benefit here.

I have attempted, on several occasions and with marginal success, to introduce *Chelone glabra* on our property, but it does not seem to thrive or spread here. Nonetheless, these efforts have shown me that butterflies from my colony readily find and oviposit on Turtlehead, any predisposition for Plantain notwithstanding.

However, gravid females in my colony will NOT deposit eggs on other *Chelone* species widely available at local nurseries, nor on *P. major*, although post hibernation caterpillars will gladly accept all of the above (at least if they must). Other foodplants my post hibernation caterpillars have used include *Viburnum dentatum* and *Valeriana officinalis*. An additional treat offered me just this season is the discovery of naturally deposited egg masses on our *Buddleja davidii*; a total of eight on three separate bushes. As of this writing none of these egg masses has hatched, so I'm not yet prepared to argue that Butterfly Bush is an acceptable primary foodplant, however this many egg masses leads me to believe that

this is more than just a fluke.

From a breeders point of view though, Plantain is an ideal choice. It's not exactly hard to find, and its low growing habit makes it possible to cage with simple and inexpensive materials. The only difficulty is the fact that the best Plantain here grows in our lawns, and clearly, mowing and feeding caterpillars don't go together very well. My method of overcoming this problem has been to leave several 'Plantain islands' in our back lawn unmowed and consisting of the best Plantain specimens. Usually these attract the gravid females which prefer the hearty growth here for their egg clusters, and tend to avoid the closely cropped Plantain in the mowed sections. This tactic however did not work as well this season as in the past, and I was able to locate many egg masses in the areas being mowed. I can only theorize that was due to our unusually ample rainfall this season which enabled the mowed Plantain to recover very quickly and become desirable to egg-laying butterflies. So, much time was spent this season recovering egg masses before each mowing!

Protection from Predation

This effort is really the one that makes the greatest difference in our success here in maintaining a more or less constant (and elevated) population of Baltimores over the years. This is not the typical result in nature where populations make great swings between boom and bust cycles. 'Boom' can mean hundreds or even thousands of butterflies present in even a relatively small location, while 'bust' can mean having great difficulty finding one or two specimens in an entire season.

Baltimores are subject to the same range of predators you'd be familiar with from other butterflies or moths. Egg masses themselves can suffer very high mortality from ants and others, and this present season has been particularly harsh in this regard.

A newly hatched mass of tiny caterpillars must get an effective web spun up very quickly or suffer heavy losses from ants, spiders, Vespid hornets, wasps (Ichneumonids and others), and flies (Tachinids). Even after a good web is up, Stink bugs will patrol its perimeter, and pierce any caterpillar which comes too close to its surface. Ichneumonids will also 'sting' larvae they can reach through the nest as well.

A helping factor in this can come from the fact that female Baltimores frequently deposit their egg mass directly beside one already laid down previously by another female, and I have found as many as three egg masses all lined up on the same leaf. This is easy to discern since fertile eggs will change color from bright yellow to brown to deep crimson just prior to hatching, and these color contrasts provide a reliable mark for this phenomenon. The more caterpillars present, the faster a good protective web can be fashioned, and large caterpillar clusters are at a considerable advantage over smaller ones. Even if one egg mass hatches somewhat later, this means more silk for added protection. Last season, I did a simple experiment by gluing an egg mass adjacent to where one had just hatched. Within just a couple of hours, the hatched caterpillars had changed direction from feeding and silked up the new egg mass!

Despite the caterpillars' efforts, without further protection the losses from parasites each year would be very high. However, by using simple screen cages set over the Plantain with feeding nests, parasitism is reduced, but by no means eliminated, allowing a good number of butterflies to survive. My cages are 1cuft, 2 cuft, and 16 cuft in size for which there is no particular reason other than convenience of materials. All cages are just 1 ft high, and this is a good size for enclosing Plantain. I don't take the time and considerable effort that would be required to seal the cages on the ground, so they 'leak' caterpillars, and even though I recage these as soon as I discover them, these are the caterpillars most likely

to be parasitized by wasps. This season, after I shipped over four dozen parasitized chrysalides to Jeff Boettner at UMASS, he was able to ID the primary culprit here as *Benjaminia euphydryadis*, an Ichneumonid believed to be specific to Baltimores and possibly the Harris Checkerspot as well. Parasitized chrysalides can be reliably separated from 'good' ones by a subtle color change from the normal blue-grey to coffee-brown.

Although I always leave a certain number of egg masses marked with a location stake but otherwise without any protection, an additional strategy to insure some level of success is to remove a certain number of egg masses with leaf as soon as these can be located. These are then placed inside a closed plastic food container, and kept in a safe place that has natural temperatures and photoperiod. By leaving these in the container until just before hatching, a good measure of predation can be eliminated. Care must be taken to let in enough air so the leaves with eggs wilt down without getting moldy. When I believe the eggs are close to hatching, I place fresh Plantain leaves inside each day so that if eggs hatch the tiny caterpillars can nest up on fairly fresh food, which can then be transferred to living food outside under a cage. Cages can be moved about as feeding clusters migrate or larger cages employed as the need for additional food arises.

Unfortunately, these initial stages of Baltimores' existence require faith and imagination that beautiful creatures will result! The sticky frass-laden feeding webs will sprawl out over the foodplant as the maggot-like little caterpillars grow. This is not the prettiest of sights, and the effect is magnified further if two or more feeding clusters meet and combine.

The caterpillars will feed by expanding their silk nest to cover new food as required for three to four weeks, and at third or fourth instar cease feeding entirely. At the fourth instar, the caterpillars finally assume their more attractive black and orange coloration.

They will now build a temporary hibernation nest of more dense silk and plant debris, and remain in this until late fall at which point they abandon this nest and hide deep in ground litter until next spring. I usually leave my cages in place over these sites even throughout the winter for added protection, possibly from rodents and such, and to accurately mark the locations where the caterpillars will recover in spring .

The Continuing Life Cycle

There is no need to provide any other protection than the cages, and it is best if these sites receive all natural weather exposure including snow cover. During the early spring of 2001, a combination of melting snow and heavy rains left my best overwintering clusters of caterpillars covered by a 16 cu.ft. cage totally submerged under two inches of water! I was thrown into a panic believing I was about to lose over a thousand caterpillars, and it wasn't until many weeks later, when a warm spring day revealed hundreds of basking caterpillars, that I discovered to my amazement that they were perfectly able to withstand this. A published article from the UK I possess on *Euphydryas aurinia* is the only one I know of that cites this ability

Observation over the years of my colony here seems to indicate that there is considerable variation, even within a small area, in the time caterpillars come out of hibernation. Individual locations on our property seem to provide two 'microclimate' variables that influence this. First, and logically, the amount of sun exposure in Spring influenced primarily by the extent of new foliage emerging on nearby trees, and secondly the amount of leaf litter or other overwintering debris covering the foodplant shoots which now retards their new development. Areas of Plantain in our yard afforded good sun exposure can display clusters of basking caterpillars as much as three weeks sooner than more shady sites. In early Spring, the hibernating clusters are still so deep in ground

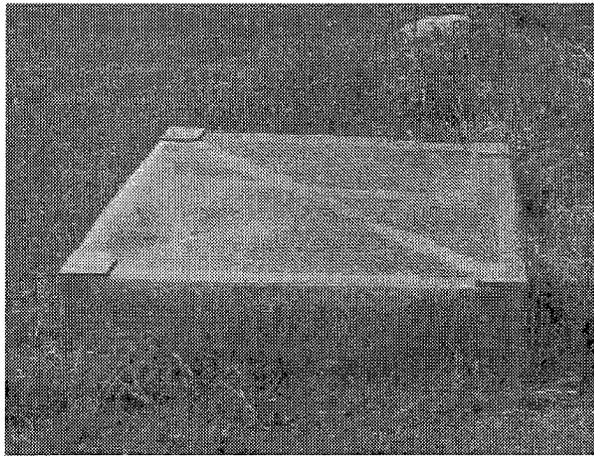
litter, it is safe to trim down last seasons high dead grass and wildflower stalks with hedge clippers. This will increase the exposure of new shoots of Plantain and yield an even earlier recovery.

I am now strongly of the opinion that these caterpillars are able to use olfactory cues given off by new growth shoots of the primary foodplant to synchronize their recovery from hibernation with the onset of warm enough conditions. This would seem to make sense since there would be no point in ending hibernation just because it's warm enough, if there is no food available. I also believe this ability allows the tiny caterpillars to perform incredible feats of navigation from a just consumed rosette of foodplant to the next closest one which may be several feet away. In the 2000 season, I observed a cluster of caterpillars consume its first rosette of Plantain, then strike off en-masse in precisely the right direction to the next closest plant two feet away!

When still small, these caterpillars will remain in gregarious clusters as food permits, but no longer spin a protective web. As with caterpillars of some other butterflies though, they like to leave the foodplant when not actually feeding or when entering a molt phase, and hide in nearby available plant litter. They're especially apt to make use of dead leaves held in place with a few strands of silk under which several dozen may hide, and their coloration matches that of dead leaves perfectly. As the caterpillars increase in size or food availability dictates, they may become more solitary and wander considerable distances.

Usually by July, the caterpillars are ready to pupate and although they will travel far for a site to do this, the resulting chrysalids are frequently not as well concealed as with other butterflies, and I am able to locate many in our yard most seasons. Eclosure follows in about two weeks and butterfly lifespan, I believe, can be a week or longer. Males seem to stake out territories and will dart up

suddenly from a perch site to investigate anything that comes near. They are so fearless on the wing they can frequently be captured by hand, and their 'not in a hurry to go anywhere' behavior is what I think endears this butterfly most to me.



16 Cubic ft Cage built by Don Adams



Baltimore larval nest on Chelone

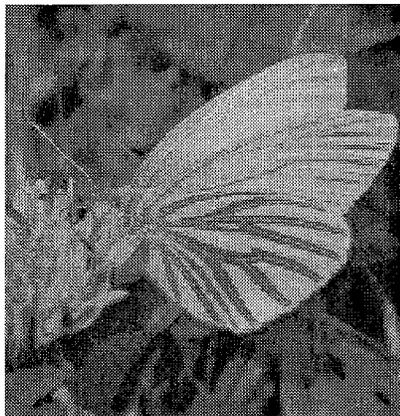
**photos by
Don Adams**

2003 Fourth of July Butterfly Counts

compiled by Tom Dodd

**The following is a listing of the "Count", "Abbreviation",
and "Compiler" for each of the 4th of July Butterfly
Counts:**

**Central Berkshire County-CBerk-T Tying
Southern Berkshire County-SBerk-R Laubach
Central Franklin County-CFran-M Fairbrother
Northampton-North-d case
Northern Worcester County-NWorc-C Kamp
Concord-Conc-R Walton
North Essex County-NEssx-B Speare
Blackstone Valley Corridor-BVal-T Dodd
Middleboro-Middl-K Holmes
Bristol County-Brist-M Mello
Martha's Vineyard-MVine-M Pelikan**



**Mustard White
Lenox, MA
5/04/03
photo by Erik Neilsen**

Common Name	CBerk	SBerk	CFran	North
Black Swallowtail	2	3	3	63
Eastern Tiger Swallowtail	3	28	24	23
Spicebush Swallowtail		1	7	23
Mustard White	102			
Cabbage White	65	191	135	198
Clouded Sulphur	158	72	89	242
Orange Sulphur	3	10	1	18
Harvester				
American Copper	9		5	141
Bog Copper			156	
Coral Hairstreak	11		12	1
Acadian Hairstreak	35	1		
Edwards' Hairstreak				
Banded Hairstreak	1	4	9	7
Hickory Hairstreak		1		2
Striped Hairstreak	1			2
Southern Hairstreak		1		
Juniper Hairstreak				2
Gray Hairstreak				
Eastern Tailed-Blue	3		10	32
'Summer' Spring Azure	23	13	9	17
Great Spangled Fritillary	61	47	30	51
Aphrodite Fritillary	16	2	2	3
Atlantis Fritillary	12	2		
Silver-bordered Fritillary		1		10
Meadow Fritillary	2	18		1
Harris' Checkerspot				
Pearl Crescent		2	3	27
Baltimore Checkerspot	47	23	106	17
Question Mark	3	6	6	7
Eastern Comma	7	8	3	12
Gray Comma		1		
Compton Tortoiseshell	1	1		1
Mourning Cloak	10	1	3	2
Milbert's Tortoiseshell	1	1	1	4
Painted Lady	3	1	1	
Red Admiral	17	25	11	43
Common Buckeye				
Red-spotted Admiral			20	
American Lady	9	13	3	10

NWorc	Conc	NEssx	BVal	Middl	Brist	MVine
	1	5	4	3		
55	12	52	47	4	3	2
3	2	9	34	1	10	
1052	107	167	46	314	3	80
47	83	212	144	37	20	68
11	2	1	8	2		1
	1					
131	32	14	67	2	5	78
13	86	6				45
	5	2	2			
			4			
			2			16
		10	5		1	8
		1				
2		10				
1	1	1	1			4
12	13	15	26	3	20	4
2	5	34	17			1
5	40	34	83	6	10	
1			9			
4	2					
13						
34	1			18	2	1
2	16	30	73	1	6	
1			1			
2	1	5	6	1	2	
	1	1	1	1		
1						
6	2	13	14	1	3	29
2	2			2		3
9	4	14	21		4	7
						2

Common Name	CBerk	SBerk	CFran	North
- White Admiral	1			1
- Red-spotted Purple	13	6		6
Viceroy	3	8	6	12
Tawny Emperor		1		
Northern Pearly-Eye	2	11	2	
Eyed Brown	9	11	4	
Appalachian Brown		7	3	10
Little Wood-Satyr		7	21	20
Common Ringlet	3	5	4	
Common Wood-Nymph	282	55		47
Monarch	6	6	2	24
Silver-spotted Skipper	16	18	24	114
Hoary Edge			3	
Southern Cloudywing			12	1
Northern Cloudywing	1			
Wild Indigo Duskywing				
Common Sootywing				77
Least Skipper	6	84	16	2
European Skipper	61	163	520	16
Indian Skipper				
Peck's Skipper	14	13	3	1
Tawny-edged Skipper	4	8	4	6
Crossline Skipper	4			1
Long Dash	2		8	
Northern Broken-Dash	5		3	27
Little Glassywing	2	11	6	11
Delaware Skipper	4	4	2	17
Mulberry Wing	2	2		11
Hobomok Skipper	3	1	3	5
Broad-winged Skipper				
Dion Skipper	2	3		
Black Dash				8
Dun Skipper	46	13		31
Total Species	49	48	43	49
Total Individuals	1096	914	1295	1407
# Participants	9	16	8	13
Party Hours	27.5	38	33.25	48
Count Date	7/20	7/12		7/19

NWorc	Conc	NEssx	BVal	Middl	Brist	MVine
		1				
15	1	3	3	1	1	7
8		3	2		1	
1	1	2	1			
	1	17	1			
4	5		6		26	7
14	60	23	77	1	15	176
83		1		10		
	3	2	39	3	16	
6		2	2	5	1	17
72	125	104	95	3	23	74
		2	2			
11	5	3				
2			2	1		
					3	
	4	3	3	14		14
5932	25	20	4787	4		94
3		2				
	5		1	1		6
		6	2		3	9
2	5		10			4
16						26
2	2	23	8	1		2
2	7	12	27		1	
3	25	18	31		2	
	7	6	2	5		
6		1				5
			2			
					3	
	5	3	11			17
41	39	43	44	27	25	30
7591	705	893	5729	445	184	807
16	14	11	16	1		6
43.75	18		51.25	5		22.25
7/6	7/12	7/13	7/12	7/25	7/19	7/12

Butterflies of North America. Kaufman Focus Guides.

**Jim P. Brock and Kenn Kaufman
Houghton Mifflin, 2003, \$22.00**

Reviewed by Bob Bowker

This is the field guide that had to be written – all of the North American butterflies under one cover, brilliantly conceived and executed, quick and easy to use.

The introduction gets us off to a good start with photos of several species illustrating thirteen family groupings, accompanied by a helpful text stressing shape, size, and behavior as better clues than color. A very good section on identification follows with color photos (rather than black and white diagrams) and pointers stressing all of the salient wing features. There are short pieces on butterfly behavior, life cycle, classification, and nomenclature, all simply and deftly explained.

The main body of the Guide is very carefully worked out, avoiding the shortcomings of previous field guides. Each species is given a range map and text on the left hand page, and photos of upper and lower wing surfaces on the right. The range map is color coded for seasonality, and shaded darker for “common” and lighter for “uncommon”. The text begins with a general introduction which includes more specifics as to range, flight period, number of broods, behavior, habitat, nectar and host plants, etc. Then follows a red triangle pointing up the crucial diagnostic information that we are hoping will nail the species. The common names of the main larval foodplants are highlighted at the end with a bright green leaf.

The photos, digitally edited to conform as closely as possible to the “norm”, are excellent. Each species is shown above and below, with pointers indicating identifying features. Where necessary, photos of variations are included. At the extreme top right the actual size of the bug is silhouetted (the smaller butterflies showing bigger than life).

The index is, of course, critically important for speedy identification. Kaufman’s index (at the end of the book) is a model of clear visibility. The common names (no Latin clutter here) of the 800 or so species are neatly and sharply defined on a mere six pages (that’s three page turns max), with 92 headings in bold face highlighting family and subfamily groupings. The end page lists all of the 92 family groupings separately with a convenient color coding system. There is also an index keying the common names of the mentioned larval foodplants to their scientific names, and yes, a separate index for the butterfly scientific nomenclature. The book is handy to carry in the field, and strongly bound, with a reinforced overlapping cover protecting the pages. The paper quality is first rate.

For the past 10 years most of us in the Club have been happily using the Glassberg “Boston, New York, Washington Guide”. It was certainly trailblazing, and remains admirable in many ways. I have been toting both Guides this spring and summer, comparing and contrasting, and would like to end with a few kudos and catcalls.

The first objective of any field guide is to explain clearly and distinctly how it should be utilized. Butterfly identification is almost entirely dependent on wing patterning, and Kaufman’s introduction is much more useful than Glassberg’s, with better illustrations of above and below (no below in Glassberg) and good descriptions of the various shapes and postures. A close reading of this introduction will enable the tyro to understand

exactly what he or she is looking at, both in the field and in the field guide. In the beginning I myself found some of Glassberg's skipper photos as challenging as what I was seeing in the field. A short descriptive introductory paragraph here would have been helpful. That being said, Glassberg's layout of the Grass Skippers is exemplary, with more precise definitions for the Cobweb, Indian, and Leonard's than Kaufman. Clearer definition also for the Eyed/Appalachian look-alikes. Also the Fritillary photos are better.

Kaufman (or more properly, Brock), has poured into this guide a wealth of information far beyond what is required, and yet his signs and signals get you to ID with alacrity. His treatment of the Swallowtails is particularly felicitous.

My cavils with Kaufman are minimal: he oddly omits the black spot at the base of the forewing on the Aphrodite Fritillary (Eastern form). He does not mention the palps length differences of the Sleepy / Dreamy duo. Also, a book of this import should contain a glossary. And, he takes a gratuitous potshot at our beloved NABA, *viz*: "a private enterprise to promote a particular view of butterfly-watching". (Bring back the killing jars!)

Using these two guides in tandem has certainly sharpened my identification skills and understanding, and I will continue to carry them both in the field. Yet I would still recommend the novice begin with Glassberg (putting a bookmark at page 158) for ease of access to our modest fauna, and when comfortable, add on the Kaufman. Both books are a blessing.

Discovering Moths: Nighttime Jewels in Your Own Backyard

John Himmelman . Camden, Me: Down East Books. 2002. 232pp. \$18.95 pb

Reviewed by Carl Kamp

John Himmelman is a writer, a naturalist, and a Connecticut resident who has a self-proclaimed obsession with moths. He is also a cofounder of the Connecticut Butterfly Association and leads lectures and field trips nationwide. His book, “Discovering Moths,” provides the reader with a vehicle to “meet the beautiful, fascinating and under appreciated cousins of the butterflies....” I think that reading the book will change the way we look at moths, and phrases like “Oh, it’s only a moth” will be less commonly heard on butterfly trips.

The book holds an excellent collection of over 90 “live” photos rather than the pinned specimens that are usually found in most of the other guide books. This makes it useful in the field especially with it’s strong representation of many of our day flying moths. It does only scratch the surface of the moth lists which number in the hundreds for suburban back yards, in the several thousands for the state and about 11,000 in the United States. Compare that with about 750 butterflies found nationwide and the identification challenge becomes clearer and often overwhelming when trying to identify at the species level. Himmelman includes ways to attract moths like painting sugaring concoctions on trees, black lights, unzapped bug zappers, and hanging white sheets near lights in the yard. I found his beer and brown sugar recipe also attracted butterflies during the day and quite an assortment of moths during the evening hours.

The author provides a good overview of the different families

including silhouettes and family descriptions. I think a more manageable approach in the beginning is to start by identifying moths at the family level for most and at the species level for the day fliers. I found a careful and repeated reading of the Moth Families chapter useful for this purpose. Taking a second look at moths became more enjoyable with this approach.

Several chapters present a review of moth observations throughout history reaching back to Aristotle's works in 350 B.C. and beyond to about 2460 B.C. when the Chinese discovered secret of harvesting silk from the cocoons of the silk worm caterpillars. The important moth catalogers like Linnaeus, Grote, and Holland in the eighteenth and nineteenth centuries are discussed along with the out-of-print version of modern moth identification by Charles Covell, Jr. in the Peterson Series of nature books. Himmelman confesses that "If Charles Covell Jr., hadn't written his book 'Field Guide to Moths of Eastern North America,' I'd be getting way too much sleep." He also shares the exciting news that this 1986 bible of moths will be updated and reprinted in the not-to-distant future by a different publisher.

Concluding chapters discuss the joys and rewards of raising moths followed by a chapter especially suited to butterfly enthusiasts about the day flying moth community. The last chapter presents a reasonable look at the pros and cons of observing, versus killing and collecting, with the author's preference being decidedly in favor of learning from live moths although seeing a need for the catch and release school of identification.

My copy has quickly joined the ranks of the well used, dog eared tribe of field guides that I use often. The author's website www.connecticutmoths.com is worth a visit as well.

Trip Report: Massachusetts Whites

by Sharon Stichter

Are you tired of looking at Cabbage Whites? Next spring check out the two other white species resident in Massachusetts, the West Virginia White (*Pieris virginiensis*) and the Mustard White (*Pieris napi*). The Checkered White (*Pontia protodice*) is a late-season possibility in the Westport-Gooseberry Neck area, individuals having been seen there in 1998 and 2000, but our three resident species themselves make a very interesting study.

On May 4, 2003 many MBC members had an opportunity to appreciate the differences between these three species on a western Massachusetts field trip organized by Carl Kamp and Roger Pease. At the West Virginia White location in Sunderland, the group quickly found six to eight of these delicate creatures fluttering through dappled shade in the rich, moist streamside woodland. They seemed to have just emerged. Their larval food plant at this site, toothwort or *Dentaria diphylla*, was just flowering at the time, and the West Virginia Whites were nectaring on it as well as other flowers. Later sightings by Sharon Stichter and others up a nearby road brought the probable total to about 10 individuals. Other lovely wildflowers in bloom in this habitat included False Hellebore, Red Trillium, Wood Anemone, Rue Anemone, and Spicebush.

The Mustard White ranges further north and west than the West Virginia, through the Canadian and Hudsonian life zones and onto the arctic tundra. It is usually described as liking shaded woodlands, but at the one well-known Massachusetts site in Lenox, originally discovered by Roger Pease, it inhabits a wet meadow near the Housatonic River, where it apparently breeds on the abundant Cardamine, probably Cuckoo-flower or *Cardamine*

pratensis. Other plants found in this meadow are Golden Alexanders, wild Iris and Bluets.

As Carl Kamp recounted in his memo to MassLep, “After caravanning an hour westward to Lenox and pulling into a field...we started seeing butterflies immediately. A Mourning Cloak flew around a dead stump as we arrived, followed quickly by a mating pair of Mustard Whites. From about 2-4 pm Mustard Whites were flying everywhere. Erik Nielson counted 23 flying at the same time in a quick binocular inspection of one of the large fields. At least three mating pairs were seen...” The butterflies were very fresh; one was seen by Bob Bowker just emerging. The colors ranged from white to yellowish, but the dark green to grey edging along the under hindwing veins was distinctive. (See photo, p.11) The colony seemed to be flourishing; there were likely more than 23 at the site.

Roger Pease revisited the field on September 6 and found seven Mustard Whites in worn to fresh condition, evidence of a second (or third?) summer brood. (See his MassLep post of 9/9/03.) At this time an about equal number of Cabbage Whites were present, whereas in the spring there had been none positively identified, though there were a few suspects. Perhaps the Cabbage Whites do not breed and overwinter in that field, or perhaps they had just arrived from elsewhere. Whether in this instance they pose a threat to the Mustard Whites is not known. In general the spread of non-native plants along with agriculture and suburbia has increased habitat for the introduced Cabbage White at the expense of habitat for the other two whites.

The Mustard White is classified as a Threatened Species in Massachusetts. It has been seen at a few places other than the Lenox site, for instance at MAS Canoe Meadows Sanctuary, but the Lenox site remains a very important location for it.

The West Virginia White can be seen at a number of different sites in western MA, for instance, Mt. Greylock and Mt. Tom. Let's hope there are more colonies of both these beautiful creatures out there, just waiting for us to find them.

Club President Receives Award

Madeline Champagne has been awarded the National Society of the Daughters of the American Revolution State Conservation Award, presented in Recognition of Outstanding Achievement for Environmental Awareness.

Madeline has been active in the Massachusetts Butterfly Club since its beginning in 1995. During her terms as President the Club experienced a period of unprecedented growth. The number of members increased, as well as the number of trips offered and Counts undertaken. Madeline has also been instrumental in the introduction of the Club's website, the formalization of our by-laws and officers roles, and the growth of the Butterfly Institutes. Her commitment to the butterflies first and foremost, but also her energy and willingness to work hard for the Club, her efforts to build relationships with other organizations, and to draw in new butterflyers – all these have been hallmarks of her style.

The DAR State Conservation Award, which was presented in September 2003, recognizes not only Madeline's educational activities and her work with the Club, but also her many other butterfly-related activities, for example her participation in Mass. Audubon and Land Trust programs, and her work since 1998 cataloguing the Denton Brothers Lepidoptera Collection at the Wellesley Historical Society.

Madeline is passionate about educating children and adults about butterflies and moths. Taking vacation time from her computer job, in the spring and fall of 2003, Madeline presented programs at over 40 classrooms for various grade levels at a number of school systems. This fall she supplied over 60 classrooms with Monarch caterpillars (from eggs and caterpillars found in the wild), providing students and teachers an opportunity to study the metamorphosis of the Monarch butterfly, and to learn about the migration to Mexico and use some of the related web sites. Madeline has been doing this educational work for over 10 years.

Equally as important to Madeline as teaching about the life cycle of butterflies and moths, is teaching about respect for nature and environmental issues. For example, at the beginning of her butterfly programs, Madeline asks people to figure out why she has brought no live butterflies in her boxes. When raising Baltimore Checkerspot caterpillars in the spring at local schools, she brings the butterflies back to the field where they came from, and doesn't allow them to be released outside the school. When Madeline provides boxes with caterpillars or Cecropia moth cocoons to classrooms, the teachers are instructed to bring them home on the weekends, so that the plants don't dry up, and so that any butterfly or moth that comes out on the weekend will be released as soon as it can fly.

Congratulations to Madeline on this important award. It recognizes her significant achievements in environmental education and in promoting greater appreciation of nature's beautiful butterflies and moths.

Visit the Club's Website! www.massbutterflies.org

Submission of Articles, Illustrations, and Season Records

We encourage all members to contribute to *Massachusetts Butterflies*. Articles, illustrations, descriptions of butterfly sites, garden reports, and book reviews are welcome and should be sent to the Editor by September 15 for the Fall issue, and January 15 for the Spring issue.

Send Fourth of July counts to Tom Dodd by August 1 for inclusion in the Fall Issue, and your season sightings and records to Tom by December 1 for inclusion in the Spring issue. Sending your records periodically during the season will make data entry an easier task.

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