

Massachusetts Butterflies



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*Cover Photo: Bronze Copper (Lycaena hyllus), by Tom Whelan,
Wayland Community Gardens, September 9, 2006*



Defoliation on June 5, 2005 on Cape Cod *Photo: G. Boettner*

An Inconvenient Moth: Winter Moth Invades New England

George (Jeff) Boettner
University of Massachusetts at Amherst

Why discuss a European moth at this time of year in a Massachusetts Butterfly publication? Most local butterflies are at a standstill in November and December. However, a few other Lepidopteran species are just springing to life. Winter moth, *Operophtera brumata*, (Lepidoptera: Geometridae), which defoliates and can cause tree mortality, has been rapidly spreading throughout the region. Research at the University of Massachusetts-Amherst is documenting the phenomenon and taking action to try to prevent further spread of this invader.

Under the radar screen for many years, winter moth populations had grown to surprising numbers by 2005. Graduate student Brenda Whited (2007) worked on winter moth in eastern Massachusetts under Dr. Joe Elkinton at UMASS-Amherst. In 2005 they found caterpillars at densities of up to 12 caterpillars per bud which amounted to over a quarter million caterpillars per tree! These densities can lead to complete defoliation of infested trees by late May (see photo at left). It is feared that, if allowed to spread, winter moth is capable of shutting down maple sugaring operations, defoliating fruit crops such as blueberry and apple (see photo below), and even impacting wildlife via defoliation of oaks and the resulting disruption of acorn crops (which feed most of the major game and many other wildlife species in the region).

Rich Cech (2007) recently wrote in *Massachusetts Butterflies* about the numerous overwintering strategies for butterflies. He explained how a few butterflies overwinter as adults, others as pupae, larvae or eggs. Winter moth is unusual in that it takes advantage of three of these techniques, all rolled into one. Winter moths are able to overwinter as a combination of pupae, adult moth, and eggs. For starters, mature caterpillars drop out of trees around Memorial Day weekend in Boston and burrow into the soil to pupate. These pupae remain underground until mid November through mid December. Adult moths emerge on warm (above 40° F) nights in November and December, often after a recent rain. Wingless females use sex pheromones (species-specific odors) to attract winged males when ready to mate. After mating, eggs are laid on tree trunks, branches, and near buds. As the tree buds begin to swell in early spring, the eggs hatch and larvae immediately chew into the fresh spring buds.

It might seem odd to emerge as an adult moth in the dead of winter. The major risk is being trapped and killed underground by early winter snows and frozen topsoil. In actuality, if a moth can work out the mechanics of flying in near-freezing cold, then winter can provide some incredible advantages. Primarily, predators are “outsmarted.” By November, the bulk of insectivorous birds have migrated south for the winter, bats have done the same or are in hibernation, many small mammals are going into torpor, and all the insect predators are overwintering as well. So, survival of adult winter moth, and their eggs, can be extremely high.

To maximize their odds, winter moth females have evolved to extremes. The female moth has given up flight, so her wings have been reduced to small nubs (see photo). She also stores all

her energy as a caterpillar, and therefore has no need for feeding as an adult. This allows the adult moth to dispense with any need for a digestive tract or flight muscles, and therefore she is virtually an egg laying machine with a head and legs. She can pack eggs from head to tail which allows her to lay an average of 200+ eggs per female. We have dissected lab reared females packed with over 400 eggs! Considering that each female only needs to get one male and one female offspring to survive to adulthood to maintain a stable population, the populations can build incredibly fast. (For example, if 10% survive per 200 eggs each year, and half are female- then one pair of moths could conceivably produce 1 million pairs of moths in only 6 years!). This is why a new population can be difficult to detect early on and progress to defoliating populations within a handful of years.



Winter Moth wingless female *photo: K. Zylstra*

Winter moth has likely been in Boston for a number of years. Our lab was sent specimens of adult males flying in December 2003 from the Boston area. I suspected these could be winter moth, but did not have voucher specimens from Europe with which to compare them. We forwarded the specimens to Dr. David Wagner (UCONN-Storrs) who also forwarded them to Dr. Richard Hoebeke at Cornell. Both confirmed our fears.

To find out how widespread the moths had become, in 2005 with help from grants from the USDA Forest Service and USDA APHIS-PPQ we began surveying for males by setting out traps baited with female pheromones. Although these pheromones are quite species-specific, we found that our native Bruce spanworm moths (*Operophtera bruceata*) also use a similar pheromone and fly at the same time. Both species can cause defoliation, so it is helpful that we can monitor both pests with the same trap. The downside is that both moths look so similar that it is not easy to separate out the species. It can be done, but neither of the two methods is ideal. Genitalia dissection is labor intensive and moderately accurate. DNA tests are very accurate but are more expensive. To compound the challenge, Dr. Joe Elkinton and Dr. Adam Porter at UMASS have recently used DNA testing to confirm that these moths can hybridize in the field. It appears that winter moth females can mate with Bruce spanworm males, but possibly not vice-versa. If this proves to be true, we could use one simple maternal DNA test to monitor winter moth spread.



A 5 gallon container of caterpillars collected in 20 minutes from Don Adams' apple tree in East Bridgewater, MA in 2005. Mostly winter moth with a few fall cankerworm (*Alsophila pometaria*) and gypsy moth (*Lymantria dispar*). G. Boettner



Winter moth late instar caterpillar on apple branch. G.Boettner

So far, we have confirmed winter moth throughout eastern MA, mostly inside the I-495 beltway, and throughout Cape Cod, Martha's Vineyard and Nantucket. With the help of numerous partners, we have also documented it in coastal ME, coastal NH, throughout RI, in a few eastern spots in CT and on Long Island, NY. As of this writing, we have a paper under review which will show the range of the moth in detail.

Winter moth arrived in Nova Scotia in the 1930's and in British Columbia in the 1970's. In both locations the moth was successfully controlled by releasing a species-specific fly, *Cyzenis albicans*, to hunt down and kill caterpillars. This fly lays eggs where winter moth is feeding, and the egg hatches upon contact with winter moth saliva. The maggot then burrows into the salivary gland of the host and waits until pupation to kill and eat the winter moth pupae. If the wrong species of caterpillar consumes the egg, the egg cannot hatch for lack of proper cues and is excreted.

Upon the discovery of winter moth in Massachusetts, and with permission of the USDA, we immediately began an international effort with Canadian researchers to start collecting *C. albicans* from British Columbia and rearing them in quarantine at the USDA lab at Otis Air National Guard Base. With funding from the State of Massachusetts we have also worked out a method for rearing the fly and winter moth in the lab to augment field collections of the fly. We have subsequently released flies at numerous locations in eastern Massachusetts.

In Europe as well as Canada, pupal mortality from other sources has been shown to be very important for controlling winter moth. Brenda Whited (2007) found that in

Massachusetts we often have very high (up to 80%) pupal mortality in the soil, thanks to shrews and several species of carabid beetles. This result is exciting because it means that mortality here is very similar to the mortality of pupae in its native Europe from ground beetles. The goal of our fly project is to add a specific mortality agent that can help knock out the remaining 20%. (Remember that even at 99% mortality a population remains stable). In both Canadian provinces, *C. albicans* has been able to infect up to 50% of the caterpillar populations. We are hopeful that we will see similar mortality in MA soon. This would potentially enable our native shrews and carabids to control the balance.

Additionally, a recent development holds promise. In the past few weeks, Dr. John Burand at UMASS-Amherst detected a virus in MA winter moth populations from our collections. This virus is currently being compared to a known winter moth virus from Europe. If we are lucky, our winter moth may have arrived in MA carrying its own native virus. This could explain why moth densities in our fly study plots have dropped dramatically over the past two years before our flies were firmly established. We have a long way to go to developing cost effective methods of detecting the virus or understanding its role in a new environment. At this point, crossing your fingers is still allowed.

About the author:

George “Jeff” Boettner works as a field biologist/lab technician for Dr. Joe Elkinton’s lab at Plant, Soil and Insect Sciences at UMASS-Amherst. Jeff’s passion is studying parasites of Lepidoptera (in fact, his Internet name is

equalrights4parasites). He has co-authored papers on small mammals, biological control, native silk moths and their parasites, gypsy moth, browntail moth, and he is currently working on rearing a species-specific fly to control winter moth. Jeff is happy to answer questions. When not chasing critters, he can be reached at boettner@psis.umass.edu

References cited:

Cech, R. 2007. Why Do Butterflies Overwinter at Different Life Stages? A Reflection on the Power of Lifestyle. *Massachusetts Butterflies* 29 (Fall): 2-11.

Whited, B. 2007. MS Thesis. The population ecology of the winter moth *Operophtera brumata* in Eastern Massachusetts. University of MA. Amherst.



Defoliation of an apple orchard 6/5/05 Cape Cod G. Boettner



Author with winter moths collected from a single tree on one night, using sticky bands, at Wompatuck State Park . *Photo: Bob Childs.*

New Discoveries in Rhode Island

July Lewis
Audubon Society of Rhode Island

Interest in butterfly watching has been growing by leaps and bounds in the Ocean State. Since 2004, Audubon Society of Rhode Island has been organizing NABA Fourth of July counts, and now has five active count circles. In 2007, a new Checklist of Rhode Island Butterflies by Harry Pavulaan and David Gregg was published by the Rhode Island Natural History Survey.

With interest in butterflies growing in Rhode Island, but no functioning butterfly club, Massachusetts Butterfly Club member and Rhode Island resident Walter Bosse thought that something should be done. This spring, he worked with Audubon Society of Rhode Island and RI butterfly researcher Harry Pavulaan to develop a series of butterfly walks and an Ocean State Butterflies Yahoo discussion group. The group has been very active and has proved valuable in adding to our knowledge of Rhode Island and New England butterflies. Two discoveries in the summer of 2008 are good examples:

Zabulon Skipper was sighted on the June 28, 2008 NABA Count by Charles Avenengo in Newport at Miantonomi Park, setting an easternmost record for Rhode Island. Zabulon Skipper was listed as “Rare” on the 2007 Checklist, but recent sightings posted on the yahoo group indicate it is more widespread and frequent than previously thought. Most notably, Zabulons were photographed on Block Island on 9/3/2008 by Paulinka de Rochmont -- a new



Zabulon Skipper, Block Island 9-5-08 *P. de Rochmont*



Hackberry Emperor, Davis WR, 8-21-08 *B. Martasian*

record for that locality (see photo) -- and at other locations. Harry Pavulaan identified all the photos as Zabulons, and believes the Zabulon Skipper is expanding its range eastward along the southern New England coast, as well as inland.

Hackberry Emperor, listed as “exact status unknown” on the Checklist, was sighted at Audubon Society of RI’s Davis Memorial Wildlife Refuge on 8/21/2008 by Audubon’s Director of Conservation Scott Ruhren, Ph.D, and Barry Martasian, Hunt River Watershed activist. Barry took the photograph shown. Since it was reported on the discussion group, several people have searched for Hackberry Emperor at Davis, and at least two were successful. Photos have been taken which show at least two individuals, indicating the possibility of a breeding population.

Checklist of Rhode Island Butterflies:

<http://www.rinhs.org/2007/08/06/butterflychecklist/>

Butterflying with Audubon:

<http://www.butterflyingwithaudubon.blogspot.com/>

Ocean State Butterflies discussion group:

<http://pets.groups.yahoo.com/group/oceanstatebutterflies/>

[Editor’s Note: the finding of a Zabulon Skipper at Allen’s Neck, Allen’s Pond Sanctuary, South Dartmouth, MA, on 9-13-08, photographed by Erik Nielsen, now marks the easternmost record for that species, and updates several published range maps, e.g. Cech, *Butterflies of the East Coast*.]

Check out Erik Nielsen’s new **Flight Chart for Massachusetts Butterflies** -- on the Club website at www.massbutterflies.org !

2008 NABA Butterfly Counts

Tom Gagnon

We had fifteen Fourth of July Butterfly Counts and one Seasonal Count (Springfield) this year, with all submitted for our publication. Grand total of butterflies was 13,738. This was down more than 7,000 butterflies from 2007. This is a large drop in numbers, suggesting a possible decrease in butterfly populations. However it may also be that we didn't expend as much effort, spend as much time, or cover as many miles as in previous years. Or could it have been all the rainy weather we had this past Spring and Summer? Whatever it was, it did not dampen our enthusiasm for getting out there and looking for them. We had 130 participants in the 16 different counts. Some of us were counted more than once, since we participated in more than one count.

We had 8 butterflies reported on only one count each. They were: Zabulon Skipper and Hackberry Emperor on the Springfield Count; Juniper Hairstreak and White M Hairstreak on the Martha's Vineyard Count; Pipevine Swallowtail on the Blackstone Corridor Count; Mustard White on the Central Berkshire Count (no surprise here); and Harris' Checkerspot on the Northern Worcester Count. Finally a Canadian Tiger Swallowtail was photographed on the Northern Essex Count. All were great finds for their counts.

We had 9 species seen on only two counts. They were: Harvester, Hickory Hairstreak, Atlantis Fritillary, Meadow Fritillary, Compton Tortoiseshell, Milbert's Tortoiseshell, Tawny Emperor, Hoary Edge, and Northern Cloudywing. With the exception of the Northern Cloudywing, I would expect to find the other eight butterflies in our more Western Count areas in higher numbers. With fewer people counting on these counts, we might

be missing more individuals of these eight species. For the second year in a row, people counting on the North Berkshire Count were not allowed to drive to the top of Mt. Greylock, the highest peak in Massachusetts (construction on the road) where we normally find Compton and Milbert's Tortoiseshells plus sometimes a late Pepper and Salt Skipper. The reservation is supposed to open in the Spring of 2009 and hopefully the Club will have a field trip there.

Seen on all 16 counts were: Eastern Tiger Swallowtail, Orange Sulphur and Monarch. What surprised me was that Cabbage White was missed on two counts and Clouded Sulphur was missed on all five counts on the Cape area. Missed on just one count were: Pearl Crescent, Common Wood-Nymph, Silver-spotted Skipper and Northern Broken-Dash.

Seen on the 2007 or 2006 Counts and NOT SEEN in 2008 were: Checkered White, Cloudless Sulphur, Bronze Copper, Oak Hairstreak, Variegated Fritillary, Indian Skipper, Sachem, Dion Skipper, Pepper and Salt Skipper, and Two-spotted Skipper.

Looking at some of the highlights and disappointments of the individual counts: North Berkshire Count: Very few hairstreaks, and the inaccessibility of Mt. Greylock really hurt this count. Central Berkshire Count reported only 7 Mustard Whites, a very low number compared to previous years. Even the 32 Acadian Hairstreaks were a low number. Northern Pearly Eye was missed. Southern Berkshire Count: 18 Hickory Hairstreaks and 77 Great Spangled Fritillaries were excellent counts. The 390 Common Wood-Nymph was only about half of what this count usually gets, and skippers were very low in numbers. Central Franklin Count had to postpone the count from Saturday to a Tuesday, so that reduced the number of participants out counting. But they broke

the record for all counts in the U.S. for Bog Coppers with 1,509. I understand the mosquitos were so bad that day in the bog they almost carried Mark Fairbrother away to parts unknown. Congratulations to the four participants of that count! The Northampton Count had only two hairstreaks, a high count of 36 Silver-bordered Fritillaries, 3 Tawny Emperors, and for the second year in a row, the state high for Monarchs. 46 Common Sootywings were a fair number. North Worcester Count tallied 53 species, the high for all counts this year. They had a very high count of 463 American Coppers, 20 Banded Hairstreaks, the only Harris' Checkerspots, and 1,289 European Skippers.

The Concord Count found a Common Buckeye, the first for their count and 30 Delaware Skippers. Northern Essex Count had BOTH Tortoiseshells, 68 Silver-spotted Skippers, plus 41 Little Glassywings. Springfield Count was the LAST count to be held (8/17) and had the only Hackberry Emperor and Zabulon Skippers, 6 each. Blackstone Corridor tallied 49 species with their highlight being the Pipevine Swallowtail, 6 Gray Hairstreaks (good year for them), 12 Silver-bordered Fritillaries, 69 Baltimore Checkerspots, 3 Hoary Edge and 39 Mulberry Wings. Bristol Count was hampered by the lack of counters (only 3), but 22 Wild Indigo Duskywings was a nice number. Falmouth Count had 2 Common Buckeyes. Brewster Count listed 27 Coral Hairstreaks, 4 Broad-winged Skippers but few other skippers. Barnstable Count had a nice high count of 178 Pearl Crescents and 7 Broad-winged Skippers. The Truro Count reported in with 3 Common Buckeyes. Martha' Vineyard Count had only 4 participants and still recorded some high figures: 23 Spicebush Swallowtails, 298 American Coppers, 28 Coral Hairstreaks, 28 Edwards' Hairstreaks, 122 Monarchs and 78 Dun Skippers.

Congratulations to all who participated on the counts. Whether it was one count or three or four counts, it was fun to be in the field with so many other butterfly enthusiasts. I can only encourage you to try to take part in as many of these counts as you possibly can. I find that each of the five counts that I take part in, each one has something special to offer -- whether it is a special species found in that particular count area or just the pure beauty of being out, enjoying the great outdoors.



Editor's Note: The Butterfly Count Program is administered by the North American Butterfly Association, 4 Delaware Rd, Morristown, NJ 07960. Official reports for all counts held in the U.S., Canada and Mexico are available from NABA for \$10.00. The unofficial tallies for Massachusetts counts are reported here.

Total	1	118	128	1	87	7	945	772	576	1	1145	1509	101	37	37	41	19	35	21
Northern Berkshire		1	12				56	66	50				5			2	1	7	
Central Berkshire		18	3			7	15	49	24	1			23	32				2	
Southern Berkshire		7	8		1		32	107	10		3		1	2		1	18		
Central Franklin		2	4		4		21	20	17		38	1509	6			3		1	5
Northampton		43	15		5		97	95	93		52					1			1
Northern Worcester		4	13		11		164	209	94		463	23		1		20		7	
Concord		5	6		1		40	40	27		65	8	7		8	1		3	3
Northern Essex		4	36	1	3		405	130	67		14		1			4		1	
Springfield			8		4		7	11	15	1									
Blackstone Corridor	1	3	13		12		8	36	38		47	2	2	2	1	4		9	6
Bristol			1		5				14		2								
Falmouth			1						16		9								2
Brewster		1	2		10		56		14		114		27			1		1	2
Barnstable			1				17		8		8								2
Truro			3		8		6		1		32	6	1					4	
Martha's Vineyard		28	2		23		21	9	88		298		28		28	4			
	Pipevine Swallowtail																		
	Black Swallowtail																		
	Eastern Tiger Swallowtail																		
	Canadian Tiger Swallowtail																		
	Spicebush Swallowtail																		
	Mustard White																		
	Cabbage White																		
	Clouded Sulphur																		
	Orange Sulphur																		
	Harvester																		
	American Copper																		
	Bog Copper																		
	Coral Hairstreak																		
	Acadian Hairstreak																		
	Edwards' Hairstreak																		
	Banded Hairstreak																		
	Hickory Hairstreak																		
	Striped Hairstreak																		
	Gray Hairstreak																		

Total	1	1	132	234	585	35	3	66	17	13	693	178	17	39	2	21	2	45	9	23	12	63	7	53
Northern Berkshire			1	9	26		1				1	1	1	5		6				1		18	5	13
Central Berkshire			1	133	36	3	2				13	26	5	6	1	2						5		5
Southern Berkshire			5	1	77				14		1	48	2	6						1		3	1	2
Central Franklin			11	7	52	3		1			2	15	2					1			1	3		
Northampton			4	5	38	1		36	3		185	6	1	3		2	1	3		5	1	10	1	9
Northern Worcester			65	14	184	23		5		13	12		2	5		6			12	2	7	1	15	15
Concord			12	17	29						20			4					3		1	1		
Northern Essex			10	24	77	2		1				22	1	4	1	5	1	11	5	4		3		3
Springfield			18	6							1			3										
Blackstone Corridor			18	9	57	3		12			93	60	1	3				1		1	2			
Bristol			1	6	9			7			50		1									2		2
Falmouth			1								25										2			
Brewster								4			86		1					3	1	2	1			
Barnstable											178								1					
Truro			1								2								2			3	3	3
Martha's Vineyard	1	1	2	3							24								8	1	1	1	1	1
Juniper Hairstreak																								
White M Hairstreak																								
Eastern Tailed-Blue																								
"Summer Spring Azure																								
Great Spangled Fritillary																								
Aphrodite Fritillary																								
Atlantis Fritillary																								
Silver-bordered Fritillary																								
Meadow Fritillary																								
Harris' Checkerspot																								
Pearl Crescent																								
Baltimore Checkerspot																								
Question Mark																								
Eastern Comma																								
Compton Tortoiseshell																								
Mourning Cloak																								
Milbert's Tortoiseshell																								
American Lady																								
Painted Lady																								
Red Admiral																								
Common Buckeye																								
Red-spotted Admiral																								
White Admiral																								
Red-spotted Purple																								

Total	36	6	4	13	33	158	357	29	1628	635	361	4	6	8	5	103	53	131	1397
Northern Berkshire				3	4	4		1	27	15	6								14
Central Berkshire	1				5	3			247	31	7							1	18
Southern Berkshire	2		1	3	4	14	3		390	17	22		1			1		4	2
Central Franklin	2					7	9		2	23	23	1	1	1			1	2	29
Northampton	18		3			10	7	10	226	132	11					10	46	2	1
Northern Worcester				6	3	14	90	9	4	45	105		2	7		2		1	1289
Concord					6	13	78		26	25	42		2			7		1	
Northern Essex					3	19	56		10	64	68							6	34
Springfield	2	6			3	31		5		22	11							1	111
Blackstone Corridor	8			1	5	21	101		167	35	27	3			1	25	5	1	7
Bristol	2					10	2		34	19	11				2	22			
Falmouth									25	7						12		1	2
Brewster	1						6		66	42	2								
Barnstable								4	128	32	1					13			
Truro						3	2		19	4	16								1
Martha's Vineyard						9	3		257	122	9				2	11		1	
	Viceroy																		
	Haeberry Emperor																		
	Tawny Emperor																		
	Northern Pearly Eye																		
	Eyed Brown																		
	Appalachian Brown																		
	Little Wood-Satyr																		
	Common Ringlet																		
	Common Wood Nymph																		
	Monarch																		
	Silver-spotted Skipper																		
	Hoary Edge																		
	Southern Cloudwyring																		
	Northern Cloudwyring																		
	Horace's Duskywing														2				
	Wild Indigo Duskywing															11			
	Common Sootywing																		
	Least Skipper																	1	
	European Skipper																		

	Total	74	37	44	10	192	121	78	73	5	6	20	23	301	
Northern Berkshire				4		5	1	2		1				17	
Central Berkshire	47	13	2			37	2	1	2			3		70	
Southern Berkshire	5	1	1	1		8	4		2				1	32	
Central Franklin	1		5	2		5	6	3						15	
Northampton						15	2	2	5			1	5	16	
Northern Worcester	5	3	2	6		9	30	15		2			2	11	
Concord			3			11	8	30	25	2		2	4	6	
Northern Essex	3	1	1	1		5	41								
Springfield	3	4									6				
Blackstone Corridor				10		16	26	18	39			1	10	22	
Bristol						12	1					1	1	2	
Falmouth		1												2	
Brewster			4			30		1				4		14	
Barnstable	9					9						7			
Truro			1			2		6						16	
Martha's Vineyard	1	14	11			28						1		78	
		Peeb's Skipper	Tawny-edged Skipper	Crossline Skipper	Long Dash	Northern Broken Dash	Little Glasswing	Delaware Skippeer	Mulberry Wing	Hobomok Skipper	Zabulon Skipper	Broad-winged Skipper	Black Dash	Two-spotted Skipper	Dun Skipper

Summary	No. of Individuals	No. of Species	No. of Participants	Party Hours	Date	Compiler
Northern Berkshire	374	34	6	21	7/12	Tom Tynning
Central Berkshire	897	39	6	17.5	7/19	Tom Tynning
Southern Berkshire	867	43	9	n/a	7/11	Rene Laubach
Central Franklin	1868	42	4	29	7/8	Mark Fairbrother
Northampton	1230	45	8	42	7/20	Dottie Case
Northern Worcester	3147	53	16	68.5	7/6	Carl Kamp
Concord	590	38	19	20.5	7/12	Dick Walton
Northern Essex	1150	40	12	22	7/6	Sharon Stichter
Springfield	279	22	13	6.5	8/17	Roger Pease
Blackstone Corridor	993	49	7	33	7/13	Tom Dodd
Bristol	218	24	3	n/a	7/19	Mark Mello
Falmouth	106	14	4	6	7/16	Alison Robb
Brewster	496	27	6	14	7/19	Alison Robb
Barnstable	318	15	8	7	7/26	Alison Robb
Truro	140	23	5	6	7/12	Alison Robb
Martha's Vineyard	1065	34	4	n/a	7/19	Matt Pelikan
Total	13,738	73	130			

Errata: In the 2007 Fourth of July Count report printed in *Massachusetts Butterflies* No. 29, Fall 2007, the species and other totals for the Truro Count were incorrect. Please disregard those numbers; the correct numbers are available from NABA or from the count compiler.

Great Summer Finds 2008

Many wonderful butterflies, moths, and caterpillars were found this season, and only a few highlights for which photos were available can be mentioned here. A full report on the season's sightings, with numbers and analysis, will appear in the Spring 2009 issue.

Long-tailed Skippers may be the most charismatic, if not the most unusual, of the late season immigrants. The lovely photo below was taken by Janet LeBlanc in her Nahant garden on 9/29/08:



There were at least six other Long-tailed Skipper reports: 9/13 at Sylvan Nursery in South Dartmouth; 9/17 at Allen's Pond by Madeline Champagne; 9/21 by Dorothy Saffarewich in her yard in Newbury; 10/4 at Sylvan Nursery again, where Frank Model got a

photograph; 10/11 in Harwich, photographed by Larry Barry; and 10/11 in Woods Hole by Alison Robb.

Hairstreaks were documented in some beautiful photographs this season. Two species which are particularly important to monitor are our ‘Northern’ Oak Hairstreak, and Juniper Hairstreak. Great Blue Hill in Canton is home to both species, as these photos show:



Oak Hairstreak, GBH *Erik Nielsen 6-29-08*



Juniper Hairstreak, GBH *Frank Model, 5-29-08*

Those much-sought-after late season immigrants, Fiery Skipper and Sachem, were found once again this year, by several observers. Erik Nielsen photographed a Fiery “with attitude” at Sylvan Nursery, and in a record-setting find, Frank Model and Madeline Champagne reported some 12 Sachems at Allen’s Pond.



Fiery Skipper, Sylvan Nursery 9-13-08 *E. Nielsen*



Sachem, male, Allen’s Pond 10-4-08 *Frank Model*



The Meadow Fritillary, found only in western Massachusetts, is not as often reported or photographed as our other fritillaries. Bo Zaremba took this photo in Williamstown on 8/8/08, showing the distinctive under hindwing.

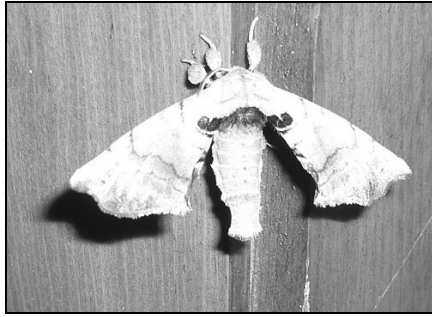
The find of the season was probably this American Snout, found and photographed on Gooseberry Neck on 10-12-08 by Frank Model. According to the Club Records Compiler, Erik Nielsen, this is only the ninth Massachusetts Snout sighting since 1993.



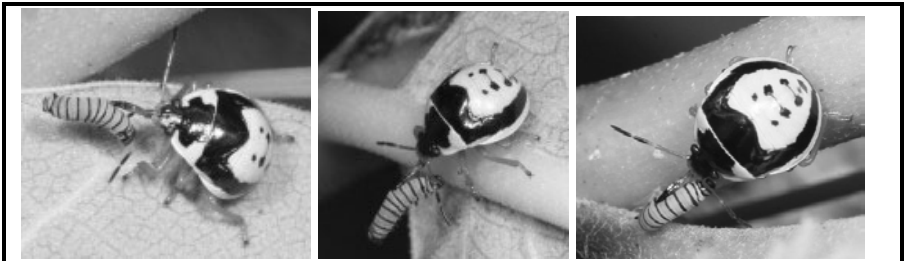


On a warm afternoon from March through May, you might be lucky and find The Infant (*Archiearis infans*), a striking geometer moth with white costal patches on the brown FW, and bright orange with blackish brown base on the HW above. Barbara Spencer photographed this beauty on 4/16/08 in Cummington.

A photo of the silky-haired caterpillar of the Spotted Apatelodes moth (*Apatelodes torrefacta*) appeared in last Fall's issue of *Massachusetts Butterflies* (No. 29). This year Jen Prairie found an adult Spotted Apatelodes in the hallway of her apartment building in West Springfield! It was identified by Mike Nelson. Jen took the photo below on 7/10/08.

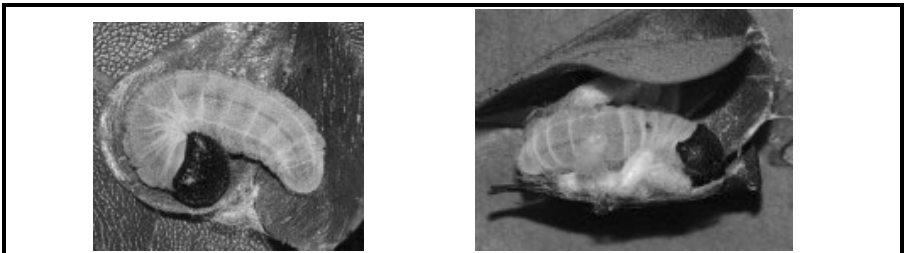


How much do we know about the thousands of predators that annually reduce our butterfly and moth populations? Bo Zaremba took this fantastic series of photos of an Anchor Stink Bug nymph (*Stiretrus anchorago*) attacking an early instar Monarch caterpillar:



Photos: B Zaremba 8/10/08 at Martin Burns WMA, Newbury.

And Tom Murray documented Wild Indigo Duskywing caterpillars with and without Braconid wasp parasites, on 9/20/08 in Groton:



IN MEMORIAM

Barbara J. Walker

Barbara Walker was an active member of the Massachusetts Butterfly Club, from the mid-1990's. She served as Secretary of the Club from 1998 to 2001, and as Vice President West from 2005 to 2008. She and her husband Rick and son Mike led and participated in many, many field trips; in fact, Barbara might win the award for the most field trips participated in by any Club member! In 2007, she took part in no less than SEVEN 4th of July counts around the state! Barbara and Rick organized food and refreshments for the Northern Worcester Fourth of July Count for many years, cooking great hamburgers. They also took major responsibility for the potlucks at the Club's Annual Meeting in November. Barbara was a great friend to many of us, and will be sorely missed. She passed away from cancer on March 29, 2008

Barbara and Rick were longtime volunteers at MassAudubon's Broad Meadow Brook sanctuary, and did most of the monitoring of the Harris' Checkerspot colony under the power line there. On August 16, 2008, the sanctuary held the Barbara J. Walker annual Butterfly Festival. At that event a meadow on the powerline was dedicated to Barbara, and named "Barbara's Meadow". The name is already on the printed trail maps. During the ceremony, Sanctuary Director Deb Cary presented a sign that will designate the meadow and evoke the memory of its caretaker. It reads

Barbara's Meadow
Barbara Walker, a quiet advocate
for the land and all its creatures,

**loved and cared for this special place
which nourishes butterflies.**

A few weeks before the festival, Barbara's husband, Rick, and Rick's father, made a handsome, comfortable, sturdy wooden bench with a back. A plaque on it says "In Memory of Barbara Walker, Who Loved Finding Butterflies in this Field." Barbara's daughter, Kerry, painted colorful butterflies on it. Rick and his brother, Steve, installed the bench in a shady spot overlooking the meadow.

Thank You from the Walker Family

The Walker family would like to thank everyone who worked so hard to make the Barbara Walker Butterfly Festival such a success. In particular, we'd like to express our appreciation to Deb Cary, Kristin Steinmetz, and Martha Gach for doing their usual brilliant job of organizing, publicizing and being everywhere at once. No event at Broad Meadow Brook is ever given less than the staff's full dedication, but we felt that this event was a labor of love for them as well as us.

We are deeply grateful to all the members of the Mass Butterfly Club who came out and gave freely of their time, their knowledge, and their enthusiasm to speak to novices and enthusiasts alike. We know that a sunny weekend day in the midst of summer is time in short supply, and we're so glad you chose to spend it with us and Barbara's memory.

Thanks, from all of us, to Elise Barry, who was Barbara's friend, and that did not stop just because she's no longer with us. Elise made sure that everything came together the way it should, and our only regret is that Barbara couldn't have been there along with her, to see just how well everything went.

To everyone who helped, who attended, and who encouraged the idea from its very beginning, we thank you. It was wonderful to see just how many friends Barbara had in the butterfly community, and how many we still have here.

Richard, Kerry, Mike and Shannon Walker



Barbara Walker with Mike Walker on an MBC trip to Pittsburg, NH.
Aug. 4, 2006 *Photos: S. Stichter*