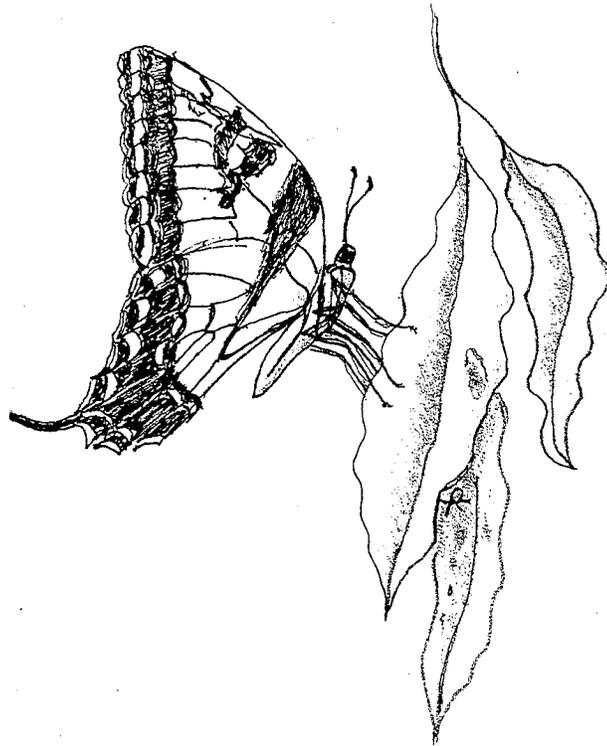


MASSACHUSETTS

BUTTERFLIES

Spring 2000

No. 14



MASSACHUSETTS BUTTERFLIES is the semi-annual publication of the Massachusetts Butterfly Club, a chapter of the North American Butterfly Association. Membership in NABA - MBC brings you *American Butterflies*, *Butterfly Garden News*, *Massachusetts Butterflies*, MBC newsletter with count and field trip schedules for the year, and all of the benefits of the association and club, including field trips and meetings. Regular annual dues are \$25.00. Those joining NABA - MBC for the first time should make their checks payable to NABA and send it to our treasurer, Lyn Lovell, at the address listed below. Membership renewals are handled through the national office: NABA, 4 Delaware Road, Morristown, NJ 07960; telephone 973-285-0907. Be careful to keep your membership up to date.

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Submission of Articles, Illustrations and Season Records Deadlines

We encourage all members to contribute to *Massachusetts Butterflies*. Articles, illustrations, sightings, out-of-state sightings, adventures, book reviews are welcome, with priority to articles on Massachusetts and New England. Please send 4th of July counts to Tom Dodd by August 1 for the Fall issue and your 2000 sightings and records to Tom by December 1 for the Spring issue. Sending your records periodically during the season will make data entry an easier task for Tom. He will turn all our records into a summary and inclusive tabulated record, as has been done in the past. Send all other material to Alison Robb by August 30, and January 30.

Litter of Butterflies

I leaned forward in the sturdy Ranger truck
The thin, sandy brown ribbon of a road
rushed beneath me
Up ahead I saw triangular pieces of colored paper
in a scattered pile
Red, white, and yellow, littering the path, then
In a swirl of motion
the multicolor scraps picked themselves up
into the sky
And around the dusty truck
the barrage of flying colors
unfolded

Sarah Gross

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Butterfly Century Run — 1999

Brian Cassie

If you have never been on a century run for birds, the object is to find at least a hundred species of birds in a single day. I have tried century runs for birds in various places (I even shared the big day record for South Carolina at one point) and always managed to reach the century mark. For butterflies, pulling off a century run anywhere in the United States would be a monumental task. Butterflies are just too seasonal here to see 100 or more in a day. So, in lieu of a one-day run at a hundred, I decided, on May 31, to take a one-year run at a hundred. That seemed like challenge enough.

Let's back up to the start of the butterfly season for me — March 21. That is the day I saw my first butterfly of the year, a Cabbage White in our garden in Foxboro. In the next few weeks I saw Spring Azures here and there, a Clouded Sulphur outside the Boston Expo Center, several Mourning Cloaks, and a record-early Eastern Pine Elfin followed by a record-early Sleepy Duskywing. It is hard to judge what sort of a year it will be by only looking at your April records, but 1999 was at least off to a fast start.

April 29 found me atop Turkey Hill, a Trustees of Reservations property in Hingham, watching my step for fear of treading on Baltimore Checkerspot caterpillars. There were at least a thousand. Three days later, after I finished a bird census on Martha's Vineyard, Matt Pelikan showed me a beautiful White M Hairstreak in Chilmark. What a fantastic early-season butterfly, the second he had discovered in as many days. In the tropics there are innumerable hairstreaks with brilliant iridescent blue wings above, but in Massachusetts there is just one, and it is a rare find.

The kindergarteners at two Easton schools and I found a fair number of butterflies on May 11 and 12, including Eastern Tailed-Blue, Gray Hairstreak, American Lady, Question Mark, and Common Sootywing. Those little kids were so good at pointing out butterflies and they had enough patience to watch a Clouded Sulphur lay eggs on fifteen different White Clover plants, one egg per plant, right on the midrib on the upper surface of a leaflet.

The Butterfly Institute came my way in mid-May and I took the group on a field trip in Foxboro on May 15, when we found several each of newly-emerged Frosted Elfins, Juniper Hairstreaks, Common Ringlets, and Cobweb Skippers. By the 18th, back at Martha's

Vineyard for a follow-up bird census, I spotted a lone Variegated Fritillary flying along the beach at Lambert's Cove on the north shore. This was a portent of things to come for this southern migrant.

May 29 was one of the really special days of the year for me. Dave Small had organized one of his Butterfly Institute field trips to coincide with the flight of the Bog Elfin, an extremely rare and local butterfly in the Commonwealth. Dave took us into Tom's Swamp in Petersham, the only known breeding locale for the species in Massachusetts, and we walked slowly along the causeway crossing the bog there, hoping for one of these diminutive elfins to appear. While we searched, we came across Henry's and Eastern Pine Elfins and a handsome Arctic Skipper and these were all much appreciated by the rather large gang in attendance. Finally, Dolores Price yelled for everyone to come quickly and there in the middle of the road was the prize of the day. This was one obliging elfin, not at all camera-shy. Needless to say, it was a new butterfly — a lifer — for me and almost everyone else.

Just two days later, on a trip that took two hours from start to finish, I drove over to Raynham and walked out along a narrow elevated path along the edge of an Atlantic White Cedar swamp. My quarry that day was Hessel's Hairstreak, an extraordinary little green butterfly that inhabits only cedar swamps and nearby flowers. I found a Hessel's Hairstreak before too long, and within fifty feet of it a Harvester and another White M Hairstreak. What a great butterfly trio! When I got home from Raynham, I wrote in my journal "This episode made me think that maybe I could run up a good list of butterflies this year in Massachusetts. Generally, I don't like this 'year list' mentality, but I might try it anyway. That's why I'm thinking about Mt. Greylock tomorrow."

I had seen 48 butterflies by the end of May (45 as adults and 3 as caterpillars). The following morning, at Mt. Greylock, I added six more, including 8 fantastic Early Hairstreaks and a Milbert's Tortoiseshell. I hadn't seen a Milbert's Tortoiseshell in the state for some time (nor had most other butterfly watchers) and since this is my favorite butterfly, I was thrilled with the sight. Of course, 1999 turned out to be a special year for Milbert's Tortoiseshell and a lot of people got to see them.

Our club president, Tom Gagnon, steered me to some really great butterflies in 1999, including a Common Roadside Skipper in Westfield on June 4. Later in the month, on the 21st, Tom and Cathy Dodd found some newly-emerged greater fritillaries in Hopedale and Lyn Lovell and I drove over and found one Aphrodite and 5 Great

Spangled Fritillaries nectaring on various flowers, including dogbane. We did not locate the Southern Hairstreaks they had seen, however.

Right at the end of June, Cathy and Tom and I pushed ourselves around in the marshy parts of a Millis farmstead on a very hot morning and found three Two-spotted Skippers. This is, as far as we know, the most reliable spot for this elusive species in Massachusetts. We also saw a number of fresh Bog Coppers, purplish above and bright yellow below. They are remarkably handsome when newly emerged.

I cannot leave June behind without mentioning the 3-4 Southern Hairstreaks found for me by my son Alex at Turkey Hill on June 29. He described them to me perfectly but I couldn't put a name to one until I saw it. Alex wasn't sure I really knew that much about butterflies after all.

On Independence Day, the day after the Foxboro 4th of July Butterfly Count, I drove to a couple of spots in Sharon and Wrentham to follow up on butterflies that had been seen the day before. By noontime, I had pushed my year's total to 88 and wrote in my journal "I have 3 months to find 12 more butterflies — let's see what the south wind blows in!"

Well, I didn't really have to wait for the south wind to blow something my way. I just picked up the phone when it rang and heard Tom Gagnon describe a little wet area beside the railroad tracks in Richmond where he had just discovered several Dion Skippers. The Dion Skipper is an outstanding butterfly in Massachusetts, with a few closely guarded breeding populations. I had never seen it anywhere. Tom Dodd and I set up a quick trip out to the Berkshires and on July 10 we found 3 Dion Skippers in Richmond, and a Harvester, to boot. Up on October Mountain, we got wonderful looks at about 100 Atlantis Fritillaries and a dozen or more Northern Pearly Eyes. On our way back east, we made a stop at Forest Park in Springfield and got nose-to-nose (we actually touched "noses") with a Hackberry Emperor, which was busily laying eggs when she wasn't flirting with us.

July 11 found a number of us on the Northern Worcester County 4JBC. I discovered no new butterflies on the count, but did see over 1200 American Coppers, 29 Gray Hairstreaks, and oh-so-many Silver-spotted Skippers (236 adults and 51 caterpillars) — all at the Wachusett Reservoir.

The next "year butterflies" came along the Milford powerlines, domain of lots of good butterflies and one very good butterfly, Richard Hildreth. Richard took Tom Dodd and me on a little tour on July 17 and we saw 36 species, including a Common Buckeye, a Fiery Skipper, and 20 Broad-winged Skippers, all new for 1999. I got one

yellowjacket sting for each new butterfly today.

On July 22, at Robin Gross's house, I saw something not many people have seen in this state - a whole bunch of Pipevine Swallowtail caterpillars feeding on Pipevines. They were quite a sight. Sixteen days later, at the Sylvan Nursery in South Dartmouth, I saw my first adult Pipevine Swallowtail of 1999 (and only my fourth ever in Massachusetts), along with a Common Buckeye and a Little Yellow. The Little Yellow was pretty worn but, hey, I counted it anyway.

Tom Gagnon came through for me again in short order. He led a trip around the Fannie Stebbins Sanctuary in Longmeadow and found a nice colony of Zabulon Skippers. Nearly every Zabulon Skipper that has been seen in the state in the past decade or so has been found in Longmeadow. To make sure I saw one of these interesting skippers (and still keep my perfect attendance with my summer campers) I rushed out to Stebbins early one morning and walked around in the dew-laden meadows, trying to find a Zabulon Skipper roosting. It didn't work and I got soaked in the process, but once the sun finally shone, the butterflies became active, one male Zabulon landed on a flower in my path, and I got to work on time.

Late August brought butterflies #98, #99, and #100. On the 25th, at a wet meadow in Easton, I found 7 Leonard's Skippers, just hatched and brilliant, along with the only butterfly that I saw in 1999 that was unseen elsewhere - a female Sachem. Then, on August 28, I got to the promised land with #100. You might feel differently about this, but since a butterfly has four parts to its life cycle and in two of those (adult and caterpillar) you can always tell if the animal is viable, I count caterpillars and adults equally. So, with that said, I bought ice cream cones all around when Dottie Case and Tom Gagnon showed me about 300 Tawny Emperor caterpillars munching away on Hackberry trees in Hadley. At the Northampton Community Gardens we found Variegated Fritillaries and another Pipevine Swallowtail and we ended the trip with great looks at 3 Little Yellows in the colony found by Roger Pease in Holyoke.

Butterfly #101 entailed a long drive back to Lenox, in the Berkshires, to see a Mustard White (September 3). On the 12th, we started our migration field work at Westport and South Dartmouth and I saw my first Cloudless Sulphurs of the year. More often than not, these large, distinctive butterflies do not get to Massachusetts at all in the fall, but in 1999 there was a small flight. Other September highlights included 14,000 Monarchs at Westport-South Dartmouth on the 18th and an unbelievable 16 Fiery Skippers (along with 2 Painted

Ladies — #103) at Cape Ann the next day with the Mass. Butterfly Club. There were still a lot of butterflies in early October in Westport-South Dartmouth and our migration watch scored 18 species on October 2, with my third White M Hairstreak of the year (at Sylvan Nursery), as well as Cloudless Sulphur, Little Yellow, 14 Common Buckeyes, and over 1200 Monarchs.

What a year, with many highlights and no regrets. I know of only four butterflies I missed : two "one-day wonders" — the Giant Swallowtail and the Long-tailed Skipper; Gray Comma (which was unreported but certainly out there somewhere); and the enigmatic and very local Bronze Copper. I was fairly certain I could find the copper in 1999, but the fellows who know where to find them weren't talking (or answering phone or e-mail messages) and repeated trips to Wayland Community Gardens (mostly by Stan Bolton) and other spots nearby turned up nothing.

One thing is for certain. Finding 103 species of butterflies (102 adults and 1 caterpillar) is not something I could ever have accomplished on my own. I am as grateful as can be to all of the persons mentioned above for taking pains to help me with this pleasurable endeavor. My special thanks to my wife, Sarah Jane, for putting up with all of this nonsense.

If you want to try this yourself sometime, here are a few suggestions. First, make sure to tell as many people as you can. That way you can get help from many directions. Next, plan to get to the Connecticut Valley and western Massachusetts several times through the summer. The western half of the state has a number of species that you just cannot find farther east: Mustard White, West Virginia White, Early Hairstreak, Bog Elfin, Atlantis Fritillary, Meadow Fritillary, Gray Comma, Hackberry Emperor, Tawny Emperor, Dion Skipper, and Zabulon Skipper. If you already live in western Massachusetts, you might want to plan a trip or two east to look for Hoary Elfin, Hessel's Hairstreak, Two-spotted Skipper, and late summer migrants from the South (sometimes more common coastally). Finally, you have to hope the weather will be good and the year will be a productive one for butterflies.

All of these pieces fell into place for me in 1999. There is nothing to say they couldn't for you when you decide to look for all our butterflies. I hope you see 104!

****Kudos to Tom and Cathy Dodd for their irrepressible energy and determination to produce beautiful records and summaries.

1999 Season Summary and Records *Tom Dodd*

What a fabulous year for butterflies, with 104 species reported during the year, it seems like each year we receive another new treasure to behold! Arctic to zabulon, little -- GIANT, fiery -- tawny, european -- american, were the partial names exclaimed that fullfilled our fantasies throughout the year.

This year, the club sponsored two successful Butterfly Institutes. The field trip participants had incredible looks at ovipositing and finger-sitting Harvesters, a single Bog Elfin, delighted the throng of onlookers, and Early Hairstreaks for even the latecomers. (*Advertisement* - Don't miss out on the fun! Sign up for one of the Institutes that will be coming soon to a location near you.)

A sincere thank-you to over 50 observers listed below for submitting their records. Keep it up! In addition to sending in your records, please submit any detailed reports of butterfly sightings found outside their normal range or flight period. Finally, a special thank-you to Cathy Dodd for her assistance processing the 9000+ records received this year.

Observers

S. Barry [SBa], J. Baird [JBa], J. Berry [JB], S. Bolton[SBo], B. Bowker [BB], S. Carrol [SC], d. case [DC], B. Cassie [BC], M. Champagne[MC], J. Choiniere [JC], R. Cutler[RC], C. Decker[CDe], C. Dodd [CD], T. Dodd [TD], M. Fairbrother [MF], L. Fieldstad fide TG[LF], T. Gagnon [TG], F. Goodwin [FG], T.Hanson[TH], S. Heinricher[SH], T. Hendrickson[The], R. Hildreth [RH], G. Howe [GH], C. Kamp [CK], A. Keith [AK], J. Lapato[JL], L. Lovell [LL], M. Lynch [ML], D. Marotte[DM], A. McGinnis[AM], J. Mullen [JM], M. Murphy[MM], B. Nikula [BN], K. Parker [KP], R. Pease [RP], M. Pelikan [MP], S. Perkins fide BN[SP], W. Petersen fide BN[WP], M. Polana [MPo], D. Potter [DPo], D. Price [DP], M Rines[MR], A. Robb [AR], D. Savich [DS], D. Small [DSm], E. Solberg[ES], J. Sones [JS], B. Speare [BS], J. Springer+North Jersey Bfly Club[JSp], S. Stichter [SS], L. Stillwell[LS], C. Tibbets, [CT], J. Trimble [JT], T Tyning[TT], B. Walker [BW], R. Walton[RW], G. Watkevich[GW], P. Weatherbee [PW], various other observers [vo]

Locations

Butterfly Institute East Field Trip[BEAST] ---MAS Broad Meadow Brook Wildlife Sanctuary, Worcester[BMBS] ---MAS Broadmoor Wildlife Sanctuary, Natick[BMOOR] --- Butterfly Institute West Field Trip[BWEST] ---Crane WMA, Falmouth[CRFAL]---Crane Pond WMA, Groveland[CRGRO] ---Fannie Stebbins Refuge, Longmeadow[FANST] ---Gooseberry Neck, Westport[GOOS] ---MAS Ipswich River Wildlife Sanctuary, Topsfield[IRWS] ---Massachusetts Butterfly Club Field Trip[MBC] ---MAS Wellfleet Bay Wildlife Sanctuary, Wellfleet[WELLF] ---MAS Wachusett Meadow Wildlife Sanctuary, Princeton[WMWS] ***July 4th Counts*** C.Berkshire[CB4]---Cape Cod[CC4]--- C. Franklin[CF4]--- Concord[CO4] ---Falmouth[FA4]---Foxboro[FX4]--- Martha's Vineyard[MV4]---N.Berkshire[NB4]---N.Worcester[NW4]--- S.Berkshire[SB4]

1999 Season Summary

SWALLOWTAILS

A Giant Swallowtail was observed on July 17, by Christyna Laubach and Kate Harding during the Southern Berkshire County 4th of July Butterfly Count. This is a rare find and there have been no reports of this species in this state since 1895. Further details of this sighting are found in the November 1999 (No. 13) issue of *Massachusetts Butterflies*. Pipevine Swallowtails made a generous appearance particularly in the Connecticut River valley and along the coast. Robin Gross reported 17 caterpillars munching on Pipevine plants at her Lakeville residence during late July. Dottie Case and Tom Gagnon kept tabs on some individuals (max. 2) seen at the Northampton Community Gardens during August and September. Canadian Tiger Swallowtails experienced good numbers in western MA, with a new maximum of 235 at Mt Greylock on June 5. I don't separate the two species of tigers in the state. I would appreciate more detailed reports for these species, so that we can better answer questions about their regional distribution, maximum numbers, and flight dates. Black Swallowtails seemed to have a typical year, and Spicebush Swallowtail maybe just a little better.

WHITES AND SULPHURS

The uncommon Mustard Whites, were found over one month later than any previous years. This new late date may well be due to the lack of visitation to their habitat during that time of year. Cabbage Whites, Clouded and Orange Sulphurs all had typical years. One Orange Sulphur was observed in West Tisbury by Matt Pelikan, just one day shy of the absolute latest date (12/30). If anyone sees a sulphur two days later (Jan 1), is it considered a late or early date? Cloudless Sulphur numbers were well below last year's tremendous flight. In an article on Cloudless Sulphurs in *Massachusetts Butterflies* (No. 12), Brian Cassie stated that the average number of individuals sighted for the flight years 1987, 1993, and 1995 was 26. This year's sightings totalled 23 -- just off the mark. By far, the most exciting discoveries this year were Little Yellows. In his second e-mail of July 8, (the first e-mail reported a Pipevine Swallowtail in his yard!), Matt Pelikan reported seeing a Little Yellow nectaring on Buddleia in his Oak Bluffs yard. Three more individuals were seen in other coastal locations through early August and then three individuals in the Westport area on September 26. Roger Pease discovered 4-5 males and 1-2 females at a field in Holyoke on August 7. In an e-mail, he wrote, "I have periodically visited this locality over the past quarter century to see Little Yellows. This year is the first time I connected." This was the beginning of a number of other sightings in the Connecticut River valley that occurred as far north as Whatley and Sunderland. Roger found females ovipositing on Wild Sensitive Plant, *Cassia nictitans* on August 9, depositing one per minute over a five minute period, and recorded mating activity on August 12. I also observed egg laying at this location on August 14.

Dave Small snapped a wonderful photograph of a Harvester laying eggs among the woolly aphids. You can see the female arching her abdomen, the beautiful underside of her wings, the woolly aphids, and the leaves on the alder branch just starting to bud. This is a pretty rare event to record, since the butterfly itself is uncommon to rare, though this year's flight was very good. Brian Cassie et al. counted 1182 American Coppers at Wachusett Reservoir on July 11, almost twice as many as last year at this site. Only one Bronze Copper was reported, and Bog Copper numbers were about average. Comparing Edwards, Banded, Striped, and Acadian Hairstreak counts to previous years shows their numbers are about normal, but it seemed to me it was pretty slow. Coral Hairstreak did well on the coastal plain. The elfins had an overall good year. The Butterfly Institute (West) was successful in observing a single Bog Elfin. It seems that the field trip to this location will become an annual event. Southern and Gray Hairstreaks had a good year. The Butterfly Institute (West) participants and members of the New Jersey Butterfly Club reported good numbers of Early Hairstreaks this year. Single Hickory Hairstreaks were reported from a few areas this year. Juniper Hairstreak and Hessel's, though it is difficult to tell with so few observations, both seemed to have good flights. Juniper also had a healthy second flight. White M Hairstreak, not seen every year, was reported in south-eastern MA on both early and late dates. Eastern Tailed-Blue and the azures had a typical year. Similar to the Tiger Swallowtails, I have not separated the azure species and would welcome more detailed sightings. In particular, try to report the "forms" (marginata, violacea...) that you positively identify. I suspect that some Spring Azures are reported as "Spring" solely because it is spring, and the same holds true for Summer Azures. I think that submitting reports with the "form" forces us all to be more observant. Silvery Blues were not well reported, except at the Delaney Reservation in Stow, where Barbara Walker & co. reported over 100.

BRUSH-FOOTED BUTTERFLIES

The fritillaries all had good flights this year. Variegated Fritillaries had both early and late records. Fred Goodwin's reports from the Ipswich River MAS cornered the market on them, with 60 observed on their 4th of July count. If Variegated Fritillaries get to Massachusetts early enough, and find their hostplant (typically Lanced-leaved Violet), they seem to reproduce readily. Richard Hildreth reported two Atlantis Fritillaries in Milford (Sep 2, 20), both on late dates. He netted the September 20 individual, and noted its worn and beat-up condition and smaller size. Richard, a very qualified observer, spends much time in Maine and has seen many there, but there are no known recent records of this species in the eastern part of the state and at such a late date. I would like to suggest that if possible, a photo be taken if encountered again. Eastern Commas. and Question Marks had average years. Compton Tortoiseshell, Mourning Cloak, the ladies, and Red Admiral, all had sub-par flights this year. Common Buckeyes had an average flight this year. The numbers of Red-spotted Purples and White Admirals seemed low. Viceroy's, however, being a caterpillar "look-a-like" of the Red-spotted Purple seemed to have a good year. Hackberry Emperors posted a good year. Tawny Emperors are just not that easy to find. The caterpillar is gregarious and may be an easier find, since 200-500 eggs are laid on the underside of a Hackberry Tree leaf. The

satyrs and nymphs had an average year. Mark Lynch and Sheila Carrol hit a new high count (31) for Eyed Brown at Quabbin Park. Although 1000 Common Ringlets is a rare occurrence, it doesn't beat the 1300 observed in Easton in 1993. Monarchs had one of the best fall migrations in years! After Hurricane Floyd blew through there was nothing stopping them. They flew by in incredible numbers during September 18-20, and witnessed by many observers at various points across the state. It was exciting watching them flying below the crest of the dunes and against the wind through Horseneck Beach parking lot in Dartmouth. An estimated 14,000 flew through on September 18!

SKIPPERS

It is very hard to generalize, especially just looking at a summary of records, but skippers on the whole, had a good year. Silver-spotted Skippers claimed a new high count of 206 at Wachusett Reservoir on July 11. These skippers were also recorded at a new late date. Barbara Walker reported that her sighting on September 26 looked to be a fresh individual. Richard Walton reported 12+ Hoary Edges in Sudbury. This is not the most ever seen in Massachusetts, but it is still a rare occurrence. Southern and Northern Cloudywing both had good years. The majority of duskywing species also had a good year. Common Sootywing had a better than average year, with a number of reports of three or more. Fiery Skippers had a major flight into Massachusetts this year. Within a period of only a few days, there were records from across the state. Longmeadow, Quabbin, Milford, and the south shore had records in mid July, a full two months earlier than any sightings in the last ten years. The following are the numbers for each year: 1991=5, 1995=2, 1996=1, 1997= 2, 1998 = 1, and 1999=57. Fifty-seven -- that's not a misprint! Tom Gagnon reported 3 in Northampton on September 28. The MBC field trip to Gloucester and Rockport on September 19 surprised us with a total of 16 individuals in three different areas. It's amazing that the Rockport area has been such a magnet to these butterflies, year after year, since first seen in the state. What is so attractive about this location to them? I noticed that Indian Skippers were more numerous this year than past years. Brian Cassie submitted a detailed report of a Sachem found on August 25 at a powerline clearing in Easton. Zabulon Skippers were very common this year in two of their known locations. On August 7, Tom Gagnon led a field trip to Fannie Stebbins and Forest Park. Fannie Stebbins scored an unbelievable 39 Zab's, as well as 305 Peck's Skippers and 17 Common Buckeyes. Forest Park, known for its Hackberry and Tawny Emperors, also had 14 Zabulon Skippers. The previous maximum was set last year with just seven. Single individuals were also found in two other locations this year. Lucile Fieldstad observed a Long-tailed Skipper on August 10 in Agawam, two weeks earlier than previous records. Since 1996, we have averaged one or two reports of this species each year.

1999 Butterfly Records

*=new early flight date, **=new late flight date, high counts in bold

Pipevine Swallowtail			
May	27 *	Provincetown	1 K Gentalen fide BN
Jul	8	Oak Bluffs	1 MP
	25	Cape Ann	1 DS,CT
Aug	4	Northampton	1 TG,DC
	7	Dartmouth	1 BC
Sep	4	Northampton	2,1 DC,TG
	18	Northampton	1 CK
	23	Newbury	1 SS
	26	Petersham	1 JBa
Black Swallowtail			
Apr	30	Mt Holyoke, S Hadley	1 DC
May	9	Granby	3 TG
	10	Mt Sugarloaf, Deerfield	3 DC
Jun	5	Sheffield Newbury	2 2 ML,SC SS
	6	Mt. Greylock+var loc. CRFAL	10 2 MF,BWEST AR
Jul	7,15	Newbury	3 SS
	25	Blue Hills	6 BC
Aug	1	Chilmark	4 AK
	3	W Newbury	10 FG
	7	IRWS	6 FG,DM
Sep	13	Mt Wachusett, Princeton	7 RH
	24	Oak Bluffs	1 MP
Giant Swallowtail			
Jul	17 * **		1 SB4
Tiger Swallowtail (spp)			
Apr	30	Mt Holyoke,S Hadley	1 DC
May	2	Cape Ann Westboro,Shrewsbury	2 2 DS,CT BW
	29	Mt Greylock IRWS Petersham	23 12 18 CD,TD FG BWEST
	30	Mt Greylock, Pittsfield	57, 42 TG
	31	Barre Falls Dam/Rutland State park	46 ML,SC
Jun	5	Mt Greylock	235 TG
	6	Mt. Greylock, var loc.	207 BWEST
	19	Barre Falls Dam,Barre	15 BWEST
Jul	6	Northbridge	9 RH
Aug	7	FANST	11 TG,MBC
	17	IRWS	6 FG
Sep	23	Wenham	5 AR,TH,FG
Oct	26 **	CRFAL	1 AR,MG
Spicebush Swallowtail			
May	9	Longmeadow	1 KP
	15	Longmeadow Holyoke	1 3 KP TG
	16	Sunderland BMBS Sherborn	1 2 1 DC GH RH
Jul	5	Charlton	13 RH
	11	Chappaquiddick Is + Edgartown	10 AK
	11	Cape Ann Falmouth	7 8 DS,CT AR,vo

Aug	1	IRWS	6	DM
	23	Wenham	14	AR,TH,FG
Sep	3	Northbridge	5	RH
	26	Northampton Amherst	1 1	TG DC
Oct	31	** Cape Ann	1	DS,CT
Mustard White				
Apr	25	Lenox	21	RP
May	22	Pittsfield	2	TG
Aug	29	** Lenox	5	RP
West Virginia White				
Apr	13	* Lee	present	PW
	25	Mt Tom	5	RP
May	2-10	Sunderland	max 4	DC
	22	Mt Greylock	18	TG
Jun	6	** Mt. Greylock, var loc.	2	BWEST
Cabbage White				
Mar	30	Foxboro	1	S Cassie fide BC
Apr	19	Borderland State Park,Easton	19	BC
May	1	Wellfleet	38	AR,TH,JS
Jun	27	Worcester	79	ML,SC
Jul	11	Edgartown	175	AK
	15	Westport	87	RH
Aug	2	Plum Island	89	SBa
	20	Appleton Farm, Ipswich	150	JB
	25	GOOS	124	SBo
Sep	4	Westport	265	MBC
	25	GOOS	261	MBC
Oct	15	Westport	118	RH
Nov	1	Katama	8	MP
	21	Quabbin Reservoir Dorchester	1 2	TG MM
	23	Cape Ann	2	DS,CT
Clouded Sulphur				
Apr	18	Dorchester	1	BC
	19	Oak Bluffs Cape Ann	2,1 1	MP DS,CT
May	15	Uxbridge	84	CD,TD
	16	Edgartown	30	MP
Jul	3	Plum Is Nelsons Is,Rowley	25+ 32	ML,SC JB
	31	Grafton	31	DP,DSm,TD,CD
Aug	7	FANST Worcester Airport	43 74	TG,MBC ML,SC
	20	Appleton Farm, Ipswich	42	JB
Sep	1	Appleton Farm, Ipswich	54	FG
	12	Worcester Airport Westport	100 36	ML,SC RH
	19	Barre Falls Dam/Rutland SP	75	ML,SC
Oct	8	Westport	34	RH
Nov	1	Edgartown/Katama	20	MP
	23	Worcester Cape Ann	1 3	SBa DS,CT
Orange Sulphur				
Apr	30	Holliston	2	RH
May	15	Chilmark	20	AK
Jul	11	Katama	500	AK

Jul	11	Katama	500	AK
Aug	29	Chilmark	50	AK
Sep	1	Appleton Farm, Ipswich	61	FG
	4	Katama	1000	AK
	12	Worcester Airport Westport	78 78	ML,SC MBC
	25	Westport	142	MBC
	26	Katama	200	AK
Oct	3	Katama	200	AK
	6	Westport	96	RH
Nov	1	Edgartown/Katama	200	MP
	23	Cape Ann	4	DS,CT
Dec	30	** W Tisbury	1	MP
Cloudless Sulphur				
Sep	4	Chilmark	1	AK
	5	Morris Island, Chatham	1	BN
	9	Westport	1	RH
	11	GOOS	1	CK
	12	Westport Chilmark	3 2	MBC AK
	12	Cuttyhunk Is S Monomoy Is	3 1	SP WP
	19	Edgartown/State Forest GOOS	1 1	MP AR
	25	Westport	4	MBC
Oct	3	Harwich Edgartown	1 1	JS MP
	16	Penikese Is	1	THe
Little Yellow				
Jul	8	Oak Bluffs	1	MP
	11	Falmouth	1	FA4
	17		1	CC4
Aug	7	Dartmouth Holyoke	1 4-5M 1-2F	BC RP
	12	Holyoke	7-9	RP
Sep	12	Holyoke Whately	3 1	MF TG
	23	Sunderland	1	D Minear fide DC
	26	Northampton S Dartmouth	1 3	TG BC & co
Oct	2	Holyoke	4-5	RP
	11	Holyoke	4	RP
	11	Sunderland	1	D Minear fide DC
Harvester				
May	2	Whitinsville	1	CD,TD
	9	Northbridge	2	RH
	16	Royalston	2	BWEST
Jun	3	BMBS	2	GH,MBC
Jul	4	Upton	2	CD,TD
Aug	31	Athol	4	DSm
Sep	1	Athol	1	DSm
American Copper				
Apr	30	Falmouth	3	AR
May	11	Cape Ann	24	DS,CT
	12	Easton Oak Bluffs	35 14	BC MP
	16	Northampton	97	TG
	27	Wenham	45	FG
Jul	11	Chappaquiddick Is,Edgartown	100	AK

	11	Wachusett Reservoir, Sterling	1182	BC
	27	CRFAL	40	AR,TH
Aug	31	Wenham	30	FG
Sep	11	Longmeadow	10	KP
Oct	27	Penikese Is	6	AR
Nov	20 **	Edgartown/Katama	1	MP
Bronze Copper				
Jul	10		1	CO4
Bog Copper				
Jun	26	Millis Tisbury	25 3	CD,TD, BC MP
Jul	6	Cape Ann	3	DS,CT
	10		3 25	CO4 CF4
	11		2 6	MV4 NW4
Coral Hairstreak				
Jun	26 *	Mansfield	5	CD,TD, BC
Jul	16	Milford	2	RH
	17	Twinefield	14	AR,TH,BN
	23	Edgartown	3	MP
	24		5	CBE_X
Acadian Hairstreak				
Jul	3	Williamstown, Foxboro	present 7	PW FX4
	5	W Boylston	3	TD
	24	Pittsfield	2	TG
Edwards' Hairstreak				
Jun	26	Forest Park, Springfield West Tisbury	1 1	TG MP
Jul	3	West Tisbury	25	MP
	3	Sharon	12	CD,TD
	11	Longmeadow	1 42 3	KP MV4 NW4
Banded Hairstreak				
Jun	12 *	Gill	1	BWEST
	16	Mt Holyoke,S Hadley Groton	6 1	DC SBo
Jul	2	Cape Ann	6	DS,CT
	5	Hopedale	5	CD,TD
	15	Upton Newbury	6 3	TD SS
	17	Milford	5	RH, BC,TD
	31	Grafton	1	DP,DSm,TD,CD
Hickory Hairstreak				
Jun	29	Holliston	1	RH
Jul	3		1	FX4
	11		1	NW4
	17	Alford	1	TG
Striped Hairstreak				
Jun	19	Longmeadow	2	KP
	29	Holliston	8	RH
Jul	2	Milford	8	RH
	5	Pittsfield	3	TG
	10	IRWS	6	BS fide FG
	17	Longmeadow	3	KP
	18	Holliston	4	RH

Southern Hairstreak			
Jun	20	Hopedale	2 CD,TD
	25	Milford	4 RH
	29	Hingham	3-4 BC
Jul	16	Canton	1 BC
	27 **	CRFAL	1 AR,TH
Brown Elfin			
Apr	7	WBWS	1 JS
	18	Truro, WBWS	25, 36 JT
	25	Wellfleet, Truro BMBS	20,50 2 BN BW
May	1	Wellfleet	146 AR,JS,TH
	9	Edgartown, W Tisbury Turners Falls	8, 9 1 MP TG
	16	Edgartown	29 MP
	22	BMBS	1 GH,MBC
Hoary Elfin			
Apr	15	W Tisbury, Edgartown	1, 1 MP
May	14	W Tisbury	14 MP
	15	MV	10 AK
Jun	15	Medford	1 MR
	30 **	Harvard	25 JC
Frosted Elfin			
May	1	Turners Falls	4 DC
	9	Turners Falls Airport	21 TG
	15	Katama Mansfield	1 8 AK BEAST
	22	W Boyston BMBS	2 2 CD,TD GH,MBC
	31	Uxbridge	1 TD
Henry's Elfin			
Apr	28	Amherst	1 DC
May	2	Amherst	1 TG
	17	Cape Ann	1 DS,CT
	29	Petersham	1 BWEST
Jun	6	CRFAL	2 AR
Bog Elfin			
May	29	Petersham	1 BWEST
Eastern Pine Elfin			
Apr	8 *	Foxboro	1 BC
	21	Holliston	4 RH
May	1	Wellfleet	13 AR,TH,JS
	2	Amherst Whitinsville	7 7 TG CD,TD
	9	Turners Falls Airport	16 TG
	10	Edgartown	17 MP
	15	Uxbridge MV	14 15 CD,TD AK
Jun	21	Edgartown	1 MP
Juniper Hairstreak			
May	1 *	Wellfleet	6 AR,TH,JS
	11	Cape Ann	2 DS,CT
	15	Foxboro Mt Tom, Holyoke	9 55 BC,vo TG

	22	Oak Bluffs	3	MP
Jul	18	Northboro	6	CD,TD,BC
Aug	3	Amherst	3	DC
	19 **	Amherst	1	DC
Hessel's Hairstreak				
May	15 *	Canton	5	CD,TD
	31	Raynham	1	BC
White M Hairstreak				
May	1 *	Chilmark	1	MP
	13	Mansfield	1	RH
	31	Raynham	1	BC
Jul	18	Foxboro	1	MC
Oct	2 **	GOOS	1	MBC
Gray Hairstreak				
Apr	18	W Tisbury	1	MP
	30	Chicopee	2	RP
May	10	Edgartown	4	MP
Jul	3	Edgartown	9	MP
	11	Sterling	27	BC
	27	CRFAL	5	AR,TH
Aug	29	Groveland	7	FG
Sep	3	Cape Ann	5	DS,CT
	11	Upton	7	CD,TD, JL
Nov	1 **	Edgartown/Katama	1	MP
Early Hairstreak				
May	29	Mt Greylock	11	CD,TD
	30	Mt Greylock	7	TG
Jun	5	Mt Greylock	4	JSp
	6	Mt Greylock	11	BWEST
Eastern Tailed-Blue				
Apr	27	Edgartown	1-2	MP
May	16	BMBS	16	GH
Jun	20	Martin Burns WMA, Newbury	9	SS
	26	Mansfield	10	CD,TD,BC
Jul	2	Milford	42	RH
	16	Milford	25	RH
Aug	3, 10	W Newbury	20, 31	FG
	18	Cape Ann	16	DS,CT
Sep	20	Uxbridge	11	TD
Oct	9	Northbridge	2	RH
	17	Oak Bluffs	2	MP
Spring Azure (spp)				
Apr	5	Holliston	2	RH
	11	BMOOR	20	BB
	19	Mansfield Easton	34 38	RH BC
	24	Dover	20	BN
	28	W Tisbury	26	MP
May	1	BMBS Provincetown	13 180	GH,RC AR,TH
	9	IRWS Northbridge	38 28	FG RH
	10	Edgartown	40	MP

	11	Cape Ann IRWS	18 117	DS,CT FG
SBo	15	Mt Greylock MV Harvard	16 25 32	ML,SC AK
	16	Needham Edgartown	32 30	BB MP
	28	Belmont	20-40	AM
	29	IRWS	38	FG
Jul	18	Worcester Wachuset Reservoir	8 14	CD,TD DP,DSm
	25	Petersham	5	CK
Sep	15	Falmouth	1	AR
Silvery Blue				
May	9	Stow	4	BW
	13	Mansfield	1	RH
	27	Cape Ann	1	DS,CT
	30	Stow	100+	BW,vo
Jun	6	Mt Greylock, var loc.	3	BWEST
	21	Sunderland	1	DC
Variegated Fritillary				
May	22 *	Vineyard Haven	1	BC
Jul	6	Cape Ann	4	DS,CT
	18		60	IP4
	22	Cape Ann	6	DS,CT
Aug	17	Northampton	4	TG
	31	Wenham	27	FG
Sep	19	Cape Ann	4	DS,CT
	20	Uxbridge	3	TD
	26	W Boylston	2	BW
Oct mid		Adams	1	B Bresett fide PW
Nov	5	Cape Ann	1	DS,CT
	21 **	Quabbin Reservoir	1	TG
Great Spangled Fritillary				
Jun	8	Williamstown Florence	present 1	PW TG
	20	Martin Burns WMA, Newbury	14	SS
Jul	3	Warwick	12	SH
	5	Barre Falls Dam/Rutland State park,	70	ML,SC
	15	Royalston	53	CK
	17	Gate 40 Quabbin,Petersham	25	DSm
Aug	25	Easton	12	BC
	28	Tower Hill, Boylston	10	CK
Sep	3	Northbridge	8	RH
	19, 26	Northampton	5, 5	TG
Oct	7	Florence	1	TG
Aphrodite Fritillary				
Jun	12	Gill	1	BWEST
	25	Milford	7	RH
Jul	5	Charlton Upton	17 42	RH CD,TD
	18	Upton	19	CD,TD,BC
Sep	11	Upton	12	CD,TD,JL
Oct	2 **	Royalston	1	CK
Atlantis Fritillary				
Jul	3	Cummington	30	TG

	10	October Mtn, Washington	87	TD, BC
		Silver-bordered Fritillary		
May	14	Royalston	present	CK
	22	W Boylston	7	CD,TD
Jun	2	Gill	15	BWEST
Jul	9	Appleton Farm, Ipswich	16	FG,JB
	18	Upton	32	CD,TD,BC
	25	Quabbin Park	23	ML,SC
Aug	25	Appleton Farm, Ipswich	54	FG
Sep	5	Cape Ann	20	DS,CT
	11	Upton	25	CD,TD, JL
	19	Rockport	4	MBC
	26	Cape Ann	1	DS,CT
		Meadow Fritillary		
May	9	Quabbin Park	1-2	ML,SC
	10	Williamstown	present	PW
Jun	13	Monson	1	ML,SC
Jul	10		9	CF4
	17	Sheffield	1 3	ML,SC SB4
		Harris' Checkerspot		
May	23	Plum Island	1	ML,SC
Jun	5	Milford	8	BEAST
	19	Barre Falls Dam	37	TD,CD, DS _m ,DP
	20	Newbury Royalston	8 5	SS CK
		Pearl Crescent		
May	8	BMBS	1	GH,BW,JM
	22	Uxbridge, W Boyston	85, 47	CD,TD
	30	Stow	60	BW ,vo
Jul	11	Wenham Longmeadow	81 55	FG TG
	18	Wachusett Reservoir Upton	142 266	DP,DS _m CD,TD,BC
	27	Sherborn CRFAL	164 120	RH AR,TH
Aug	10	W Newbury	172	FG
	31	Wenham Canal	627	FG
Sep	4	Longmeadow	188	TG
	26	W Boylston	26	BW
Oct	2	Holyoke Royalston	1 4	RP CK
	17	Oak Bluffs	1	MP
		Baltimore Checkerspot		
Jun	16	Richmond	3	PW
	19	Hingham	1000+	BC
	26	Tisbury	12	MP
Jul	3	Williamsburg Easton	3 149	TG CD,TD
	24		4	CB4
		Question Mark		
Apr	6	West Tisbury, Edgartown	1, 1	MP
May	10	Edgartown	2	MP
Jun	19	Wenham	2	FG
Jul	3	Sunderland	3	DC
	16	Newbury	1	SS
Aug	7	IRWS	1	FG,DM

	16	Arlington		1	AM
Sep	24,25	Westport		5,7	RH
Oct	2	GOOS		3	MBC
	16	Newbury Penikese Is		1 1	SS THE
Eastern Comma					
Mar	27	W Boxford Mt Tom, Holyoke		1 2	JB TG
	31	Mt Tom, Holyoke		15	TG
Apr	1	IRWS		4	FG
May	2	Whitinsville Sherborn BMBS	3 1 3	CD,TD	RH GH,RC
Jun	3	BMBS		13	GH,MBC
Jul	11	Belmont		3	AM
Aug	7	FANST		3	TG,MBC
Oct	9	Northbridge		2	RH
Nov	20	Milford		1	RH
Compton Tortoiseshell					
Mar	25	IRWS Holliston		1 1	FG RH
Apr	6	IRWS		2	FG
	7	Adams	present		PW
	21	Holliston		1	RH
May	9	Quabbin Park		1	ML,SC
Jul	11			1	MV4
	18	Holliston		1	RH
Mourning Cloak					
Feb	11	Borderland State Park, Easton		1	BC
	20	Chilmark		1,1	MP
Apr	5	Cape Ann Holliston		9 5	DS,CT RH
	8	IRWS Cape Ann		7 9	FG DS,CT
	25	IRWS		10	FG
May	1	BMBS		3	GH,RC
	16	Royalston		3	CK
Jun	5	Mt Greylock		5	TG
Jul	14			4	NB4
Sep	19	Barre Falls Dam/Rutland State park		5	ML,SC
	25	GOOS		12	MBC
Oct	2	Katama		2	AK
	29	Newbury		1	SS
Milbert's Tortoiseshell					
Mar	26	Canoe Meadows, Pittsfield		1	L Tate-Beltran fide TT
Apr	1	Royalston		1	K+J Morris fide CK
	19	Canoe Meadows, Pittsfield		1	GH
	29	Northfield		1	MPo
	30	BMBS		1	BW
Jun	1	Mt Greylock		1	BC
	2	Natick		2	ES
	5	BMOOR		1	BB
	6	Mt Greylock Northampton Adams	1 1 1		MBC TG PW
	11	Orange Carlisle	1 2		DSm TD
	12	Athol		1	GW
Jul	6	IRWS		1,1	FG, CDe
	8	Uxbridge		7,4	RH

	10	Canoe Meadows, Pittsfield	2	TD, BC
	13	Arlington Wayland	12 1	MR SBo
Aug	6	Hatfield	1	DC
Sep	25	** Warwick	1	SH
American Lady				
Apr	27	Edgartown	1	MP
May	14	W Tisbury	5	MP
	29	IRWS	6	FG
Jun	26	Longmeadow	6	KP
Jul	16	Milford	6	RH
Aug	29	Newton Wayland	2 2	MM LS, ES
Sep	19	Cape Ann	7	DS, CT
Oct	2	Westport	27	MBC
	6	Westport	11	RH
	15	Westport Penikese Is	3 2	RH THe
Nov	22	Chilmark	1	AK
Painted Lady				
Jun	1	Hop Brook WMA, Lee	present	PW
Aug	19	Wachusett Reservoir - gate 25	1	SBa
Sep	18	Westport	2	RH
	19	Cape Ann	2	DS, CT, MBC
	25	Westport	3	RH, MBC
Oct	2	Westport	2	BC, MBC
	11	Sandwich	1	AR
Red Admiral				
Apr	11	Mt Auburn Cemetary	1	MR
	21	Cape Ann	1	DS, CT
May	22	Uxbridge	1	CD, TD
Jun	19	Wenham	1	FG
Jul	11	Wenham	2 26	FG + MV4
Aug	17	Grafton	1	DP, JM
Sep	24	Westport	2	RH
Oct	2	GOOS	2	MBC
	16	Newbury	1	SS
	17	Westport	1	TD
Common Buckeye				
Jul	3	Oak Bluffs	1	MP
	5	Charlton	1	RH
	25	Canoe Meadows, Pittsfield	5	TT
Aug	7	FANST	17	TG, MBC
	17	Wenham Canal	6	FG
	23	Wenham Canal	7	AR, TH, FG
Sep	4	Mashpee	4	MM
	25	Westport	7	RH, MBC
Oct	2	Westport	14	BC, MBC
	6	Westport	6	RH
	15	Penikese Is	2	AR, THe
Nov	1	Edgartown / Katama	3	MP
White Admiral				
Jun	4	Florence	1	TG

	6	Petersham, Hubbardston Mt Greylock	1,1 1	CD,TD BWEST
	11	Concord	1	RW
Jul	3	Warwick	3	SH
	25	Canton	1	BC
Aug	15	Athol	2	DSm
Sep	23	Royalston	1	CK
Red-spotted Purple				
May	25	IRWS	1	FG
Jun	2	Oxbow National Wildlife Refuge, Harvard	3	SBo
	5	Sheffield	4	ML,SC
	6	Tom Swamp, Petersham	5	CD,TD
	19	Barre Falls Dam, Barre	3	BWEST
Jul	10	October Mtn, Washington	3	TD, BC
	25	Canton	7	BC
	31	Grafton	3	DP,DSm,TD,CD
Aug	23	IRWS	2	AR,TH,FG
Sep	12	Mt Wachusett Mt Tom	1 1	BW TG
Viceroy				
May	9	Newbury	1	SS
	22	Turners Falls BMBS	2 1	DC GH,MBC
Jun	5	Milford Sheffield	6 5	BEAST ML,SC
	19	Barre Falls Dam, Barre	9	BWEST
Jul	13	Athol Wayland	4 4	DSm SBo
	31	Holliston	9	RH
Aug	10	W Newbury	11	FG
Sep	11	Upton Charlton, Uxbridge	6 4, 6	CD,TD RH
	27	Sherborn	1	RH
Hackberry Emperor				
Jun	12	Forest Park, Springfield	6	TG
	16	Mt Holyoke, S Hadley	1	DC
	26	Forest Park, Springfield	4	TG
Jul	18	Forest Park, Springfield	4	ML,SC
	31	Forest Park, Springfield	6	TG
Aug	7	Forest Park, Springfield	13	TG,MBC
	28	Mt Holyoke, S Hadley	2	TG,DC,BC
Sep	4	Forest Park, Springfield	9	TG
Tawny Emperor				
Jul	18	Forest Park, Springfield	2	ML,SC
Northern Pearly-Eye				
Jun	26	BMOOR	1	BEAST
Jul	5	Barre Falls Dam/Rutland State park	5	ML,SC
	10	October Mtn, Washington	13	TD, BC
	14		31	NB4
	17	Sheffield	3	ML,SC
	28	BMBS	1	CK
Eyed Brown				
Jun	23	Hop Brook WMA, Lee	present	PW
Jul	5	Barre Falls Dam/Rutland State park,	8	ML,SC
	10	Lancaster	8	SBo
	18	Petersham	11	ML,SC

	25	Quabbin Park	31	ML,SC
Aug	7	FANST	2	TG,MBC
Sep	4	Longmeadow	1	TG
Appalachian Brown				
Jun	11 *	Oxbow National Wildlife Refuge,Harvard	3	SBo
Jul	8	Cape Ann	5	DS,CT
	15	Sherborn Cape Ann	2 12	RH DS,CT
	16	Royalston	4	CK
Aug	4	Wellfleet area	1	BB
Sep	2	Milford	1	RH
Little Wood-Satyr				
May	21	Acton Sherborn	1 1	SBo BB
	28	Belmont	100-200	AM
	31	Barre Falls Dam/Rutland State park	56	ML,SC
Jun	5	Worcester Plainville	42 60	CD,TD AR
	13	Oak Bluffs- Sev Loc	30	MP
	29	Cape Ann Milford	32 14	DS,CT RH
Jul	4	Northbridge W Brookfield	18 30+	RH ML,SC
	29	Longmeadow	1	KP
	30	Cape Ann	1	DS,CT
Common Ringlet				
May	15	Worcester Mansfield+Foxboro	2 4	GH BC
	30	Stow	80	BW ,vo
Jun	4	Ipswich	78	JB
	5	Cape Ann	159	DS,CT
	19	Barre Falls Dam,Barre	68	BWEST
Jul	31	Grafton	114	CD,TD, DSm,DP
Aug	1	IRWS+Wenham	1000	DM
	10	W Newbury	78	FG
	23	Wenham	52	AR,TH,FG
Sep	12	Longmeadow	1	KP
Common Wood-Nymph				
Jul	1	Williamstown	present	PW
	8	Uxbridge	29	RH
	11	Chappaquiddick,Edgartown	50	AK
	18	Northboro, Upton	29, 40	CD,TD,BC
	20	Cape Ann	85	DS,CT
	25	Quabbin Park	241	ML,SC
	29	Cape Ann	50	DS,CT
Aug	11	Nelson Island,Newbury	150	SS
	24	Newbury	28	SS
Sep	12	Upton Plum Island	1 2	CD,TD ML,SC
Monarch				
May	13	Katama	1	MP
	31	Barre Falls Dam/Rutland State park,	6	ML,SC
Jul	3	Warwick	25	SH
Sep	12	Westport Athol	294 55	RH+MBC MPo
	18	Westport Worcester Mt Tom Penikese Is	>14000 210 1168 1000	MBC ML,SC TG THe
	19	Worcester Airport Cape Ann GOOS Barre		

		187 1000 693 131		SBa DS,CT AR ML,SC
	20	GOOS Milford GayHead		
		236 631 2000+		AR+TH RH AK
	23	Cape Ann	500	DS,CT
	24	Westport Cape Ann	791 400	RH DS,CT
	25	Westport Cape Ann	2568 500	RH,MBC DS,CT
Oct	2	Westport	1430	BC,MBC
	6,8,10, 15	Westport	1557, 764, 372, 70	RH
Nov	1	Edgartown/Katama	9	MP
	23	Oak Bluffs	1	MP
		Silver-spotted Skipper		
May	22	BMBS	1	GH,MBC
Jun	20	Sunderland BMBS	3 8	DC DP,DSm
Jul	3	Tisbury	20	MP
	11	Wachusett Reservoir, Sterliing	206	BC
	17	Milford	42	RH
	18	Wachusett Reservoir, Sterliing	136	DP,DSm
Aug	3	W Newbury	28	FG
	7	FANST	20	TG,MBC
Sep	26	Wachusett Reservoir, Sterling	1	BW
Oct	1 **	Northampton, Florence	1,1	TG
		Long-tailed Skipper		
Aug	10 *	Agawam	1	LF
		Hoary Edge		
Jun	5 *	Milford	1	BEAST
	13	Greenfield	2	TG
	20	Sudbury	12+	RW
	25	Milford	6	RH
Jul	5	Charlton	7	RH
	12,17	Milford	4,2	RH
	18	Sterling	2	DP,DSm
		Southern Cloudywing		
Jun	12	West Tisbury	14	MP
	20	BMBS	1	DP,DSm
	28	CRFAL	1	AR
Jul	3		5	FX4
	5	W Boylston Charlton	1 1	TD RH
	10		3	CF4
	11		2	NW4
		Northern Cloudywing		
May	10 *	Cape Ann	1	DS,CT
	22	BMBS	6	GH+MBC
Jun	3	BMBS	11	GH,MBC
	5	Gloucester Worcester	10 15	DS,CT CD,TD
	16	Tower Hill,Boylston	5	BW+SBa
	20	BMBS	7	DP,DSm
Jul	11		2 4	NW4 FA4
		Dreamy Duskywing		
May	1	BMBS	1	GH,RC
	9	Stow Grafton	7 7	BW DP,DSm

	15	BMBS		13	GH,DP
	22	BMBS		15	GH,MBC
Jun	5	Worcester		5	CD,TD
	20	BMBS		1	DP,DSm
Sleepy Duskywing					
Apr	19 *	Borderland State Park,Easton		1	BC
	25	Truro		1	BN
May	1	Chilmark Wellfleet		5 3	MP AR,TH,JS
	10	Edgartown		9	MP
	14	West Tisbury Milford		14 1	MP RH
	15	MV		20	AK
	16	Royalston		1	CK
	31	Westfield		1	TG
Juvenal's Duskywing					
Apr	17 *	Wachusett Res,Sterling		1	BW
	30	West Tisbury		10	MP
May	1	BMBS Chilmark		21 16	GH,RC MP
	9	BMBS Quabbin Park Grafton	24 30 28	GH ML,SC DP,DSm	
	14	West Tisbury		50	MP
	16	Needham Edgartown		7 30	BB MP
	25	Edgartown		40	MP
Jun	6	Hubbardston, Petersham		7, 8	CD,TD
Jul	14 **	Florence		1	TG
Horace's Duskywing					
Apr	28 *	IRWS		1	FG
May	9	Quabbin Park		2	ML,SC
	22	Worcester Airport		2	ML,SC
Jul	16	Blue Hills,Canton		10	BC
	17	Milford		4	RH, TD, BC
	31	Holliston		3	RH
Sep	19 **	Cape Ann		1	DS,CT,MBC
Wild Indigo Duskywing					
May	2	BMBS		2	GH+RC
	16	BMBS		7	GH
	30	Stow		15	BW,vo
Jun	12	Gill		6	BWEST
Jul	12	Milford		10	RH
	18	Holliston Wachusett Reservoir		14 20	RH DP,DSm
Aug	25	Appleton Farm, Ipswich		3	FG
Sep	26	Northampton		1	TG
Common Sootywing					
May	8	Great Meadows, Concord		4	BC
	30	Bolton		6	BW,vo
Jul	18	Northampton		6	TG
Aug	9-18	Sunderland		max 3	DC
	24	Community gardens, Wayland		10	BC
	26	Carlisle		6	TD
	31	Oak Bluffs		3	MP
Sep	12	Bolton		3	DSm
	13 **	Upton		1	TD,CD

		Arctic Skipper		
May	29	Petersham Williamstown	1 present	BWEST PW
Jun	3	BMBS	2	GH, MBC
	5	Moran WMA, October Mt	30, 10	JSp
	5	BMBS Canoe Meadows, Lenox	3 1	CD, TD ML, SC
	6	Windsor Royalston	35 1	BWEST CK
		Least Skipper		
Jun	4	Sunderland	1	DC
	12	Westboro	30+	ML, SC
	21	Edgartown	30	MP
Aug	4-6	Wellfleet, Truro, Eastham	24	BB
	7	FANST	91	TG, MBC
	25	Appleton Farm, Ipswich	35	FG
Sep	5	Cape Ann	9	DS, CT
	25	Westport	2	RH, MBC
		European Skipper		
May	30	Bolton	1	BW ,vo
Jun	5	BMOOR	75	BB
	16	Tower Hill, Boylston	1000	BW, SBa
	19	Barre Falls Dam, Barre	200	BWEST
	20	Framingham Hopedale	118 906	CD, TD
	21	Edgartown	60	MP
	26	Royalston	60	CK
Jul	4	Sherborn	50	BB
	17	Newton	2	MM
	25	Quabbin Park	2	ML, SC
		Fiery Skipper		
Jul	15 *	Longmeadow Quabbin - Gate 36	1 1	MF DSm
	16	Milford	1	RH
	18	North River WS, Daniel Webster WS	1, 1	MPo
Aug	30	Halifax Cape Ann	1 2	BC DS, CT
	31	Oak Bluffs	1	MP
Sep	1	Cape Ann	4	DS, CT
	8	Florence	1	TG
	11	IRWS Falmouth Holyoke	2 1 1	FG AR RP
	12	Oak Bluffs	1	MP
	19	Cape Ann	16	DS, CT
	26	Westport Cape Ann Woburn	1 3 1	RH DS, CT MR
	28	Northampton IRWS	3 1	TG FG
Oct	3	Cape Ann	1	DS, CT
		Leonard's Skipper		
Aug	12	Sunderland	1	DPo fide DC
	25	Easton	7	BC
	29	Athol	8	DSm, DP
Sep	2	Milford	5	RH
	9	Oak Bluffs	13, 9	MP
	19	Barre Falls Dam / Rutland SP	2	ML, SC
Oct	3	Edgartown	1, 1	MP
		Cobweb Skipper		
May	8	BMBS	1	GH, BW, JM

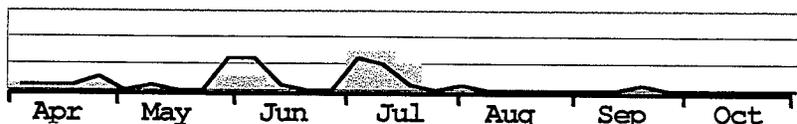
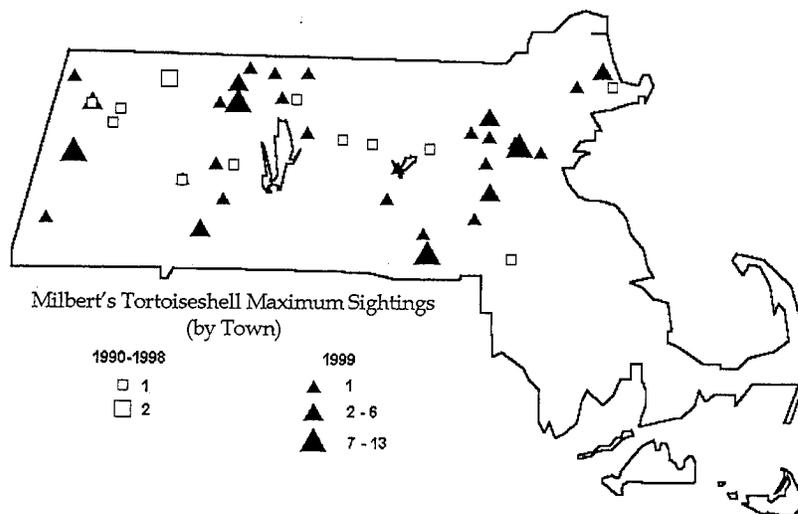
	13	Florence	11	TG
	15	Uxbridge	9	CD,TD
	16	Edgartown BMBS	7 9	MP GH
	22	Uxbridge	7	CD,TD
	31	Uxbridge	2	TD
		Indian Skipper		
May	22	Uxbridge, Sterling	4, 13	CD,TD
	31	Oak Bluffs Westfield	6, 3 2	MP TG
Jun	2	Chelmsford	11	CD
	6	Barre Falls Dam, Hubbardston	6	CD,TD
	13	Greenfield	2	TG
	19	Barre Falls Dam, Barre	4	BWEST
Jul	3	IRWS	1	FG
		Peck's Skipper		
May	20	Lincoln	1	BB
	29-31	Longmeadow	max 21	KP
Jun	5	Milford	22	BEAST
Jul	31	Grafton	42	DF,DSm,TD,CD
Aug	1	Chilmark Longmeadow	15 32	AK KP
	7	FANST	305	TG,MBC
	10	FANST	64	BC
	17	Wenham	26	FG
Sep	4	Longmeadow	16	TG
	27	Milford	10	RH
Oct	2	Newton Longmeadow	1 1	MM KP
		Tawny-edged Skipper		
May	16,30*	Longmeadow	2, 13	KP
Jun	6	Longmeadow	8	KP
	13	Upton	6	CD,TD
Jul	6	Northbridge	9	RH
	31	Grafton	16	DF,DSm,TD,CD
Aug	7	FANST	20	TG,MBC
	25	Easton	4	BC
Sep	1	IRWS	1	FG
		Crossline Skipper		
Jun	18	Acton	3	SBo
Jul	4	Upton	10	CD,TD
	12, 17	Milford	6, 5	RH
	18	Upton	4	CD,TD, BC
Aug	4-6	Wellfleet, Truro, Eastham	1	BB
		Long Dash		
May	22	Sterling	1	CD,TD
Jun	5	Worcester	10	CD,TD
	8	Chilmark	9	MP
	12	West Tisbury, Tisbury	5, 9	MP
	19	Barre Falls Dam, Barre	24	BWEST
	21	Edgartown	15	MP
Jul	16	Milford	3	RH
Aug	25	Easton	1	BC
Sep	12	Bolton	1	DSm

Northern Broken-Dash			
Jun	19	Wenham	1 FG
Jul	12	Milford	22 RH
	15	Gate 36 Quabbin Sherborn	10 13 DSm RH
	17	Petersham - Gate40, 36	15, 18 DSm
	17	Milford	10 RH,TD,BC
	18	Wachusett Reservoir	83 DP,DSm
Aug	25	Easton	3 BC
Little Glassywing			
Jun	4	Paxton	1 SBa
Jul	4	Sherborn Upton	5 11 BB CD,TD
	16	Milford	5 RH
	17	Truro	8 AR,BN
	18	Wachusett Reservoir	10 DP,DSm
	31	Grafton	1 CD,TD, DP,DSm
Sachem			
Aug	25	Easton	1 BC
Delaware Skipper			
Jun	2	Chelmsford	2 CD
Jul	4	Upton	9 CD,TD
	8	Uxbridge	4,3 RH
	13	Athol Paxton	9 2 DSm SBa
	15	Cape Ann	5 DS,CT
	17	Milford	4 RH,TD,BC
	30	Royalston	1 CK
Sep	12	Bolton	1 DSm
Mulberry Wing			
Jul	2 *	Milford	1 RH
	7	Milford	22 RH
	10	Lancaster Richmond	13 5 SBo TD,BC
	15	Sherborn Cape Ann	11 18 RH DS,CT
	17	Milford	21 RH,TD,BC
	26	Gate 40 Quabbin, Petersham	3 DSm
	31	Grafton	1 DP,DSm,TD,CD
Hobomok Skipper			
May	21	Worcester Newbury	1 1 CK SS
	27	Oak Bluffs	3 MP
Jun	3	BMBS	6 GH,MBC
	5	Worcester	17 CD,TD
	12	Longmeadow Gill	8 6 KP BWEST
	21	Edgartown	20 MP
Jul	11	Cape Ann	1 DS,CT
Zabulon Skipper			
Jun	26	Forest Park, Springfield	1 TG
Jul	31	Longmeadow	1 TG
Aug	7	FANST, Forest Park, Springfield	39, 14 TG,MBC
	9	Holyoke	1 MF fide RP
	12	Holyoke	1 RP
	22	Florence	1 TG

Broad-winged Skipper					
Jul	11	Wenham Falmouth	11 1	FG AR,vo	
	17	Milford	13	RH,TD, BC	
	24	Crane's Beach	9	CK	
	26	Petersham	12	DSm	
Aug	12	Cape Ann	5	DS,CT	
	29	Chilmark	1	AK	
Dion Skipper					
Jul	5 *	Richmond	8	TG	
	10	Richmond	3	TD,BC	
	14		2	NB4	
Black Dash					
Jul	3		23	FX4	
	4	Upton	4	CD,TD	
	8	Cape Ann	20	DS,CT	
	15	Sherborn Cape Ann	4 13	RH DS,CT	
	16	Milford	3	RH	
	17	Milford	1	RH,TD,BC	
Two-spotted Skipper					
Jun	26	Millis	3	BC,CD,TD	
Dun Skipper					
Jul	3	Edgartown	30	MP	
	5	Barre Falls Dam/Rutland State park	33	ML,SC	
	11	Edgartown	20	AK	
	17	Quabbin- Gate 36, 40	25, 10	DSm	
	17	Milford	31,7	RH, TD, BC	
	18	Wachusett Reservoir	28	DP,DSm	
	20	Charlton	11	RH	
	31	Grafton	6	CD,TD,DP,DSm	
Aug	23	Wenham	1	AR,TH,FG	
Dusted Skipper					
May	15	Sunderland Uxbridge	1 1	DC CD,TD	
	21	Worcester	4	ML,SC	
	22	Sterling BMBS	5 3	CD,TD GH,MBC	
	30	Stow	4	BW,vo	
	31	Uxbridge Barre	7 6	TD ML,SC	
Jun	2	Chelmsford	8	CD	
	20	Framingham	1	CD,TD	
Pepper and Salt Skipper					
May	21	BMBS	1	DP	
	22	BMBS	2	GH,MBC	
	30	Mt Greylock	5	TG	
Jun	5	Mt Greylock	7	JSp	
	6	Hubbardston Mt Greylock	1 1	CD,TD BWEST	
Common Roadside-Skipper					
May	11-16,28	Sunderland	max 2	DC	
	30	Holyoke, Mt Tom	1	CD,TD	
	31	Westfield, Sunderland	1, 2	TG	

Milbert's Tortoiseshell

Tom Dodd



This graph shows the flight period for Milbert's for 1999 only. The graph is in 3 horizontal sections, scaled 0-4, 4-20, and 20-200. The gray bars indicate the average maximum of individuals seen at any one location. The black line indicates the total number of observations for each period.

Milbert's Tortoiseshell had a terrific flight year. Records for 1990-1998 tallied only 17 individuals reported from 12 towns. This year, however, there were 103 individuals sighted from 31 towns! This species is hardly seen in multiple numbers. Again, this year there were numerous reports of two or more, and a new maximum high of 12, seen by Marj Rines. The flight was pretty well distributed over the entire state except the coastal plain and islands. Analyzing their distribution on a monthly basis shows no major southerly movement. Later sightings were in about the same geographic location as were the initial sightings, except maybe southern Worcester County. During the fall of 1998, there were 6 sightings -- a few more than usual. This might have been a precursor for 1999. In *Butterflies East of the Great Plains*, it states that this species over-winters in two stages; over-wintering adults that fly again in March, and chrysalids emerging in May or June. Were there increased sightings in June because of adults emerging from over-wintered chrysalids, or was it due to adults developed from eggs layed in late April? Contacts in Connecticut and Maine didn't report any major flights there, nor did NABA's web site have any unusual numbers reported either. Also, there was only one sighting in September this year. Why did they disappear again?

Butterfly Institute: Petersham 1999

Dave Small

One of life's highlights is the opportunity to share with others your enthusiasm for a particular pastime or subject. This opportunity came in Spring of 1999 when the Massachusetts Butterfly Club decided to send the Butterfly Institute on the road. The Athol Bird and Nature Club enthusiastically agreed to co-sponsor one Institute at Harvard Forest Fisher Museum in Petersham, with another being held at Massachusetts Audubon's Broadmoor Sanctuary in Natick under the lead of Bob Bowker.

The goal of the Butterfly Institute is to help students develop an appreciation for Massachusetts Butterflies in a friendly and fun atmosphere for learning. The emphasis is on watching live butterflies, their identification and behavior. The Institute began in 1996 when Chris Phillips, Massachusetts Audubon's former Sanctuary director at Broad Meadow Brook Wildlife Sanctuary in Worcester, teamed up with the Massachusetts Butterfly Club to present an introductory course on butterflies. The Institute continued for several successful years in Worcester under the watchful eye of Gail Howe, BMBWS education director. In an effort to reach a broader statewide audience, it was decided in 1999 to hold the Institute at various locations around the state, utilizing local support.

The format for the Butterfly Institute is a series of weekly lectures followed by a weekend day trip to a locality in Massachusetts designed to reinforce the evening lectures. Topics include butterfly identification, taxonomy, behavior, habitats, larvae, and population surveys. Speakers for the evening lectures are all veteran "Institute" staff and were chosen for their butterfly expertise and experience in Massachusetts.

The first job as Institute coordinator was to find students willing to make the 8-week commitment. Through the use of posters, newspaper ads, e-mail, and a little bit of brush beating, an exciting mix of individuals gradually began to assemble. They came, fourteen in all, from Sunderland, Hardwick, Princeton, Florence, and throughout the North Quabbin Region. I couldn't have asked for a more enjoyable, diverse group. The common denominator was a keen interest in the natural world and, for many, the fact that butterflies, unlike birds, sleep late on Saturday mornings. We were off.

The classroom sessions were all excellent with talented members of the Massachusetts Butterfly Club coming each week to share their knowledge and enthusiasm. The real fun came on weekends. With butterfly lessons fresh in our heads, we struck off to various locations to explore live butterflies. Benefiting from last Summer's drought, the weather was always sunny and warm with the butterflies being highly cooperative. Mourning Cloaks, Harvesters, Bog and Henry's Elfins, Early Hairstreaks, West Virginia Whites, and clouds of Tiger Swallowtails entertained us, as each week we moved around the central and western part of Massachusetts in search of new species in favored habitats. This year the Butterfly Institute will be moving to the Hitchcock Center in Amherst where Institute Alumni Tom Gagnon, John Bowe and Monica Jakuc will coordinate the program. In Central Mass the Institute will return to Broad Meadow Brook Wildlife Sanctuary where Gail Howe will again lead that program.

I encourage anyone who has not yet had the time to participate in a Butterfly Institute to give it a try. The many friends, some new and others that I have had a chance to reconnect with, make me long for warm spring and summer days. Grab your camera and I'll see you in the field.

**** Publishing this journal has become our greatest expense. We want to make it the best in content and appearance. Our income does not quite cover the printing and postage of *Massachusetts Butterflies* and our newsletters. We ask that members who are willing donate \$20., \$50., \$100. or whatever they can so that we may publish all the fine articles and illustrations that come in.

**** Letters and comments to the editor are welcome. Tell us of any aspects of the articles you enjoy, and about the appearance of *Massachusetts Butterflies*. What would you like more of? And please send in artwork and photos that are sharp and well contrasted. We shall appreciate your contributions.

Westport - South Dartmouth Fall Migration Watch, 1999

Brian Cassie

In the fall of 1999, Richard Hildreth and I oversaw a Massachusetts Butterfly Club-sponsored program designed to document butterfly migration in the coastal Westport-South Dartmouth area, with particular emphasis on Gooseberry Neck Reservation and nearby Allen's Pond. Richard and I (especially Richard) visited the area on a number of occasions from early September to early November. On many trips we were accompanied by various members of the Massachusetts Butterfly Club. In addition, other club members, including Stan Bolton, Cathy and Tom Dodd, Carl Kamp, and Alison Robb, made their own trips to the area and sent in the results of their field work. The total number of field hours for all days was 109, a significant expenditure of time and effort.

For the record, field work was done on twenty-one days: September 1, 4, 9, 11, 12, 14, 18, 19, 20, 24, 25, 26, 28; October 2, 6, 7, 8, 10, 15, 26; and November 5.

We amassed quite a lot of detailed observations on Monarch flights, including flight direction (given particular wind directions and speeds) and flight strength. Richard made some excellent maps of the various flights. (See *American Butterflies*, Spring 2000, for an article by Richard Hildreth and Brian Cassie.) Suffice it to say that we, all of us at various times, were treated to some very fine migratory flights of butterflies, particularly of Monarchs, the flights of which were numerically superior to all other species by a great factor. The largest Monarch flight we witnessed was on September 18, when we calculated that 14,000 Monarchs flew west along the shore in 5 hours (from 11:00 a.m.-4:00 p.m.). Other days with more than a thousand Monarchs passing included September 25 (2568), October 2 (1430), and October 6 (1557).

It was perfectly easy to tell when Monarchs were migrating, as the bulk of the population flew purposefully along in a given direction. Their flight tended to be steady and comparatively low to the ground. With an increase in the wind speed, the Monarchs flew even lower, at times within a foot of the ground.

Other butterflies migrating west along the coast here were Question Marks, Mourning Cloaks, and Red Admirals. We had hoped to see quite a lot of these three species, as they were numerous for at least a 2-day period in the fall of 1998. In fact, we saw few of them,

with totals of 18 Question Marks, 27 Mourning Cloaks, and 11 Red Admirals. These species did not migrate in a leisurely manner, as did Monarchs, but preferred to zoom along at a rapid clip. They flew at about the same height as the Monarchs. Besides the four species mentioned above, we found 23 others — some probably moving south, some probably moving north, but none in unambiguous migratory flight. The most unusual butterflies were Cloudless Sulphur (Sept. 9 - Oct. 2), Little Yellow (Sept. 25 - Oct. 2), White M Hairstreak (Oct. 2), Variegated Fritillary (Sept. 24 - Oct. 8), Painted Lady (Sept. 19 - Oct. 8), Common Buckeye (Sept. 20 - Oct. 10), and Fiery Skipper (Sept. 26).

In addition to counting over 20,000 butterflies, we attempted to keep track of migrating dragonflies and birds, too. Dragonfly migration was comparatively weak, but still interesting to those of us just starting out in the field. We identified six species in migration and another, the Seaside Dragonlet (the only salt-water dragonfly), along the salt marshes at Allen's Pond. We found about a dozen dragonflies per day, on average. Bird migration was variable but on the whole quite good. We identified 138 species, the best being a Sandwich Tern (found by Blair Nikula on Sept. 12) and an Ash-throated Flycatcher (found by Richard Hildreth on Nov. 5).

The reptilian highlights of the migration watch were three Leatherback Sea Turtles which washed up there in October. Richard and I made measurements and even tried to flip one of the beasts over, but that leviathan would not budge.

We found out a lot of good things by doing this project, especially that it is a great deal of fun. The Massachusetts Butterfly Club will be on the dunes again in the fall of 2000. You are cordially invited to come along.

President's Message

Tom Gagnon

As Acting President of the Massachusetts Butterfly Club, I want to encourage you to attend one of our meetings, participate in one or more of our many field trips and report your sightings to our record compiler. Please encourage others to join our organization and spread the word about our Butterfly Institutes. Hope you all have a wonderful spring and summer and I hope to meet many of you in the field this year.

Much Ado About Gossamer Wing Nectar Oases

At Horton's Camping Resort in North Truro

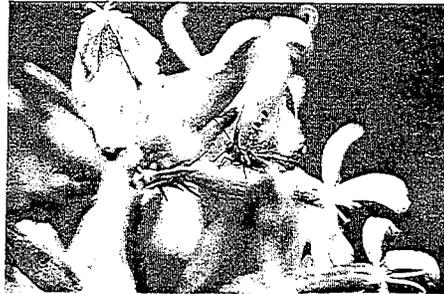
Tor Hansen

Much ado about Lycaenid nectar oases? Yes indeed, if you speak from the viewpoint of *Lycaena phlaeas* — an American Copper! Blessed in spritely colors but apparently not so blessed by the conventional rule of tongue, several Lycaenid species that inhabit the rolling grassy meadows and pine-oak woodland fringe of Horton's Camping Resort in North Truro can overcome a compelling shortage of access to deep seated nectaries. In so far as their inherited tongues are at first unable to reach across the length of long calyx and bract, and thus governed by the dominant gene for shorter nectar-sucking proboscis, these gossamer wings none-the-less discover an ingenious shortcut and the nectar is theirs!

Certain coppers and hairstreaks can quench their thirst by accessing an alternate nectar oasis, Bouncing Bet, *Saponaria officinalis*, abandoning their old faithful milkweed blossoms now withering as the June-July drought ensues. And by enacting a clever adaptation on an evolutionary shortfall, they amend the rule that only long tongues can secure energy-rich nectar.

To this resourceful gossamer wing eager to replenish vanishing energy reserves often burned too quickly, such as by bolting away from the ominous outstretched chelicera of a predatory crab spider, or being bumped off the blossom by an aggressive wasp, access to the fructose nectary is difficult to say the least.

The Flame Copper has learned to approach the nectar well from the side instead, whereupon *L. phlaeas* pierces the blossom side-wall with its stout drill-like tongue.



Also known as the American Copper and Little Copper, *Lycaena phlaeas* is a spirited dasher that flashes vivid coppery

orange hues on a gray background when roosting with wings open, showing notable blue spots on the hind wings, revealing a bold orange margin more aflame than those of cousin coppers, and resembles a spot of brush fire when flitting close to the ground. But with wings folded the monomorphic imagos blend into the pale colors of sandy soil as the orange forewings often fold under the pale dark-spotted hind wings edged in scalloped fire. Red marginal lines suggest flames licking in the tawny-beige and blue-stem grasses of the glacial outwash plain.

The Flame Copper is by far the most common gossamer wing (family Lycaenidae) across Cape Cod and Massachusetts. It can be triple-brooded here, and is widespread across Europe, North Africa, and temperate Asia, Nepal, and Japan. It prefers open sandy meadows where heath and dune intermingle with pine-oak woodland fringe, where Sheep Sorrel, *Rumex acetosella*, and Curly Dock, *Rumex crispus*, (a sturdy wild oat), abound, hosting gumdrop-like green- and red-segmented caterpillars that dine on shoots, succulent buds, and flower tips. Flames can be expected at roadside shoulders, along bike trails, and in divided highway islands since Sheep Sorrel is widespread and among the heartiest of pioneer plants thriving in sandy soil.

Many species have evolved long tongues to extract nectar hidden deep within the blossom, some tongues almost as long as the body itself: For example hawkmoths (family Sphingidae): the nocturnal Laurel Sphinx, *Sphinx kalmiae*, and the diurnal Hummingbird Sphinx, *Hemaris thysbe*, a fleet busybody perfunctorily zooming to almost every blossom in sight, including impatience in the domestic flower garden. At first easily mistaken for the Ruby-throated Hummingbird, it hovers like a helicopter while nectaring, gracing the garden in shades of gold and burgundy, and is no doubt a very effective steward of cross-pollination.

Also, diverse skippers (Hesperiidae) are equipped with exceptionally long proboscises. Five species are established at Horton's: The European, *Thymelicus lineola*, the Hobomok, *Poanes hobomok*, the Northern Broken Dash, *Wallengrenia egeremet*, the Dun, *Euphyes vestris*, and the Silver-spotted, *Epargyreus clarus*, Skippers.

Gossamer wings are especially noticeable here at Horton's, most likely the single most biologically diverse butterfly mosaic on Cape Cod outside of the Crane Wildlife Management Area in Falmouth. Nestled in a dry meadow atop the undulating glacial outwash plain and surrounding pine and oak woodland, Horton's forty-acre camping resort offers an exciting medley of habitats for assorted wildflowers, plus owner Bob Horton's own butterfly garden, and is host to some 35

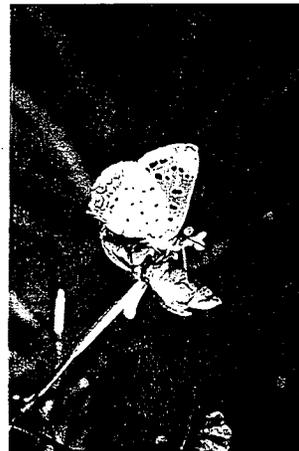
species of butterflies both resident and migrant, and perhaps ten species of skippers.

Butterfly diversity is enhanced here by the sheltered but seaside location, and by the exceptional draw of unclipped Privet bushes and wild patches of Cow Vetch, Perennial Pea, hawkweed, Opuntia Cacti, Oxeye Daisy, and Queen Ann's Lace. High nectar yield plantings such as Santalina, Buddleia, Red Clover, and Liatris in the butterfly garden can enhance the butterfly draw and provide a steadfast oasis segue linking more assorted vital allopatric mosaics.

Additional campsites have opened up new light gaps, with young Sassafras saplings, deciduous hardwoods, forming opportune fringe for pioneering lepidoptera. Their mitten-like leaves provide long-standing refuge to the opulent Spicebush Swallowtail, *Papilio troilus*, caterpillars, clinging to silken mats spun in the curl of a broadleaf and camouflaged leaf-like green-yellow in a broadleaf curl. Adults are frequently seen nectaring at the milkweed knoll, and in the surrounding Bouncing Bet. Equipped with long tongues, Spicebush imagos can easily reach the nectar wells inside Bouncing Bet blossoms, and thus utilize its nectar when milkweed and other nectar sources are on the wane.

Since Spicebush, *Lindera benzoin*, does not grow on Cape Cod, nor in most of Massachusetts, larval *Papilio troilus* depends heavily on succulent Sassafras. If monster-sized eyespots are not enough to ward off hungry predators, when provoked the larva rears back and a fleshy osmaterium protrudes like long horns of certain cattle from the back of the head and first body segment, stinking of prothoracic fluids having a musty odor helpful in deterring predators.

Other nectar oases that attract assorted gossamer wings include Fireweed, *Epilobium angustifolium*, that thus far in my search across Cape Cod is found only along the grassy meadow-woodlandfringe of the Herring River in Wellfleet, where it nectars chiefly the Flame Copper and possibly the Broad Wing Skipper, *Poanes viator*, that thrives along the brackish marsh edges thick with Phragmites reeds, although Red Clover primarily nectars *P. viator* here.

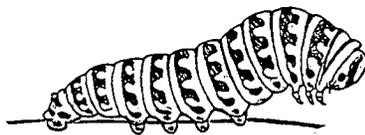


Flame Coppers, however, generally nectar at Fireweed in the conventional frontal posture, positioned atop the corolla and facing away from the main stem, or facing head first into the trumpet, whereas only rarely have I seen them piercing the calyx side-wall of Fireweed in full bloom (confirmed in photo).

Yet another resourceful Lycaenid, none other than the Coral Hairstreak, *Harkenclenus titus*, enjoys tenure at Horton's milkweed oasis. As prolonged drought parches the hilltop-crowning milkweed down to the last savory drop, *H. titus* harkens to what mystical voice to find a Bouncing Bet? Do Lycaenids decipher with keen smelling sensory receptors in the antennae, labial palps, or in their tarsal toes? Or is it primarily sight in those marvelous compound eyes that keys the instinctual flight to the pink and white bouquet? Also given a shorter tongue, the Coral Hairstreak likewise positions its proboscis to pierce the calyx side-wall of the blossoming Bouncing Bet, engineering a means to cross a formidable threshold to survival. We might find a thinking process at work in these Lycaenids (a behavioral adaptation). Further study is needed to confirm multiple alleles governing short tongue size, which is more common to Lycaenid butterflies than to, for instance, longer-tongued skippers (family Hesperidae).

Be up and about like the early birds for there are great distances to traverse between the many Cape Cod butterfly mosaics. Spring species are flourishing wherever nectaring oases are burgeoning. Any reliable sightings are worth reporting to my residence in Twinefield, North Truro,* such as the Banded Purple likely along Old County Road in Wellfleet, and the evasive Variegated Fritillary known near Hache's Harbor in Provincetown. Buddleia is bringing in many newcomers, and on July 9, 1999, a huge Buddleia in Wellfleet drew another Great-spangled Fritillary and at last one Milbert's Tortoiseshell.

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Black Swallowtail Caterpillar

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