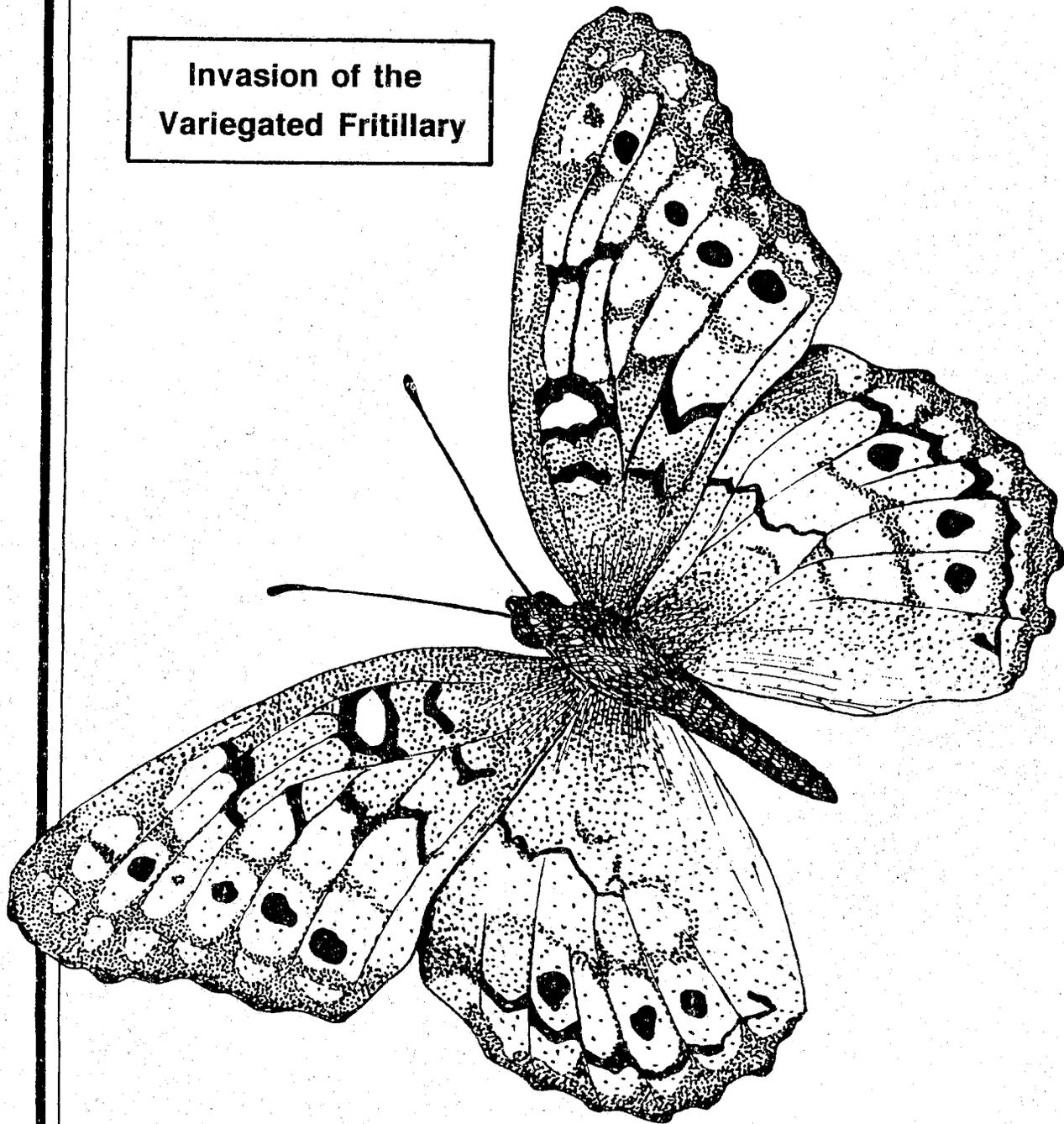
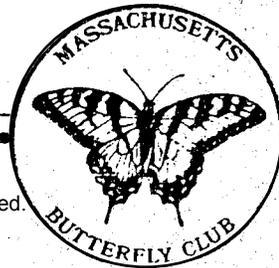


Massachusetts Butterflies

Invasion of the
Variegated Fritillary



November 1999 No. 13b



Massachusetts Butterflies is an occasional, usually semi-annual, publication of the Massachusetts Butterfly Club, a chapter of the North American Butterfly Association. Membership in NABA- MBC brings you *American Butterflies*, *Massachusetts Butterflies*, *Butterfly Garden News*, 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

Officers of the Massachusetts Butterfly Club

President- Richard W. Hildreth
135 Washington St., Holliston 01746-1363 (508) 4295085
Vice-president-East- Sharon Stichter
108 Walden St., Cambridge 02140- 3330 (617) 5474413
Vice- president- West- Tom Gagnon
175 Ryan Rd., Florence 01060- 2443 (413) 5846353
Secretary- Barbara Walker
33 Woodland Rd., Auburn 01501- 2149 (508) 7548819
Treasurer- Lyn Lovell
198 Purchase St., Milford 01757- 1120 (508) 4737327

Massachusetts Butterflies Staff

Editor- Alison Robb
Box 186, Woods Hole 02543 (508) 5402408 alisonr@capecod.net
Associate Editor- Mark Fairbrother
129 Meadow Rd., Montague 01351 (413) 3672695 mfairbro@k12.oit.umass.edu
Records Compiler- Tom Dodd
33 Mechanic St., Upton 01568 (508) 5293392 thordodd@aol.com

Submission of Articles and Butterfly Records

We encourage all members to submit articles, art work and butterfly sighting records for **Massachusetts Butterflies**. Results of the 4th of July counts and your butterfly sightings for the year should be send to Tom Dodd. All other material should be sent to Alison Robb.

About the Cover

The drawing on the cover (by RW Hildreth) shows the **Variegated Fritillary**, *Euptoieta claudia*. This species is an invader from the south, reaching Massachusetts annually, but never overwintering. This year the invasion involved impressive numbers of butterflies which reached northern areas such as eastern Maine, far beyond their normal range.

Western Massachusetts 1999 Season Highlights by Mark Fairbrother

This was a year of odd ups and downs, heat and drought, and finally a stimulating influx of southern species.

Pipeline Swallowtail was reported again from it's area strongholds- Tom Gagnon's backyard and the Northhampton Community Gardens (NCG). The Yellow swallowtails were about normal or a little low, while the Black Swallowtails had a good year after two or three awful ones.

Both the West Virginia and Mustard White were out by the last week of April in locations from Holyoke to Lennox. Mustard Whites had not only a second, but a third brood at the end of August in the Lennox area.

After years of searching, Roger Pease finally struck "paydirt" in early August when he found a colony of **Little Yellows** in a field in Holyoke. Seen by numerous people over the next two months, they could still be found well into October after several heavy frosts. By mid-September Little Yellows turned up in Whately, Sunderland, and Florence.

The elfins put on a strong showing this year. Two hours of driving along sand roads in the Montague Plains produced 58 Eastern Pine Elfins on only about one quarter of the possible roads. The, now annual, trip to Tom Swamp, in Petersham, once again produced **Bog** and Henry's Effin, and Brown Effin turned up in numerous places.

American Coppers were in good, but not record ,numbers through all three flights. Bog Copper numbers were way down for another year.

Harvester was another species which, for no apparent reason, was seen in a number of locations across our area, sometimes allowing spectacular photo-ops.

While numbers of most hairstreaks species were average or below, Gray Hairstreaks were almost common this year, starting in April and with high numbers seen on several 4J counts and field trips. they continued to be seen right up to frost. Mt Greylock hosted a good number of Early Hairstreaks.

Variegated Fritillary arrived in our area in July, and continued in spots like the NCG through the rest of the season.

The angle wings were somewhat sparse, with the glaring exception of **Milbert's Tortoiseshell**. This species popped up all over, from the slopes of Mt. Greylock to the Connecticut river valley. Numerous observers counted their life Milbert's this year. Both of the Ladies were scarce, while Common Buckeye and Red Admiral were widely reported.

Monarchs had a good year in the region, topped off by a very strong fall migration.

A **Long-tailed Skipper** was seen in a flower garden in Agawam, while Wild Indigo Duskywings turned up in numerous and unexpected places. **Fiery Skippers** started turning up in mid-July and continued to be seen here and there right up until the first frost. Another population of Dion Skippers were found; these were in Richmond. This species is probably present in suitable habitat throughout the Housatonic river valley in Berkshire County.

Eastern Massachusetts 1999 Season Highlights by Tom Dodd

Another great butterfly season has flown by. This was a phenomenal year for **Milbert's Tortoiseshell**. I can count the number of personal sightings for this species on one hand in the last 10 years. They appeared in early April through July and were more common northerly, but seen as far south as Uxbridge. Multiple individuals were seen at a few locations this year. Marj. Rines gets the prize for the most seen at one site. She saw 7-10 at Dunback Meadows on July 12. After July, they just disappeared.

Single specimens of **Little Yellows** flitted their way north this year. They were seen at four coastal locations. There have been no reported sightings in Massachusetts since 1993.

Fiery Skippers have made almost a yearly appearance at our MBC September meeting at Gloucester. This year, they showed up in droves. On September 19, at the annual meeting, there were a total of 16 Fiery Skippers sighted at a few locations in the Gloucester/ Rockport area. There were a few other scattered reports from Milford, Halifax, and along the south shore during July and August.

A single **Sachem** was observed by Brian Cassie on August 25 in Easton.

Variegated Fritillaries had obviously found their hostplant at the Wenham canal, where 27 were seen on August 31. They arrived early this year at Martha's Vineyard with one seen on May 22. They were more common this year than most throughout the eastern part of the state. There were 60 reported on the North Essex 4th of July count.

Pipeline Swallowtails were reported from Martha's Vineyard, Provincetown, Gloucester, Westport and Lakeville. Usually, we get one or two sightings each year. Robin Gross' Lakeville residence hosted 17 caterpillars on their pipevine plants. The caterpillars are dark brown with some reddish dots in each segment and long tubercles on their head. They feed in groups on the underside of the leaves. I wish I had seen them!

The MBC conducted a Migration Watch along the eastern coast (mostly at Westport). A lot of information was gathered, and many members participated. The results were different than last year's large flight of Mourning Cloaks and Question Marks. This year was punctuated by a large flight of Monarchs flying westerly along the dunes at Horseneck Beach (and through the parking lot). On September 18, an estimated 14000 flew through between 11:00 AM and 4:00 PM. It was exciting!

1999 Fourth of July Butterfly Counts

Count Name	Abbrev	Compiler	Count Date	# of Participants	Party Hours	Party Miles	Total Counted	Total Species
Northern Berkshire County	NBerk	M Fairbrother	Jul-14				1559	45
Central Berkshire County	CBerk	T Tynning	Jul-24	8	30.75	82	2388	41
Southern Berkshire County	SBerk	R Laubach	Jul-17	9	31.25	153.5	2396	41
Central Franklin County	CFran	M Fairbrother	Jul-10				2222	55
Northern Worcester County	NWorc	G Howe	Jul-11	20	74.5	167.1	4610	54
Concord	Conco	R Walton	Jul-10	8	12	90 (73 car) (17 foot)	753	42
Foxboro	Foxbo	B Cassie	Jul-3	20	68	230 (186 car) (44 foot)	3551	54
North Essex	NEssx	B Speare	Jul-18	10	17	15.5	708	36
Bristol County	Brist	M Mello	Jul-18	11	5.25	3 (3 foot)	225	21
Falmouth	Falmo	A Robb	Jul-11	12	16		636	36
Outer Cape Cod	OCape	J Sones	Jul-17				853	31
Martha's Vineyard	MVine	M Pellikan	Jul-11	10+1 garden	26.5	90 (75 car) (15 foot)	2783	36

Common Name	NBerk	CBerk	SBerk	CFran	NWorc	Conco	Foxbo	NEssx	Brist	Falmo	OCape	MVine
Black Swallowtail	12	55	40	15	15	4	8	4		1	3	9
Giant Swallowtail			1									
Eastern Tiger Swallowtail			8	12	161	17	31	9	2	11	1	33
Canadian Tiger Swallowtail	6											
Spicebush Swallowtail		4	1	41	48		8	3	1	9	8	41
Cabbage White	140	101	145	104	161	32	311	21	3	36	182	297
Clouded Sulphur	272	195	544	222	134	41	206	13	2	35	10	35
Orange Sulphur	68	138	174	45	32	24	42	4	1	37	9	654
Little Yellow										1	1	
Harvester	1			1	1							
American Copper	3	5	43	190	1415	50	823	73	27	124	80	597
Bronze Copper						1						
Bog Copper				25	6	3						2
Coral Hairstreak		5	8	7	2	2	74	2		15	21	11
Acadian Hairstreak		2			5		7					
Edwards' Hairstreak					3		19					42
Banded Hairstreak	5	1	1	24	5	2	8	1		1		
Hickory Hairstreak			1		1		1					
Striped Hairstreak	5			1	5	2	5	1				3
Southern Hairstreak							2					
Juniper Hairstreak											3	1
Gray Hairstreak				16	48	8	46	6	5	38	10	25
Eastern Tailed-Blue	8	5	15	39	25	16	93	7	2	21	2	51
Summer Azure	66	21	9	30	43	33	61	14	1	1	10	3
Variiegated Fritillary		1	6			2	2	60				4
Great Spangled Fritillary	52	27	30	120	140	26	202	4	7	2		
Aphrodite Fritillary	34	17	4	52	34		35	1				
Atlantis Fritillary	156	23	7									
Silver-bordered Fritillary			5	7	66	13	6	3	3			
Meadow Fritillary			3	9								
Pearl Crescent	45	867	414	125	504	43	59	290	30	64	167	22
Baltimore Checkerspot	3	4	2	84	14	1	970			1		
Question Mark	1	5	8	3		2	1			1	1	14
Eastern Comma	6	3	4	5	1							
Compton Tortoiseshell												1
Mourning Cloak	4			2	2							1
Milbert's Tortoiseshell	6	7	1	13		1		2				
American Lady	11	6		4	19	4	8	5	1	1	5	13

1999 Fourth of July Butterfly Counts (continued)

Common Name	NBerk	CBerk	SBerk	CFran	NWorc	Conco	Foxbo	NEssx	Brist	Falmo	OCape	MVine
Painted Lady				1								
Red Admiral	1	3	3	6	3		4	2		3		26
Common Buckeye	1			1				1				
White Admiral	14	2		2								
Red-spotted Purple	10	5		3	2		2	2				1
Viceroy	2	50	6	19	23	1	10	3				
Northern Pearly-Eye	31	4		6	3	2	1					
Eyed Brown	31		3	3		35	3					
Appalachian Brown		6	2	18	3	8	2	1	11	3	6	38
Little Wood-Satyr		1		2	7	8	22	4		3	4	67
Common Ringlet	1	20		3	1		3	2	1			
Common Wood-Nymph	199	386	631	30	42	107	92	39	97	105	32	376
Monarch	134	131	138	128	384	29	11	30	1	26	35	190
Silver-spotted Skipper	27	10	23	422	506	69	61	29		2	50	19
Hoary Edge				2	4		4					
Southern Cloudywing				3	2		5					
Northern Cloudywing				3	2		2			4		
Horace's Duskywing							5			1		3
Wild Indigo Duskywing				13	69	1	17	11	15	54	3	2
Common Sootywing		1	9	9	11	24	2		1	1		
Least Skipper	1	11	2	2	2		4	5			1	4
European Skipper	28		7	5	23	3	83					
Peck's Skipper	38	78	18				1	1			12	
Tawny-edged Skipper	1	8	2	4	10	1	2			3	4	14
Crossline Skipper	3			24	19	5	29			5	6	13
Long Dash	2				11	1	1					
Northern Broken-Dash	11	90	6	92	220	10	31	3	13	10	39	50
Little Glassywing	2		2	42	39	11	47			9	51	
Delaware Skipper	1	6	2	38	52	22	36			1	1	
Mulberry Wing	1	13	13		6	60	12					
Hobomok Skipper				2	1							
Broad-winged Skipper		10			2			13		1	54	1
Dion Skipper	2											
Black Dash	3			30	20	12	23					
Dun Skipper	105	59	55	106	253	17	8	39	1	5	18	119

A highlight of the counts was a Giant Swallowtail - a very rare find in Massachusetts! The Giant Swallowtail was found by Christyna Laubach and Kate Harding on July 17 during the Southern Berkshire count. It had been observed for 10-15 minutes visually, and through binoculars, from 15-20 feet away. Christyna wrote a sight report describing the observation in detail. They noted its large size, and when viewed from below, that the orange dots along the hindwing margin, common in a Tiger Swallowtail, were absent, while the forewing below was "... characterized by yellow, solid U shaped spots". When its wings were spread, they saw a "... bold yellow horizontal mark on a faded blackish or dark background". They also reported that Prickly Ash (a larval foodplant of the Giant Swallowtail) was found nearby. This is a fantastic find! The last recorded Massachusetts sighting was in 1895! They were somewhat more common in the 1880's, with six sightings across the state. Recent sightings include reports of a recent colony in Meriden CT, as stated in Butterflies Through Binoculars. This is only about 50 miles away from this sighting. The New York City Butterfly Checklist reported one on Long Island on September 3, 1990. A search of the NABA's internet web site for the northeast this year, showed a number of sightings in the interior US. In Madison WI, one or two individuals were seen from July 24-28. There were records from Forest Hills, PA on Aug 10 and 28. Finally, Point Pelee, ON had a whopping 63 reported on Aug 8.

Two Little Yellows were found on separate counts (Falmouth, July 11 - Outer Cape, July 17). These followed a sighting of a Little Yellow on July 8 by Matt Pelikan - in his yard. Unfortunately, Matt couldn't entice it to stay until the Martha's Vineyard count that was held three days later. The one reported on the Falmouth count was seen by Alison Robb, Stan Bolton, and Madeline Champagne. Photos were taken by Stan. There was no additional information of the sighting on the Outer Cape.

Field Notes

by Richard W. Hildreth

When you look over the **season summary** in *Massachusetts Butterflies* or read an article such as the **definitive destination** series in *American Butterflies*, it is important to realize that the authors were able to produce these articles because someone got out and observed butterflies and **wrote down** (or somehow recorded) what they saw.

The purpose of this article is to encourage you to routinely take field notes. The field note topic really has two parts; actually recording information in the field and doing something with the information later. The focus of this article will be about the **essential first step**, collecting the information in the field.

In some professions and disciplines, note taking is a deadly serious and exacting business. In the industrial research laboratory, note taking is done in a very rigorous and exacting way so that patents resulting from the research can be legally defended. Land Surveyors are required by law to collect their information in a very definite way. In the academic world, professors sometimes require the graduate students to record data with special ink in special notebooks, etc. Fortunately, most butterfly enthusiasts are amateurs [in the best sense of the word] and have only self imposed requirements. For the butterfly enthusiast, about the only requirement to be expected of field notes is that they contain material so **you** can recall, in a **reliable** and **detailed** way, what was seen in the field. While the modern phrase "what works for you" should mostly guide your field note taking, there probably are some better and worse ways to proceed. I will offer a few tips which I find useful.

- Probably the most important "tip" is to get in the **habit** of always making field notes regarding things you see in the field. When you have accumulated a substantial quantity of field notes and learned how to use them, you will find them to be a source of considerable pleasure and interest. You will also have something useful and interesting to share with others. You will have the "raw material" to use to make you the author of one of those interesting butterfly articles.
- To get started you need only something to write on and something to write with (or possibly some electronic device or a hand held tape recorder). To write with, a mechanical pencil with .5 MM lead is a good choice; it allows you to write in small, neat fashion. To write on, I recommend a small loose leaf note book. I like a small book because it is easy to carry in your pocket. I like a loose leaf book because, each day you can easily remove your observations and store them in a safe place. If you accumulate many days or even months of observations in a notebook and then lose it, the loss is devastating. Always put your name, address and phone number in your notebook so if it is lost, someone may return it to you. Water resistant paper, such as the *Rite-in-the-Rain* type is a good idea. Develop a standard format for taking the notes and stick to it; Notes taken in a standard, organized way are much easier to use later on, especially if you are going to enter them into the computer.
- Depending on what you find, you may collect a great variety of information, but some things are basic and always essential. These include Date, Time, Location and the identity of the observer(s).

Date: I like to write the date 12 July 1936. Written this way there is no doubt about what is day, month and year.

Time: Time of day is a very important item to record. (more about this in the next section)

Location: Minimum in this category is local political entity and state, e.g. Milford, MA. You probably will want to also identify in more detail geographically each specific site you visit, e.g. Cedar Swamp Pond-west, Louisa Lake, etc. You also will probably want to mention something about the habitat you found the butterflies in, e.g. wet power line, marsh, acid bog, weedy field, etc.

Observer(s): This one is usually easy, it's you. Possibly others are involved, be specific.

It is important to quantify your effort. The time spent and the distance traveled (or area searched) need to be recorded so that your butterfly observations can be put into the proper context of effort expended to make them. What I like to do is record the time that I begin a traverse to search for butterflies and the time when I finish, e. g. 0926-1145. This lets me know the time period when the observations were made and it lets me know the amount of effort in time expended, 2.3 hours. I would also record that I walked 3.1 miles. I like to use the Military (24 hour) time system. This system prevents any confusion between Am and PM. Be specific; it's just as easy to read and record the exact time from your watch, 0936, as to write a "rounded off" 0930. Distance measurements are sometimes a bit more difficult. It's easy in your car, just read the odometer, e.g. 16.5 miles. Distance on foot can be "scaled off" a map. Some quite accurate electronic pedometers have been made for joggers; one of these gadgets could be used to easily measure your distance on foot.

Weather conditions certainly have a significant effect on butterfly activity. Your field notes should include information about weather conditions. Your notes should include information regarding temperature, wind (direction and velocity), precipitation, and sky cover.

Temperature: Be specific. Relative terms such as warm or cold are not very useful; 45 degrees F on a December bird count would be warm, on a butterfly count in September it would be very cold. Temperature should be measured, preferably in the field with a pocket thermometer.

Wind: Direction from which the wind is coming should be recorded. Wet your finger and hold it up to the wind, it will get coldest on the windy side. If you know your directions at your site, it's easy. If you are at an unfamiliar site, you will need a simple compass to tell the direction. One of those tiny key chain compasses will "do the trick". Wind velocity also needs to be recorded; that's not so simple. Wind velocity can be estimated using visible signs by the Beaufort Scale [contact me for a copy]. Simple pocket wind velocity meters are available, the sort used by the sailing folk are the best for convenient field use.

Precipitation: If there is any, record what kind. You probably won't be doing much butterflying if there is any significant precipitation.

Sky Cover, how cloudy is it. This you have to estimate. I like to use the system where total cloud cover is called 10/10 and no cloud cover is called 0/10, etc.

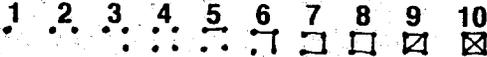
Of course, the really important thing to record is the **Butterflies** you find. Some butterfly related topics to note are, a list of the species found, number of each species,

the "condition" of the butterflies, and what the butterflies are doing.

List of the Butterfly Species. Figure 1 shows a specimen page of butterfly field notes. The observations were made at a single site in Northbridge, MA, one day late in the season. The butterflies are listed in the order that they were found. This assumes, of course, that you are confident about the identity of butterflies you have seen. What if you aren't so sure? Uncertainty about identification falls into two categories. If you are a beginner, you will find some butterflies which you don't know the identity of even though you are able to see them well. In this case you can record them as unknown A, etc. For these "unknowns" you need to get busy and describe them in as much detail as possible in your notebook, make a careful sketch, take a photo, etc.-- possibly you will be able to look them up. Another case involves the situation where the butterflies don't cooperate and you are unable to get a close, careful "look". An example is, you see several large fritillaries flying rapidly around along the power line, you never get a close look. In the Summer in Massachusetts both Aphrodite and Great Spangled Fritillaries fly together in the same habitat, unless you get a close view you can't safely separate them. What do you do? Call them Fritillary sp. (large).

Number of Butterflies. Your butterfly records will be much more interesting and valuable if you **count** the butterflies you see. I use the simple counting system shown below. Figure 1 shows this counting system in practice.

Counting:
I like to use the old forestry tally system of counting as shown below.

1 2 3 4 5 6 7 8 9 10


With this system, at the end of the day, you can easily make the final tally counting by tens.
If you count, all at once, a large number of butterflies, e.g. 169 Cabbage Whites, then you can write 160 

Condition of the Butterflies. Once the butterflies have been identified and counted, you will want to look at them carefully and note other details. One interesting thing to pay some attention to is their "condition". When butterflies first hatch, they are essentially perfect with every scale in place. As time goes on, the scales get worn off and they become dull, sometimes "clear-winged" because all the scales have been removed. This wear is more or less continuous, so the degree of wear is some rough measure of "age". I have constructed a scale of wear, given below. It is based on my experience and may not be altogether useful to anyone else. However I think it is worthwhile to attempt to estimate, in some way, the condition of butterflies you see (well). In Figure 1, I have applied my "wear scale". What it appears to show is that two of the species found, Viceroy and Eastern Comma, were present as a "new" fresh hatched and an "older" generation. 5 of the species found were probably newly hatched.

Butterfly "Condition"

Symbol	Condition
E	Excellent (Fresh hatched)
G	Good (very slight amount of wear)
F	Fair (considerable wear)
P	Poor (very worn, sometime nearly all scale gone)
N	Nicked (pieces of the wings missing, usually the result of bird attack, not necessarily related to any "wear" category)

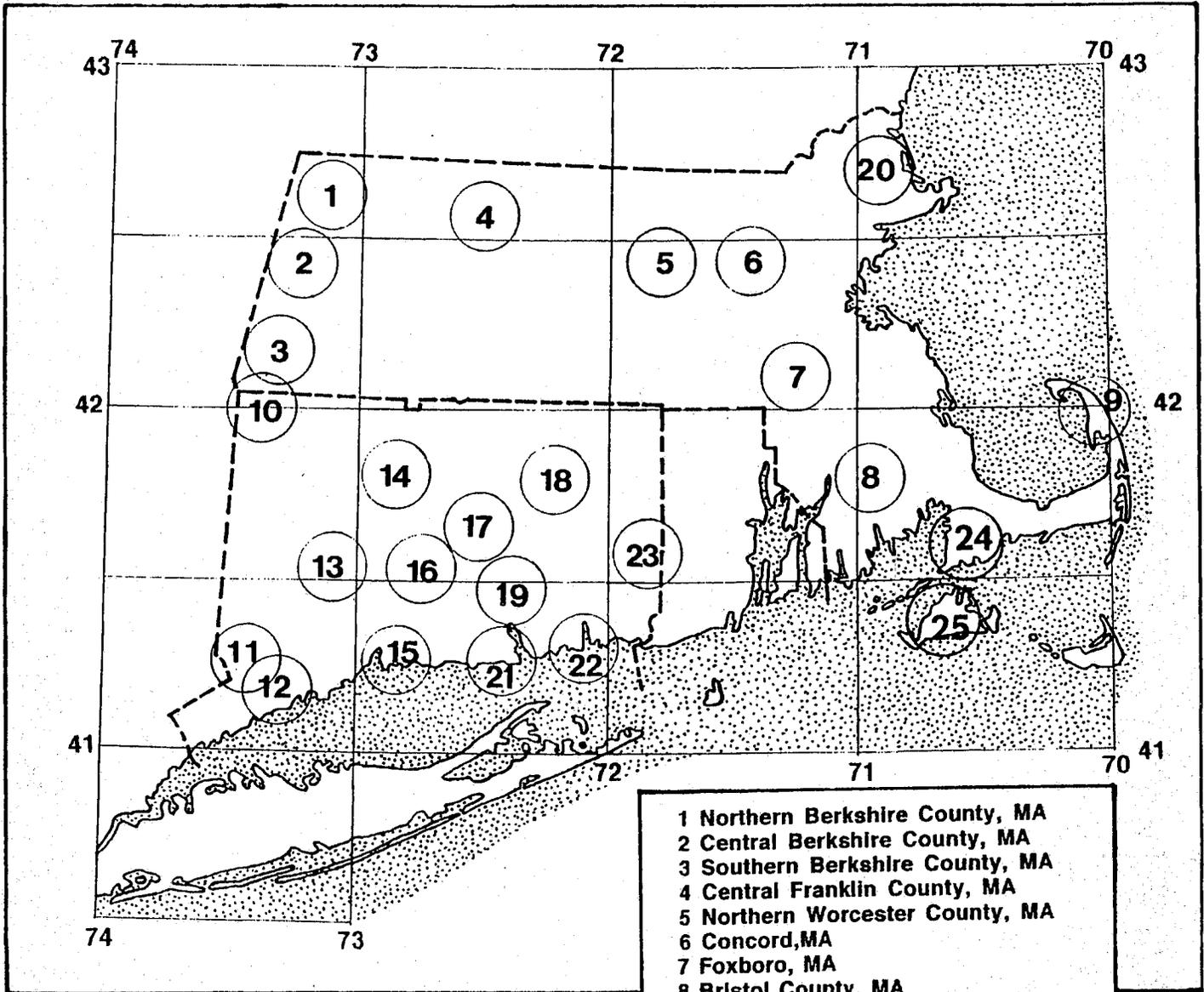
What the Butterflies are doing. As we begin to look very closely at butterflies we will see them engaged in all sorts of behaviors and situations; we will see them being caught by predators such as Crab Spiders or Ambush Bugs, we will see them laying eggs, we will see them mating, we will see them nectaring at flowers, etc. We will want to make field notes about all these interesting observations. Since nectaring at flowers is one of the more common of these behaviors you will see, I will show how I like to record it. In Figure 1, three of the butterfly species which I found, were nectaring on flowers. I wrote the names of the nectaring plants at the bottom of my page and assigned a symbol for each plant. I used that symbol in my butterfly tally to indicate that the butterfly was nectaring on that plant. The Leonard's Skipper was nectaring on Aster and Joe-Pye Weed. The Monarch and American Lady were nectaring on Goldenrod sp.. This very simple system can be used to record all sorts of behavior.

Besides your written field notes, you will probably from time to time, collect other types of information regarding butterflies. You will take 35 mm slides, you will make a butterfly video, you may make a nice butterfly drawing on your sketch pad, you may collect some caterpillars for rearing, etc. It's important to cross reference all these other types of information with your regular field notes.

Field sketches are important. Some information you wish to record is best done with a field sketch. If you see a butterfly you can't identify or a nectaring plant you don't know, a simple field sketch, made right of "the spot" will probably contain enough information to help you look it up later. These sketches don't have to be great artistic masterpieces, simple diagrams are OK. These sketches should, however be as detailed and as quantitative as possible.

At the beginning, I mentioned that there was two parts to the field notes topic, the actual collection of information in the field (which this article is largely about) and what you do with it later. If you don't do something with your field data, then all your collection effort is for naught. Ideally, in the evening when you come in from the field, you should "work up" your field notes. These days, that usually means entering the information into some sort of data base or other computer file. Put your data into some well organized form, work with it, see what can be learned from it and **share** it. At the very least, send in your yearly butterfly data to Tom Dodd for the *Massachusetts Butterfly Club Data Base* .

Where the 4th of July Counts Are



- 1 Northern Berkshire County, MA
- 2 Central Berkshire County, MA
- 3 Southern Berkshire County, MA
- 4 Central Franklin County, MA
- 5 Northern Worcester County, MA
- 6 Concord, MA
- 7 Foxboro, MA
- 8 Bristol County, MA
- 9 Outer Cape Cod, MA
- 10 Salisbury, CT
- 11 West reading/ Fairfield County, CT
- 12 Westpoort/ Fairfield, CT
- 13 Waterbury, CT
- 14 Farmington Valley, CT
- 15 Southern New Haven County, CT
- 16 Meriden, CT
- 17 East Glastonbury, CT
- 18 Storrs, CT
- 19 East Haddam, CT
- 20 North Essex County, MA
- 21 Madison/ Old Lyme, CT
- 22 New London, CT
- 23 Voluntown, CT
- 24 Falmouth, MA
- 25 Martha's Vineyard, MA

Massachusetts Butterflies No. 13 November 1999

Contents of the Fall Issue-----

- Highlights of the 1999 Butterfly Season**
Western Massachusetts by Mark Fairbrother
Eastern Massachusetts by Tom Dodd
- Results of the 1999 4th of July Counts** by Tom Dodd
There were two new counts this year: Falmouth (Alison Robb compiler)
and Martha's Vineyard (Mat Pelikan compiler)
- Field Notes** by Richard W. Hildreth

**Massachusetts Butterfly Club
33 Woodland Road
Auburn, MA 01501- 2143**



First Class Mail