

Insect Biodiversity of a Jack Pine Barrens

A report prepared for the Biodiversity Research Institute

By

Timothy L. McCabe, Ph.D.

New York State Museum, Albany, N.Y.

April 2004

INTRODUCTION

In 2003, the Biodiversity Research Institute (BRI) funded a biodiversity survey of the Lepidoptera of the Gadway Barren. Jack pine barrens, although common in and around the Great Lakes (particularly in Minnesota, Michigan and Wisconsin), are restricted to just a few localities in New York, most notably the Altona Flat Rock and the Gadway Barren (both near Plattsburgh). Isolated stands of jack pines (*Pinus banksiana*) occur elsewhere in the state, but these are thought to be escapes and do not dominate the landscape as they do in the aforementioned barrens. Unlike other New York pine barrens, jack pine barrens occur on flat rock with minimal soil. This makes for a very hostile and sterile environment subject to drought and fire. Jack pine barrens, forming terrestrial communities known as 'sandstone pavement barrens' (Reschke, 1990), are one of the more unique ecological systems in NYS. Despite this uniqueness they are one of our least studied communities from an entomology standpoint, hence the importance of a biodiversity survey.

All-taxa insect surveys are impractical because of sheer numbers of species and the paucity of experts for the various groups. A compromise consists of surveys for better known, easily collected and identified groups - primarily butterflies and dragonflies. The butterfly's less familiar cousins, the moths, are now recognized as useful indicators of habitat quality because they are readily attracted to light making them easy to sample, have greater species diversity, giving a finer measure of the complexity of an ecosystem, and are almost as well known.

New York Fauna and the Gadway Barrens

We have an excellent reference on New York State Lepidoptera – W. T. M. Forbes' "Lepidoptera of New York and Neighboring States." Forbes (1920, 1948, 1954, 1960) gives complete distributions for each species including references to specific New York localities for less common species.

Despite Forbes' truly in-depth coverage of NYS, not one mention was made of jack pine barrens. Lepidoptera species now known to occur in these northern barrens (e.g. *Zale duplicata*, *largera*, *Agrotis obliqua*, *Aplocera plagiata*, *Apamea unanimitis*) were not reported from New York until jack pine barrens were investigated.

The NYS Heritage Program and the TNC (The Nature Conservancy) have done botanical inventories and limited light trapping on the Gadway Barrens. Stanton (2002, unpublished Master's thesis) provided a limited sample of the Lepidoptera of the Gadway Barren.

The understory of the Gadway Barren is mostly ericaceous plants (Kalmia, Vaccinium, Gaylussacia) and “Reindeer Moss” – lichens in the genus Cladonia), but with an abundance of orchids (Cypripedium acaule) and bracken fern (Pteridium aquilinum). In addition to the blueberries, there is a poorly represented shrub community (Aronia melanocarpa, Salix discolor, Salix bebbiana, Nemopanthus mucronatus) with an open canopy of Pinus banksiana, Betula populifolia and Prunus serotina. The only other trees noted in the core of the barrens were the occasional Acer rubra and Quercus rubra.

Methods:

Sampling was done using light sources (battery driven 15-watt ultra-violet lights and generator driven 175 watt Mercury vapor lights), malaise traps, bait, and beating techniques for resting larvae (day and night). The malaise trap was run continuously from June through October of 2003. The malaise traps few Lepidoptera, but often captures species not otherwise observed. Site visits for changing the Malaise, collecting diurnals, and light trapping were done three times per month (timed to avoid the week of the full moon when light-trapping is poor) early in the season when abundance and diversity are at a peak for these latitudes.

Results:

A list (see Appendix 1) is provided with data of the Lepidoptera discovered during the 2003 survey. Additional records were added from Stanton (2000) and my own records, both published (McCabe, 2001) and unpublished (a 1997 site visit) for the sake of completeness. The core of the Gadway Barren was the source of all records (Appendix 1). These coordinates were: Latitude 44°56'56" North and longitude 73°45'22" West at an elevation of 180 meters. Highlights include:

1) A potential intergeneric hybrid of the hairstreak butterflies Satyrium calanus and Strymon liparops.

2) Agrotis obliqua is determined to be univoltine, but the host is still not established. Its nearest relatives include two fire-climax species associated (host plant associations) with Pyxidantha (Schweitzer & McCabe, in press). Pyxidantha is a member of the plant family Diapensiaceae and no members of this plant family are known from the Gadway Barren. Diapensiaceae is represented in New York State by Diapensia, occurring above tree line in the high peaks, and by Pyxidantha on Long Island.

3) Sideridis maryx proved to be an ovipositional specialist suggesting monophagy. The common plant species at Gadway proved to be unacceptable hosts.

4) Two insects, known from Canada, are reported from New York State and the United States for the first time. One of these new records, Aplocera plagiata, a geometrid, is a potential control agent for St. John's Wort (Hypericum perforatum). Apamea unanimitis, a noctuid, is the other new record; although known to feed on grasses it is not a significant pasture pest.

5) Eacles imperialis pini, a northern disjunct population of nominate E. imperialis, has not been recorded previously in eastern New York (this giant silk moth is known from the Alvar near Watertown and from Canada).

6) Only the second known New York population of Crambidia casta (Arctiidae) was discovered. This denizen of the northern Great Plains occurs in relictual prairie habitats in

New York (Wilton Wildlife Preserve and Gadway) and at neighboring Canada sites. It is presumed to feed on reindeer moss (Cladonia sp.).

7) Zale duplicata largera was determined, upon doing comparative morphology, to be a distinct species. It was previously thought to be a food-plant race of Zale duplicata. Zale largera is known to feed on Pinus banksiana and, in fact, appears not to survive on other species of pine. Jack pines transplanted to Albany (transplanted solely for the purpose of raising Zale largera) were defoliated by pine sawflies. Sawflies may be responsible for restricting jack pine to flat rock formations in New York (no soil for sawfly pupation).

8) Bulk malaise samples of non-lepidopterous insects turned up little of consequence. Uncommon species were pinned, labeled, vouchered and deposited in the NYSM awaiting authoritative determinations.

9) The possibly extinct Nepytia pellucidaria (Geometridae)(no records since the 1940's) and Melaporphyria immortua (Noctuidae)(no records since the 1970's) were not found. Similarly, the rare and declining (in New York) Phyciodes batesi (Nymphalidae) and Lithophane lepida (Noctuidae) were also not found.

Management suggestions

The Gadway Barren, because of the severe conditions brought on by the lack of soil, appears devoid of invasive species. Brush hogging, burning, and chemical sprays – all used to manage invasive species on the Albany Pine Bush - are not needed to sustain the Gadway Barrens. The Gadway Barren is in a very rural section of New York State. As a consequence it has escaped the light pollution that has impacted pitch pine/sand barrens along the eastern edge of the state. Several of New York's apparently light-sensitive rare Lepidoptera species (e.g. Sideridis maryx, Agrotis obliqua, Crambidia casta), whose biologies remain unknown, still persist in healthy numbers at Gadway. Elucidating the biologies of the aforementioned habitat-restricted species should be a priority before any high-impact management strategy is implemented.

Acknowledgements

Howard Romack spent many hours collecting long into the night and also during the day to obtain most of the records presented here. I thank Bill Brown and Kathy Regan (The Nature Conservancy, Keene Valley office) for granting permission, on behalf of the TNC, to collect and survey the TNC land holdings at Gadway. Kathy Schneider (NYS Heritage Program) and Edward Stanton (ESF, Syracuse) kindly introduced me to the site.

REFERENCES

- Forbes, W. T. M. 1920. The Lepidoptera of New York and Neighboring States. Part 1. Cornell University Agricultural Experiment Station. Memoir 68. 729 pp.
- Forbes, W. T. M. 1948. The Lepidoptera of New York and Neighboring States. Part 2. Cornell University Agricultural Experiment Station. Memoir 274. 263 pp.
- Forbes, W. T. M. 1954. The Lepidoptera of New York and Neighboring States. Part 3. Cornell University Agricultural Experiment Station. Memoir 329. 433 pp.
- Forbes, W. T. M. 1960. The Lepidoptera of New York and Neighboring States. Part 4. Cornell University Agricultural Experiment Station. Memoir 371. 188 pp.
- McCabe, T. L. 2001. Nycteola frigidana Walker (Noctuidae: Sarrothripinae) reported at an unorthodox bait. *Journal of the Lepidopterist's Society* 55(3): 119.
- Reschke, C. 1990. Ecological communities of New York State. New York Natural Heritage Program, Latham, New York. 96 pp.
- Schweitzer, D. & T. L. McCabe (in press). The taxonomy, larva, and ecology of Agrotis buchholzi (Noctuidae) with a new sibling species from North Carolina. *Journal of the Lepidopterist's Society*.
- Stanton, E. J. 1998. Evaluating the completeness of a macrolepidoptera inventory using species abundance distributions: three case studies in New York State. UMI Dissertation Services 2001. Unpublished Master's Thesis.

APPENDIX 1 List of the Lepidoptera observed on the Gadway Barrens
(Latitude 44°56'56" North and longitude 73°45'22" West)

| <u>Genus</u> | <u>species</u> | <u>Family</u> | <u>Date</u> | <u>Notes</u> | <u>Collector</u> |
|--------------|----------------|---------------|-------------|----------------------|------------------|
| Cisseps | fulvicollis | Arctiidae | 27-Jun-03 | | Romack |
| Cisseps | fulvicollis | Arctiidae | 13-Sep-03 | | Romack |
| Crambidia | casta | Arctiidae | 24-Aug-03 | | Romack |
| Cycnia | tenera | Arctiidae | 27-Jun-03 | | Romack |
| Eilema | bicolor | Arctiidae | 6-Jul-03 | | Romack |
| Eilema | bicolor | Arctiidae | 20-Jul-03 | | Romack |
| Estigmene | acraea | Arctiidae | 28-Jun-98 | | Stanton |
| Grammia | celia | Arctiidae | 27-Jun-03 | | Romack |
| Grammia | rectilinea | Arctiidae | 20-Jul-03 | | Romack |
| Grammia | speciosa | Arctiidae | 6-Jul-03 | | Romack |
| Grammia | virgo | Arctiidae | 6-Jul-03 | | Romack |
| Grammia | virguncula | Arctiidae | 27-Jun-03 | | Romack |
| Halysidota | tessellaris | Arctiidae | 6-Jul-03 | | Romack |
| Haploa | confusa | Arctiidae | 20-Jul-03 | | Romack |
| Haploa | lecontei | Arctiidae | 6-Jul-03 | | Romack |
| Haploa | lecontei | Arctiidae | 13-Jul-03 | | Romack |
| Haploa | lecontei | Arctiidae | 20-Jul-03 | | Romack |
| Holomelina | aurantiaca | Arctiidae | 26-Jul-03 | sight | R&McC |
| Holomelina | ferruginosa | Arctiidae | 6-Jul-03 | | Romack |
| Holomelina | ferruginosa | Arctiidae | 13-Jul-03 | | Romack |
| Holomelina | ferruginosa | Arctiidae | 20-Jul-03 | | Romack |
| Holomelina | laeta | Arctiidae | 25-Jun-03 | | McCabe |
| Holomelina | laeta | Arctiidae | 27-Jun-03 | | Romack |
| Hyphantria | cunea | Arctiidae | 13-Jun-03 | | Romack |
| Hyphantria | cunea | Arctiidae | 25-Jun-03 | | McCabe |
| Hyphantria | cunea | Arctiidae | 27-Jun-03 | | Romack |
| Hyphantria | cunea | Arctiidae | 13-Jul-03 | | Romack |
| Hypoprepia | fucosa | Arctiidae | 6-Jul-03 | | Romack |
| Hypoprepia | fucosa | Arctiidae | 13-Jul-03 | | Romack |
| Hypoprepia | fucosa | Arctiidae | 20-Jul-03 | | Romack |
| Hypoprepia | fucosa | Arctiidae | 26-Jul-03 | | R&McC |
| Hypoprepia | miniata | Arctiidae | 20-Jul-03 | | Romack |
| Lophocampa | maculata | Arctiidae | 13-Jun-03 | | Romack |
| Lophocampa | maculata | Arctiidae | 27-Jun-03 | | Romack |
| Phragmatobia | assimilans | Arctiidae | 18-May-03 | clear/cold | McCabe |
| Pyrrharctia | isabella | Arctiidae | 27-Jun-03 | | Romack |
| Spilosoma | latipennis | Arctiidae | 25-Jun-03 | | McCabe |
| Spilosoma | virginica | Arctiidae | 20-Jul-03 | | Romack |
| Drepana | arcuata | Drepanidae | 27-Jun-03 | | Romack |
| Drepana | arcuata | Drepanidae | 20-Jul-03 | | Romack |
| Drepana | bilineata | Drepanidae | 13-Jun-03 | | Romack |
| Drepana | bilineata | Drepanidae | 20-Jul-03 | | Romack |
| Drepana | rosea | Drepanidae | 25-Jun-03 | | McCabe |
| Anacamptodes | humaria | Geometridae | 15-Jun-98 | | Stanton |
| Antepione | thisoaria | Geometridae | 13-Jun-03 | | Romack |
| Aplocera | plagiata | Geometridae | 27-Jun-03 | intro to Ont in 1990 | McCabe |
| Aplocera | plagiata | Geometridae | 10-Oct-03 | | Romack |

| | | | | |
|---------------|-----------------|-------------|----------------------|---------|
| Biston | betulariae | Geometridae | 13-Jun-03 | Romack |
| Biston | betulariae | Geometridae | 27-Jun-03 | Romack |
| Biston | betulariae | Geometridae | 6-Jul-03 | Romack |
| Cabera | erythemaria | Geometridae | 13-Jun-03 | Romack |
| Campaea | perlata | Geometridae | 24-Aug-03 | Romack |
| Campaea | perlata | Geometridae | 13-Sep-03 | Romack |
| Caripeta | angustiorata | Geometridae | 6-Jul-03 | Romack |
| Caripeta | divisata | Geometridae | 6-Jul-03 | Romack |
| Caripeta | piniata | Geometridae | 13-Jun-03 | Romack |
| Caripeta | piniata | Geometridae | 27-Jun-03 | Romack |
| Caripeta | piniata | Geometridae | 13-Jul-03 | Romack |
| Cephis | armataria | Geometridae | 27-Jun-03 | Romack |
| Chlorochlamys | choloroleucaria | Geometridae | 25-Jun-03 | McCabe |
| Chloroclystis | rectangulata | Geometridae | 6-Jul-03 | Romack |
| Cingilia | catenaria | Geometridae | 13-Sep-03 | Romack |
| Cladara | atroliturata | Geometridae | 21-May-98 | Stanton |
| Cladara | limitata | Geometridae | 20-May-98 | Stanton |
| Coryphista | meadii | Geometridae | 25-Jul-98 | Stanton |
| Cyclophora | pendulinaria | Geometridae | 18-May-03 clear/cold | McCabe |
| Cyclophora | pendulinaria | Geometridae | 13-Jun-03 | Romack |
| Cyclophora | pendulinaria | Geometridae | 20-Jul-03 | Romack |
| Dysstroma | hersiliata | Geometridae | 28-Jun-98 | Stanton |
| Ematurga | amitaria | Geometridae | 13-Jun-03 | Romack |
| Ennomos | magnarius | Geometridae | 13-Sep-03 | Romack |
| Epirrhoe | alternata | Geometridae | 27-Jun-03 | Romack |
| Eubaphe | mendica | Geometridae | 20-Jul-03 | Romack |
| Euchlaena | irrarria | Geometridae | 13-Jun-03 | Romack |
| Euchlaena | johnsonaria | Geometridae | 27-Jun-03 | Romack |
| Euchlaena | muzaria | Geometridae | 25-Jun-03 | McCabe |
| Euchlaena | obtusaria | Geometridae | 27-Jun-98 | Stanton |
| Euchlaena | pectinaria | Geometridae | 15-Jun-98 | Stanton |
| Eufidonia | convergaria | Geometridae | 27-Jun-03 | Romack |
| Eufidonia | convergaria | Geometridae | 6-Jul-03 | Romack |
| Eufidonia | discospilata | Geometridae | 13-Jun-03 | Romack |
| Eulithis | explanata | Geometridae | 6-Jul-03 | Romack |
| Eulithis | explanata | Geometridae | 13-Jul-03 | Romack |
| Eumacaria | latiferrugata | Geometridae | 20-Jul-03 | Romack |
| Eupithecia | sp. | Geometridae | 6-Jul-03 | Romack |
| Eusarca | confusaria | Geometridae | 27-Jun-03 | Romack |
| Heliomata | cycladata | Geometridae | 27-Jun-03 | Romack |
| Heterophleps | triguttaria | Geometridae | 28-Jun-98 | Stanton |
| Hethemia | pistaciaria | Geometridae | 13-Jun-03 | Romack |
| Homochlodes | fritillaria | Geometridae | 13-Jun-03 | Romack |
| Homochlodes | fritillaria | Geometridae | 27-Jun-03 | Romack |
| Hydrelia | inornata | Geometridae | 28-Jun-98 | Stanton |
| Hydria | prunivorata | Geometridae | 27-Jun-03 | Romack |
| Hydria | prunivorata | Geometridae | 6-Jul-03 | Romack |
| Hydria | prunivorata | Geometridae | 20-Jul-03 | Romack |
| Hypagyrtis | unipunctaria | Geometridae | 25-Jun-03 | McCabe |
| Hypagyrtis | unipunctaria | Geometridae | 27-Jun-03 | Romack |
| Iridopsis | larvaria | Geometridae | 25-Jun-03 | McCabe |
| Iridopsis | larvaria | Geometridae | 6-Jul-03 | Romack |

| | | | | | |
|--------------|---------------|-------------|-----------|----------------|---------|
| Itame | argillacearia | Geometridae | 27-Jun-03 | | Romack |
| Itame | argillacearia | Geometridae | 6-Jul-03 | Malaise | |
| Itame | argillacearia | Geometridae | 6-Jul-03 | | Romack |
| Itame | argillacearia | Geometridae | 20-Jul-03 | | Romack |
| Itame | pustularia | Geometridae | 6-Jul-03 | | Romack |
| Itame | subcessaria | Geometridae | 26-Jul-03 | | McCabe |
| Lambdina | fiscellaria | Geometridae | 13-Sep-03 | | Romack |
| Lambdina | fiscellaria | Geometridae | 11-Oct-03 | | Romack |
| Lobophora | nivigerata | Geometridae | 25-Jul-98 | | Stanton |
| Lomographa | semiclarata | Geometridae | 18-May-03 | daytime | McCabe |
| Lomographa | vestaliata | Geometridae | 13-Jun-03 | | Romack |
| Lycia | cognataria | Geometridae | 28-Jun-98 | | Stanton |
| Lytrosis | unitaria | Geometridae | 27-Jun-03 | | Romack |
| Lytrosis | unitaria | Geometridae | 20-Jul-03 | | Romack |
| Macaria | aemulataria | Geometridae | 28-Jun-98 | | Stanton |
| Macaria | banksiana | Geometridae | 13-Jun-03 | | Romack |
| Macaria | banksiana | Geometridae | 27-Jun-03 | | McCabe |
| Macaria | bicolorata | Geometridae | 13-Jun-03 | | Romack |
| Macaria | bisignata | Geometridae | 28-Jun-98 | | Stanton |
| Macaria | continuata | Geometridae | 27-Jun-03 | | Romack |
| Macaria | fissinotata | Geometridae | 27-Jun-03 | | Romack |
| Macaria | ocellinata | Geometridae | 27-Jun-03 | | Romack |
| Macaria | pinistrobata | Geometridae | 27-Jun-03 | | McCabe |
| Macaria | signaria | Geometridae | 13-Jun-03 | | Romack |
| Macaria | submarmorata | Geometridae | 25-Jul-98 | | Stanton |
| Macaria | ulsterata | Geometridae | 25-Jun-03 | | McCabe |
| Melanolophia | signataria | Geometridae | 13-Jun-03 | | Romack |
| Metanema | determinata | Geometridae | 26-Aug-03 | larva on Salix | Romack |
| Metanema | inatomaria | Geometridae | 20-Jul-03 | | Romack |
| Metarranthis | amyrisaria | Geometridae | 20-May-98 | | Stanton |
| Metarranthis | duaria | Geometridae | 20-May-98 | | Stanton |
| Metarranthis | hypocharia | Geometridae | 20-May-98 | | Stanton |
| Metarranthis | indeclinata | Geometridae | 25-Jun-03 | | McCabe |
| Metarranthis | obfirmaria | Geometridae | 18-May-03 | sight/daytime | McCabe |
| Metarranthis | obfirmaria | Geometridae | 13-Jun-03 | | Romack |
| Nematocampa | limbata | Geometridae | 13-Jul-03 | | Romack |
| Nepytia | canosaria | Geometridae | 13-Sep-03 | | Romack |
| Pero | morrisonaria | Geometridae | 13-Jun-03 | | Romack |
| Pero | morrisonaria | Geometridae | 13-Jun-03 | | Romack |
| Pero | morrisonaria | Geometridae | 6-Jul-03 | | Romack |
| Petrophora | divisata | Geometridae | 13-Jun-03 | | Romack |
| Plagodis | alcoolaria | Geometridae | 13-Jun-03 | | Romack |
| Plagodis | serinaria | Geometridae | 18-May-03 | | McCabe |
| Plagodis | serinaria | Geometridae | 13-Jun-03 | | Romack |
| Probole | amicaria | Geometridae | 13-Jun-03 | | Romack |
| Prochoerodes | transversata | Geometridae | 13-Sep-03 | | Romack |
| Prochoerodes | transversata | Geometridae | 18-May-03 | clear/cold | McCabe |
| Protoboarmia | porcelaria | Geometridae | 25-Jul-98 | | Stanton |
| Pterophora | divisata | Geometridae | 18-May-03 | daytime | McCabe |
| Rheumaptera | subhastata | Geometridae | 13-Jun-03 | | Romack |
| Rheumaptera | subhastata | Geometridae | 27-Jun-03 | | Romack |
| Scopula | limboundata | Geometridae | 13-Jul-03 | | Romack |

| | | | | | |
|------------|----------------------------|---------------|-----------|---------------|---------|
| Scopula | limboundata | Geometridae | 20-Jul-03 | | Romack |
| Scopula | limboundata | Geometridae | 26-Jul-03 | | McCabe |
| Sicya | macularia | Geometridae | 6-Jul-03 | | Romack |
| Spargania | magnoliata | Geometridae | 13-Jun-03 | | Romack |
| Stamnodes | gibbicosta | Geometridae | 13-Sep-03 | | Romack |
| Synchlora | aerata | Geometridae | 28-Jun-98 | sight/daytime | Stanton |
| Tetracis | cachexiata | Geometridae | 13-Jun-03 | | Romack |
| Tetracis | cachexiata | Geometridae | 6-Jul-03 | | Romack |
| Tetracis | crocallata | Geometridae | 13-Jun-03 | | Romack |
| Therina | endropiaria | Geometridae | 26-Jun-98 | | Stanton |
| Therina | quercivoraria | Geometridae | 27-Jun-03 | | Romack |
| Xanthorhoe | ferrugata | Geometridae | 28-Jun-98 | | Stanton |
| Xanthotype | sospeta | Geometridae | 27-Jun-03 | | Romack |
| Xanthotype | urticaria | Geometridae | 27-Jun-98 | | Stanton |
| Adopoea | lineola | Hesperiidae | 27-Jun-03 | | Romack |
| Adopoea | lineola | Hesperiidae | 6-Jul-03 | Malaise | |
| Adopoea | lineola | Hesperiidae | 13-Jul-03 | | Romack |
| Adopoea | lineola | Hesperiidae | 20-Jul-03 | | Romack |
| Erynnis | icelus | Hesperiidae | 13-Jun-03 | | Romack |
| Erynnis | juvenalis | Hesperiidae | 13-Jun-03 | | Romack |
| Euphyes | vestris | Hesperiidae | 13-Jul-03 | | Romack |
| Euphyes | vestris | Hesperiidae | 20-Jul-03 | | Romack |
| Euphyes | vestris | Hesperiidae | 26-Jul-03 | | McCabe |
| Euphyes | bimacula | Hesperiidae | 27-Jun-98 | | Stanton |
| Poanes | hobomok | Hesperiidae | 13-Jun-03 | | Romack |
| Polites | mystic | Hesperiidae | 27-Jun-03 | | Romack |
| Polites | themistocles | Hesperiidae | 27-Jun-03 | | Romack |
| Malacosoma | americana | Lasiocampidae | 20-Jul-03 | | Romack |
| Tolype | laricis | Lasiocampidae | 13-Sep-03 | | Romack |
| Tolype | laricis | Lasiocampidae | 24-Aug-03 | | Romack |
| Celestrina | ladon | Lycaenidae | 13-Jun-03 | | Romack |
| Celestrina | ladon | Lycaenidae | 13-Jul-03 | | Romack |
| Celestrina | ladon | Lycaenidae | 20-Jul-03 | | Romack |
| Celestrina | ladon | Lycaenidae | 6-Jul-03 | | Romack |
| Everes | comyntas | Lycaenidae | 13-Jun-03 | | Romack |
| Incisalia | augustinus | Lycaenidae | 13-Jun-03 | | Romack |
| Incisalia | niphon | Lycaenidae | 13-Jun-03 | | Romack |
| Lycaena | hyllus | Lycaenidae | 27-Jun-98 | | Stanton |
| Lycaena | phlaeas | Lycaenidae | 13-Jun-03 | | Romack |
| Plebejus | lygdamas | Lycaenidae | 13-Jun-03 | | Romack |
| Satyrium | falacer | Lycaenidae | 13-Jun-03 | | Romack |
| Satyrium | falacer | Lycaenidae | 20-Jul-03 | | Romack |
| Satyrium | falacer x liparops hybrid? | Lycaenidae | 13-Jun-03 | | Romack |
| Strymon | liparops | Lycaenidae | 6-Jul-03 | Malaise | |
| Dasychira | obliquata | Lymantriidae | 20-Jul-03 | | Romack |
| Dasychira | obliquata | Lymantriidae | 26-Jul-03 | | McCabe |
| Leucoma | salicis | Lymantriidae | 6-Jul-03 | | Romack |
| Abagrotis | alternata | Noctuidae | 26-Jul-03 | | McCabe |
| Abagrotis | alternata | Noctuidae | 13-Sep-03 | | Romack |
| Abagrotis | brunneipennis | Noctuidae | 13-Jul-03 | | Romack |
| Abagrotis | brunneipennis | Noctuidae | 20-Jul-03 | | Romack |
| Abagrotis | brunneipennis | Noctuidae | 26-Jul-03 | | McCabe |

| | | | | |
|---------------|---------------|-----------|-------------------------|---------|
| Abagrotis | brunneipennis | Noctuidae | 24-Aug-03 | Romack |
| Abagrotis | brunneipennis | Noctuidae | 13-Sep-03 | malaise |
| Abagrotis | brunneipennis | Noctuidae | 13-Sep-03 | Romack |
| Acronicta | americana | Noctuidae | 13-Jun-03 | Romack |
| Acronicta | americana | Noctuidae | 27-Jun-03 | Romack |
| Acronicta | americana | Noctuidae | 20-Jul-03 | Romack |
| Acronicta | dactylina | Noctuidae | 27-Jun-03 | Romack |
| Acronicta | grisea | Noctuidae | 13-Jun-03 | Romack |
| Acronicta | hasta | Noctuidae | 13-Jun-03 | Romack |
| Acronicta | impressa | Noctuidae | 18-May-03 at bait | McCabe |
| Acronicta | impressa | Noctuidae | 26-Jul-03 | McCabe |
| Acronicta | impressa | Noctuidae | 27-Jul-03 | Romack |
| Acronicta | incretata | Noctuidae | 6-Jul-03 | Romack |
| Acronicta | incretata | Noctuidae | 13-Jul-03 | Romack |
| Acronicta | innotata | Noctuidae | 13-Jun-03 | Romack |
| Acronicta | innotata | Noctuidae | 27-Jun-03 | Romack |
| Acronicta | innotata | Noctuidae | 6-Jul-03 | Romack |
| Acronicta | innotata | Noctuidae | 20-Jul-03 | Romack |
| Acronicta | lepusculina | Noctuidae | 13-Jun-03 | Romack |
| Acronicta | lepusculina | Noctuidae | 27-Jun-03 | Romack |
| Acronicta | longa | Noctuidae | 13-Jul-03 | Romack |
| Acronicta | morula | Noctuidae | 20-Jul-03 | Romack |
| Acronicta | noctivaga | Noctuidae | 13-Jun-03 | Romack |
| Acronicta | oblinita | Noctuidae | 13-Jun-03 | Romack |
| Acronicta | superans | Noctuidae | 13-Jun-03 | Romack |
| Acronicta | superans | Noctuidae | 27-Jun-03 | Romack |
| Acronicta | superans | Noctuidae | 6-Jul-03 | Romack |
| Acronicta | tristis | Noctuidae | 13-Jun-03 | Romack |
| Acronicta | tritona | Noctuidae | 13-Jun-03 | Romack |
| Acronicta | tritona | Noctuidae | 27-Jun-03 | Romack |
| Acronicta | tritona | Noctuidae | 6-Jul-03 | Romack |
| Acronicta | tritona | Noctuidae | 13-Jul-03 | Romack |
| Acronicta | tritona | Noctuidae | 26-Jul-03 | McCabe |
| Adita | chionanthi | Noctuidae | 13-Sep-03 | Romack |
| Agriopodes | fallax | Noctuidae | 6-Jul-03 | Romack |
| Agriopodes | fallax | Noctuidae | 20-Jul-03 | Romack |
| Agrotis | obliqua | Noctuidae | 13-Jun-03 | Romack |
| Agrotis | volubilis | Noctuidae | 26-Jul-03 | McCabe |
| Agrotis | ypsilon | Noctuidae | 26-Jul-03 | McCabe |
| Aletia | oxygala | Noctuidae | 13-Jun-03 | Romack |
| Allagrapha | aeria | Noctuidae | 27-Jun-03 | Romack |
| Allagrapha | aeria | Noctuidae | 6-Jul-03 | Romack |
| Allagrapha | aeria | Noctuidae | 26-Jul-03 | McCabe |
| Amolita | fessa | Noctuidae | 13-Jun-03 | Romack |
| Amphipoea | velata | Noctuidae | 26-Jul-03 | McCabe |
| Amphipyra | pyramidoides | Noctuidae | 20-Jul-03 | Romack |
| Amphipyra | pyramidoides | Noctuidae | 24-Aug-03 | Romack |
| Amphipyra | pyramidoides | Noctuidae | 13-Sep-03 | malaise |
| Anagrapha | falcifera | Noctuidae | 18-May-03 sight/daytime | McCabe |
| Anaplectoides | prasina | Noctuidae | 25-Jun-03 | McCabe |
| Anaplectoides | pressus | Noctuidae | 25-Jun-03 | McCabe |
| Anicla | illapsa | Noctuidae | 26-Jul-03 | McCabe |

| | | | | | |
|--------------|--------------|-----------|-----------|---------|---------|
| Anodonta | conservula | Noctuidae | 26-Jul-03 | | McCabe |
| Apamea | alias | Noctuidae | 25-Jun-03 | | McCabe |
| Apamea | amputatrix | Noctuidae | 6-Jul-03 | | Romack |
| Apamea | amputatrix | Noctuidae | 13-Jul-03 | | Romack |
| Apamea | amputatrix | Noctuidae | 14-Jul-03 | Malaise | |
| Apamea | amputatrix | Noctuidae | 26-Jul-03 | at bait | R&McC |
| Apamea | amputatrix | Noctuidae | 26-Jul-03 | | McCabe |
| Apamea | devastator | Noctuidae | 26-Jul-03 | | McCabe |
| Apamea | dubitans | Noctuidae | 26-Jul-03 | | McCabe |
| Apamea | impulsa | Noctuidae | 26-Jul-03 | | McCabe |
| Apamea | lignicolora | Noctuidae | 6-Jul-03 | | Romack |
| Apamea | lignicolora | Noctuidae | 20-Jul-03 | | Romack |
| Apamea | lignicolora | Noctuidae | 26-Jul-03 | | McCabe |
| Apamea | nigrior | Noctuidae | 20-Jul-03 | | Romack |
| Apamea | nigrior | Noctuidae | 26-Jul-03 | | McCabe |
| Apamea | ophiogramma | Noctuidae | 26-Jul-03 | | McCabe |
| Apamea | sordens | Noctuidae | 13-Jun-03 | | Romack |
| Apamea | sordens | Noctuidae | 27-Jun-03 | | Romack |
| Apamea | unanimis | Noctuidae | 26-Jul-03 | | McCabe |
| Apamea | verbascoides | Noctuidae | 26-Jul-03 | | McCabe |
| Apharetra | dentata | Noctuidae | 6-Jul-03 | | Romack |
| Apharetra | dentata | Noctuidae | 13-Jul-03 | | Romack |
| Apharetra | dentata | Noctuidae | 20-Jul-03 | | Romack |
| Aplectoides | condita | Noctuidae | 28-Jun-98 | | Stanton |
| Archanara | oblonga | Noctuidae | 10-Sep-03 | | Romack |
| Autographa | precaionis | Noctuidae | 13-Jun-03 | | Romack |
| Autographa | precaionis | Noctuidae | 11-Oct-03 | | Romack |
| Autographa | rubida | Noctuidae | 13-Jun-03 | | Romack |
| Baileya | doubledayi | Noctuidae | 13-Jun-03 | | Romack |
| Baileya | doubledayi | Noctuidae | 13-Jul-03 | | Romack |
| Baileya | doubledayi | Noctuidae | 20-Jul-03 | | Romack |
| Baileya | doubledayi | Noctuidae | 26-Jul-03 | | McCabe |
| Balsa | malana | Noctuidae | 27-Jun-03 | | Romack |
| Balsa | tristrigella | Noctuidae | 13-Jun-03 | | Romack |
| Bleptina | caradrinalis | Noctuidae | 6-Jul-03 | | Romack |
| Bleptina | caradrinalis | Noctuidae | 14-Jul-03 | Malaise | |
| Caenurgina | erechtea | Noctuidae | 20-Jul-03 | | Romack |
| Callopietria | cordata | Noctuidae | 27-Jun-03 | | Romack |
| Callopietria | cordata | Noctuidae | 6-Jul-03 | | Romack |
| Callopietria | cordata | Noctuidae | 13-Jul-03 | | Romack |
| Callopietria | cordata | Noctuidae | 14-Jul-03 | Malaise | |
| Callopietria | mollissima | Noctuidae | 27-Jun-03 | | Romack |
| Calophasia | lunula | Noctuidae | 26-Jul-03 | | McCabe |
| Calpe | canadensis | Noctuidae | 26-Jul-03 | | McCabe |
| Catacola | blandula | Noctuidae | 26-Jul-03 | | McCabe |
| Catacola | briseis | Noctuidae | 20-Jul-03 | | Romack |
| Catacola | briseis | Noctuidae | 26-Jul-03 | | McCabe |
| Catacola | cerogama | Noctuidae | 26-Jul-03 | | McCabe |
| Catacola | cerogama | Noctuidae | 13-Sep-03 | | Romack |
| Catacola | gracilis | Noctuidae | 15-Jul-98 | | McCabe |
| Catacola | palaeogama | Noctuidae | 13-Sep-03 | | Romack |
| Catacola | praeclara | Noctuidae | 13-Jul-03 | | Romack |

| | | | | | |
|---------------|----------------|-----------|-----------|-------------------|---------|
| Catacola | praeclara | Noctuidae | 20-Jul-03 | | Romack |
| Catacola | praeclara | Noctuidae | 26-Jul-03 | | McCabe |
| Catacola | relicta | Noctuidae | 26-Jul-03 | | McCabe |
| Catacola | sordida | Noctuidae | 6-Jul-03 | | Romack |
| Catacola | sordida | Noctuidae | 13-Jul-03 | | Romack |
| Catacola | sordida | Noctuidae | 20-Jul-03 | | Romack |
| Catacola | sordida | Noctuidae | 26-Jul-03 | | McCabe |
| Catacola | ultronia | Noctuidae | 26-Jul-03 | | McCabe |
| Catacola | unijuga | Noctuidae | 20-Jul-03 | | Romack |
| Catacola | unijuga | Noctuidae | 26-Jul-03 | | McCabe |
| Catacola | unijuga | Noctuidae | 13-Sep-03 | | Romack |
| Cerma | cerintha | Noctuidae | 25-Jun-03 | | McCabe |
| Cerma | cerintha | Noctuidae | 27-Jun-03 | | Romack |
| Cerma | cerintha | Noctuidae | 6-Jul-03 | | Romack |
| Cerma | cora | Noctuidae | 13-Jun-03 | | Romack |
| Cerma | cora | Noctuidae | 14-Jul-03 | Malaise | |
| Cerma | cora | Noctuidae | 20-Jul-03 | | Romack |
| Chaetagnathia | sericea | Noctuidae | 13-Sep-03 | | malaise |
| Chaetagnathia | sericea | Noctuidae | 11-Oct-03 | | Romack |
| Chaetagnathia | sericea | Noctuidae | 11-Oct-03 | | malaise |
| Chaetagnathia | tremula | Noctuidae | 13-Sep-03 | | malaise |
| Chaetagnathia | tremula | Noctuidae | 13-Sep-03 | | Romack |
| Chaetagnathia | tremula | Noctuidae | 11-Oct-03 | | malaise |
| Chaetagnathia | tremula | Noctuidae | 11-Oct-03 | | Romack |
| Chaetagnathia | tremula | Noctuidae | 11-Oct-03 | | malaise |
| Charadra | deridens | Noctuidae | 13-Jul-03 | | Romack |
| Charadra | deridens | Noctuidae | 26-Jul-03 | | McCabe |
| Chrysanympa | formosa | Noctuidae | 27-Jun-03 | | Romack |
| Chrysanympa | formosa | Noctuidae | 6-Jul-03 | | Romack |
| Chrysanympa | formosa | Noctuidae | 20-Jul-03 | | Romack |
| Chytonix | palliatricula | Noctuidae | 26-Jul-03 | worn/discarded | McCabe |
| Chytonix | sensilis | Noctuidae | 27-Jul-03 | | McCabe |
| Colocasia | flavicornis | Noctuidae | 22-May-98 | | Stanton |
| Colocasia | propinquilinea | Noctuidae | 26-Jun-03 | | McCabe |
| Colocasia | propinquilinea | Noctuidae | 27-Jul-03 | | Romack |
| Cosmia | calami | Noctuidae | 20-Jul-03 | | Romack |
| Cosmia | calami | Noctuidae | 26-Jul-03 | | McCabe |
| Crocigrapha | normani | Noctuidae | 13-Jun-03 | | Romack |
| Cryptocala | acadiensis | Noctuidae | 26-Jul-03 | | McCabe |
| Cucullia | asteroides | Noctuidae | 15-Feb-04 | reared x Solidago | McCabe |
| Cucullia | florea | Noctuidae | 13-Jul-03 | | Romack |
| Cucullia | lucifuga | Noctuidae | 13-Jun-03 | | Romack |
| Cucullia | lucifuga | Noctuidae | 27-Jun-03 | | Romack |
| Cucullia | omissa | Noctuidae | 13-Jul-03 | | Romack |
| Deltote | muscosula | Noctuidae | 6-Jul-03 | | Romack |
| Deltote | muscosula | Noctuidae | 20-Jul-03 | | Romack |
| Diarsia | jucunda | Noctuidae | 20-Jul-03 | | Romack |
| Diarsia | jucunda | Noctuidae | 26-Jul-03 | | McCabe |
| Drasteria | grandirena | Noctuidae | 6-Jul-03 | | Romack |
| Drasteria | grandirena | Noctuidae | 13-Jul-03 | | Romack |
| Drasteria | grandirena | Noctuidae | 20-Jul-03 | | Romack |
| Elaphria | festivoides | Noctuidae | 13-Jun-03 | | Romack |

| | | | | | |
|---------------|---------------|-----------|-----------|---------|---------|
| Elaphria | festivoides | Noctuidae | 25-Jun-03 | | McCabe |
| Elaphria | festivoides | Noctuidae | 27-Jun-03 | | Romack |
| Enargia | decolora | Noctuidae | 24-Aug-03 | | Romack |
| Enargia | decolora | Noctuidae | 13-Sep-03 | | Romack |
| Enargia | mephisto | Noctuidae | 20-Jul-03 | | Romack |
| Epiglaea | apiata | Noctuidae | 13-Sep-03 | | malaise |
| Euagrotis | forbesi | Noctuidae | 6-Jul-03 | | Romack |
| Euagrotis | forbesi | Noctuidae | 13-Jul-03 | | Romack |
| Euagrotis | forbesi | Noctuidae | 26-Jul-03 | | McCabe |
| Euagrotis | illapsa | Noctuidae | 6-Jul-03 | | Romack |
| Eucirrhoedia | pampina | Noctuidae | 13-Sep-03 | | malaise |
| Eucirrhoedia | pampina | Noctuidae | 11-Oct-03 | | malaise |
| Euplexia | benesimilis | Noctuidae | 14-Jul-03 | Malaise | |
| Euplexia | benesimilis | Noctuidae | 20-Jul-03 | | Romack |
| Eupsilia | tresignata | Noctuidae | 13-Sep-03 | | Romack |
| Euretagrotis | attenta | Noctuidae | 26-Jul-03 | | McCabe |
| Euretagrotis | perattenta | Noctuidae | 26-Jul-03 | | McCabe |
| Eurois | nigra | Noctuidae | 20-Jul-03 | | Romack |
| Eurois | nigra | Noctuidae | 26-Jul-03 | | McCabe |
| Eurois | occulata | Noctuidae | 6-Jul-03 | | Romack |
| Feralia | comstocki | Noctuidae | 21-May-98 | | Stanton |
| Graphiphora | auger | Noctuidae | 20-Jul-03 | | Romack |
| Harrisimemna | tresignata | Noctuidae | 20-Jul-03 | | Romack |
| Hemipachnobia | subporyphorea | Noctuidae | 25-Jun-03 | | McCabe |
| Heptagrotis | phyllophora | Noctuidae | 27-Jun-03 | | Romack |
| Heptagrotis | phyllophora | Noctuidae | 6-Jul-03 | Malaise | |
| Heptagrotis | phyllophora | Noctuidae | 6-Jul-03 | | Romack |
| Heptagrotis | phyllophora | Noctuidae | 13-Jul-03 | | Romack |
| Heptagrotis | phyllophora | Noctuidae | 14-Jul-03 | Malaise | |
| Heptagrotis | phyllophora | Noctuidae | 20-Jul-03 | | Romack |
| Homorthodes | furfurata | Noctuidae | 14-Jul-03 | Malaise | |
| Hypena | abalienialis | Noctuidae | 13-Jul-03 | | Romack |
| Hypena | baltimoralis | Noctuidae | 13-Jun-03 | | Romack |
| Hypena | baltimoralis | Noctuidae | 25-Jun-03 | | McCabe |
| Hypena | baltimoralis | Noctuidae | 27-Jun-03 | | Romack |
| Hypena | baltimoralis | Noctuidae | 13-Jul-03 | | Romack |
| Hypena | deceptalis | Noctuidae | 13-Jun-03 | | Romack |
| Hypena | deceptalis | Noctuidae | 27-Jun-03 | | Romack |
| Hypena | deceptalis | Noctuidae | 6-Jul-03 | | Romack |
| Hypena | deceptalis | Noctuidae | 20-Jul-03 | | Romack |
| Hypena | madefactalis | Noctuidae | 26-Jun-98 | | Stanton |
| Hypena | palparia | Noctuidae | 26-Jun-98 | | Stanton |
| Hyppa | contrasta | Noctuidae | 27-Jul-03 | | McCabe |
| Hyppa | xylinoides | Noctuidae | 13-Jun-03 | | Romack |
| Hyppa | xylinoides | Noctuidae | 27-Jun-03 | | Romack |
| Hyppa | xylinoides | Noctuidae | 6-Jul-03 | Malaise | |
| Idia | aemula | Noctuidae | 13-Sep-03 | | Romack |
| Idia | americalis | Noctuidae | 13-Jul-03 | | Romack |
| Idia | americalis | Noctuidae | 26-Jul-03 | at bait | R&McC |
| Idia | americalis | Noctuidae | 13-Sep-03 | | Romack |
| Idia | diminuendis | Noctuidae | 14-Jul-03 | Malaise | |

| | | | | | |
|-------------|---------------|-----------|-----------|-----------------|---------|
| Idia | diminuendis | Noctuidae | 20-Jul-03 | | Romack |
| Idia | diminuendis | Noctuidae | 26-Jul-03 | at bait | R&McC |
| Idia | forbesii | Noctuidae | 20-Jul-03 | | Romack |
| Idia | lubricalis | Noctuidae | 26-Jul-03 | at bait | R&McC |
| Idia | rotundalis | Noctuidae | 14-Jul-03 | Malaise | |
| Idia | rotundalis | Noctuidae | 20-Jul-03 | | Romack |
| Ipimorpha | pleonectusa | Noctuidae | 20-Jul-03 | | Romack |
| Lacanobia | atlantica | Noctuidae | 25-Jun-03 | at bait, reared | McCabe |
| Lacanobia | subjuncta | Noctuidae | 20-Jul-03 | | Romack |
| Lacanobia | subjuncta | Noctuidae | 26-Jul-03 | | R&McC |
| Lacinipolia | anguina | Noctuidae | 13-Jun-03 | | Romack |
| Lacinipolia | lorea | Noctuidae | 6-Jul-03 | | Romack |
| Lacinipolia | olivacea | Noctuidae | 24-Aug-03 | | Romack |
| Leucania | commoides | Noctuidae | 26-Jul-03 | | McCabe |
| Leucania | insueta | Noctuidae | 6-Jul-03 | | Romack |
| Leucania | insueta | Noctuidae | 14-Jul-03 | Malaise | |
| Leucania | insueta | Noctuidae | 26-Jul-03 | | McCabe |
| Leucania | pseudargyria | Noctuidae | 15-Jul-98 | | McCabe |
| Leucania | ursula | Noctuidae | 26-Jul-03 | | McCabe |
| Leuconycta | diptheroides | Noctuidae | 27-Jun-03 | | Romack |
| Leuconycta | diptheroides | Noctuidae | 20-Jul-03 | | Romack |
| Leuconycta | diptheroides | Noctuidae | 26-Jul-03 | | McCabe |
| Leuconycta | lepidula | Noctuidae | 27-Jul-98 | | Stanton |
| Lithophane | fagina | Noctuidae | 11-Oct-03 | | malaise |
| Lithophane | grotei | Noctuidae | 11-Oct-03 | | Romack |
| Lithophane | hemina | Noctuidae | 13-Sep-03 | | Romack |
| Lithophane | tepida | Noctuidae | 11-Oct-03 | | Romack |
| Lithophane | tepida | Noctuidae | 11-Oct-03 | | malaise |
| Macrochilo | absorptalis | Noctuidae | 20-Jul-03 | | Romack |
| Maliattha | synochitis | Noctuidae | 13-Jun-03 | | Romack |
| Maliattha | synochitis | Noctuidae | 20-Jul-03 | | Romack |
| Marathyssa | inficita | Noctuidae | 28-Jun-98 | | Stanton |
| Melanchra | assimilis | Noctuidae | 25-Jun-03 | | McCabe |
| Metalectra | discalis | Noctuidae | 6-Jul-03 | | McCabe |
| Metalectra | quadrisignata | Noctuidae | 6-Jul-03 | | McCabe |
| Metalepsis | fishii | Noctuidae | 21-May-98 | | Stanton |
| Morrisonia | evicta | Noctuidae | 18-May-03 | clear/cold | McCabe |
| Morrisonia | latex | Noctuidae | 13-Jun-03 | | Romack |
| Nedra | ramosula | Noctuidae | 13-Jun-03 | | Romack |
| Nephelodes | minians | Noctuidae | 13-Sep-03 | | Romack |
| Noctua | pronuba | Noctuidae | 27-Jun-03 | | Romack |
| Noctua | pronuba | Noctuidae | 26-Jul-03 | sight | R&McC |
| Nycteola | frigidana | Noctuidae | 15-Jul-98 | | McCabe |
| Nycteola | frigidana | Noctuidae | 2-Aug-97 | | McCabe |
| Oligia | bridghami | Noctuidae | 26-Jul-03 | | R&McC |
| Oligia | fractilinea | Noctuidae | 26-Jul-03 | | R&McC |
| Oligia | illocata | Noctuidae | 13-Sep-03 | | Romack |
| Oligia | illocata | Noctuidae | 11-Oct-03 | | malaise |
| Oligia | mactata | Noctuidae | 11-Oct-03 | | malaise |
| Orthodes | detracta | Noctuidae | 27-Jun-03 | | Romack |
| Orthodes | detracta | Noctuidae | 6-Jul-03 | Malaise | |
| Orthodes | detracta | Noctuidae | 6-Jul-03 | | Romack |

| | | | | | |
|--------------|---------------|-----------|-----------|---------------|---------|
| Orthodes | goodelli | Noctuidae | 6-Jul-03 | | Romack |
| Orthosia | hibisci | Noctuidae | 21-May-98 | | Stanton |
| Orthosia | revicta | Noctuidae | 21-May-98 | | Stanton |
| Palthis | angulalis | Noctuidae | 13-Jun-03 | | Romack |
| Pangrapta | decoloralis | Noctuidae | 6-Jul-03 | | Romack |
| Pangrapta | decoloralis | Noctuidae | 13-Jul-03 | | Romack |
| Pangrapta | decoloralis | Noctuidae | 14-Jul-03 | Malaise | |
| Pangrapta | decoloralis | Noctuidae | 20-Jul-03 | | Romack |
| Panopoda | rufimargo | Noctuidae | 6-Jul-03 | | Romack |
| Panthea | acronyctoides | Noctuidae | 13-Jun-03 | | Romack |
| Panthea | acronyctoides | Noctuidae | 27-Jun-03 | | Romack |
| Panthea | acronyctoides | Noctuidae | 20-Jul-03 | | Romack |
| Panthea | acronyctoides | Noctuidae | 26-Jul-03 | | McCabe |
| Panthea | furcilla | Noctuidae | 13-Jun-03 | | Romack |
| Panthea | furcilla | Noctuidae | 27-Jun-03 | | Romack |
| Panthea | furcilla | Noctuidae | 13-Jul-03 | | Romack |
| Panthea | furcilla | Noctuidae | 20-Jul-03 | | Romack |
| Parallelia | bistriaris | Noctuidae | 27-Jun-03 | | Romack |
| Parallelia | bistriaris | Noctuidae | 6-Jul-03 | Malaise | |
| Parallelia | bistriaris | Noctuidae | 6-Jul-03 | | Romack |
| Parallelia | bistriaris | Noctuidae | 20-Jul-03 | | Romack |
| Parallelia | bistriaris | Noctuidae | 26-Jul-03 | sight at bait | R&McC |
| Peridroma | saucia | Noctuidae | 26-Jul-03 | sight at bait | R&McC |
| Phlogophora | iris | Noctuidae | 13-Jun-03 | | Romack |
| Phlogophora | iris | Noctuidae | 27-Jun-03 | | Romack |
| Platyhyphen | scabra | Noctuidae | 11-Oct-03 | | Romack |
| Platyhyphen | scabra | Noctuidae | 11-Oct-03 | | malaise |
| Plusia | balluca | Noctuidae | 20-Jul-03 | | Romack |
| Plusia | mappa | Noctuidae | 20-Jul-03 | | Romack |
| Plusia | putnami | Noctuidae | 27-Jun-03 | | Romack |
| Polia | imbrifera | Noctuidae | 27-Jun-03 | | Romack |
| Polia | imbrifera | Noctuidae | 20-Jul-03 | | Romack |
| Polia | nimbosa | Noctuidae | 6-Jul-03 | | Romack |
| Polia | nimbosa | Noctuidae | 13-Jul-03 | | Romack |
| Polia | nimbosa | Noctuidae | 20-Jul-03 | | Romack |
| Polia | nimbosa | Noctuidae | 26-Jul-03 | | McCabe |
| Polypogon | martha | Noctuidae | 26-Jul-03 | | Romack |
| Polypogon | ochreipennis | Noctuidae | 6-Jul-03 | | Romack |
| Protorthodes | oviduca | Noctuidae | 25-Jun-03 | | McCabe |
| Pseudaletia | unipuncta | Noctuidae | 18-May-03 | at bait | McCabe |
| Pseudaletia | unipuncta | Noctuidae | 27-Jun-03 | | Romack |
| Pseudaletia | unipuncta | Noctuidae | 26-Jul-03 | | McCabe |
| Pseudoplusia | includens | Noctuidae | 26-Jul-03 | | R&McC |
| Pyreferra | citrombra | Noctuidae | 11-Oct-03 | | Romack |
| Raphia | frater | Noctuidae | 13-Jun-03 | | Romack |
| Raphia | frater | Noctuidae | 27-Jun-03 | | Romack |
| Raphia | frater | Noctuidae | 6-Jul-03 | | Romack |
| Renia | factiosalis | Noctuidae | 14-Jul-03 | Malaise | |
| Rhizedra | lutosa | Noctuidae | 25-Jun-03 | | McCabe |
| Scoliopteryx | libatrix | Noctuidae | 13-Jun-03 | | Romack |
| Scoliopteryx | libatrix | Noctuidae | 11-Oct-03 | | Romack |
| Sideridis | maryx | Noctuidae | 13-Jun-03 | | Romack |

| | | | | | |
|---------------|-------------|-----------|-----------|------------|---------|
| Sideridis | maryx | Noctuidae | 25-Jun-03 | | McCabe |
| Sideridis | maryx | Noctuidae | 27-Jun-03 | | Romack |
| Sideridis | maryx | Noctuidae | 6-Jul-03 | Malaise | |
| Sideridis | maryx | Noctuidae | 6-Jul-03 | | Romack |
| Sideridis | maryx | Noctuidae | 13-Jul-03 | | Romack |
| Sideridis | maryx | Noctuidae | 14-Jul-03 | Malaise | |
| Sideridis | maryx | Noctuidae | 20-Jul-03 | | Romack |
| Sideridis | maryx | Noctuidae | 26-Jul-03 | | R&McC |
| Spiramater | lutra | Noctuidae | 13-Jun-03 | | Romack |
| Spiramater | lutra | Noctuidae | 27-Jun-03 | | Romack |
| Spiramater | lutra | Noctuidae | 6-Jul-03 | | Romack |
| Spiramater | lutra | Noctuidae | 14-Jul-03 | Malaise | |
| Syngrapha | alias | Noctuidae | 6-Jul-03 | Malaise | |
| Syngrapha | epigaea | Noctuidae | 27-Jun-03 | | Romack |
| Syngrapha | epigaea | Noctuidae | 6-Jul-03 | Malaise | |
| Syngrapha | epigaea | Noctuidae | 20-Jul-03 | | Romack |
| Syngrapha | epigaea | Noctuidae | 26-Jul-03 | | R&McC |
| Syngrapha | viridisigma | Noctuidae | 6-Jul-03 | Malaise | |
| Trichordestra | legitima | Noctuidae | 20-Jul-03 | | Romack |
| Trichordestra | tacoma | Noctuidae | 13-Jun-03 | | Romack |
| Trichosilia | geniculata | Noctuidae | 24-Aug-03 | | Romack |
| Trichosilia | mollis | Noctuidae | 13-Jul-03 | | Romack |
| Trichosilia | mollis | Noctuidae | 14-Jul-03 | Malaise | |
| Trichosilia | mollis | Noctuidae | 20-Jul-03 | | Romack |
| Trichosilia | mollis | Noctuidae | 26-Jul-03 | | McCabe |
| Ulolonche | modesta | Noctuidae | 13-Jun-03 | | Romack |
| Xanthia | flavago | Noctuidae | 11-Oct-03 | | Romack |
| Xestia | badicollis | Noctuidae | 13-Sep-03 | | malaise |
| Xestia | badicollis | Noctuidae | 13-Sep-03 | | Romack |
| Xestia | c-nigrum | Noctuidae | 25-Jun-03 | | McCabe |
| Xestia | c-nigrum | Noctuidae | 25-Jun-03 | | McCabe |
| Xestia | c-nigrum | Noctuidae | 11-Oct-03 | | Romack |
| Xestia | praevia | Noctuidae | 14-Jul-03 | Malaise | |
| Xestia | praevia | Noctuidae | 24-Aug-03 | | Romack |
| Xestia | praevia | Noctuidae | 13-Sep-03 | | malaise |
| Xestia | praevia | Noctuidae | 13-Sep-03 | | Romack |
| Xestia | praevia | Noctuidae | 26-Jul-03 | | McCabe |
| Xestia | youngii | Noctuidae | 24-Aug-03 | | Romack |
| Xestia | youngii | Noctuidae | 13-Sep-03 | | malaise |
| Xestia | youngii | Noctuidae | 13-Sep-03 | | Romack |
| Xestia | youngii | Noctuidae | 13-Sep-03 | | Romack |
| Xestia | youngii | Noctuidae | 10-Oct-03 | | Romack |
| Xylena | curvimacula | Noctuidae | 20-May-98 | | Stanton |
| Xylena | thoracica | Noctuidae | 18-May-03 | clear/cold | McCabe |
| Xylena | thoracica | Noctuidae | 13-Sep-03 | | Romack |
| Xylena | thoracica | Noctuidae | 11-Oct-03 | | Romack |
| Xylotype | capax | Noctuidae | 13-Sep-03 | | malaise |
| Xylotype | capax | Noctuidae | 13-Sep-03 | | Romack |
| Xylotype | capax | Noctuidae | 11-Oct-03 | | Romack |
| Xylotype | capax | Noctuidae | 11-Oct-03 | | malaise |
| Zale | aeruginosa | Noctuidae | 18-May-03 | at bait | McCabe |
| Zale | aeruginosa | Noctuidae | 13-Jun-03 | | Romack |

| | | | | |
|--------------|---------------------|--------------|--------------------------|---------|
| Zale | aeruginosa | Noctuidae | 25-Jun-03 | McCabe |
| Zale | duplicata duplicata | Noctuidae | 26-May-97 | McCabe |
| Zale | duplicata largera | Noctuidae | 13-Jun-03 | Romack |
| Zale | duplicata largera | Noctuidae | 25-Jun-03 | McCabe |
| Zale | horrida | Noctuidae | 27-Jun-03 | Romack |
| Zale | minerea | Noctuidae | 13-Jun-03 | Romack |
| Clostera | albosigma | Notodontidae | 13-Jun-03 | Romack |
| Clostera | albosigma | Notodontidae | 27-Jun-03 | Romack |
| Clostera | inclusa | Notodontidae | 6-Feb-04 (reared x pupa) | McCabe |
| Dasylophia | thyatiroides | Notodontidae | 13-Jul-03 | Romack |
| Dasylophia | thyatiroides | Notodontidae | 26-Jul-03 | McCabe |
| Furcula | occidentalis | Notodontidae | 13-Jun-03 | Romack |
| Gluphisia | avimacula | Notodontidae | 18-May-03 clear/cold | McCabe |
| Gluphisia | septentrionalis | Notodontidae | 25-Jun-03 | McCabe |
| Gluphisia | septentrionalis | Notodontidae | 27-Jun-03 | Romack |
| Gluphisia | septentrionalis | Notodontidae | 13-Jul-03 | Romack |
| Gluphisia | septentrionalis | Notodontidae | 20-Jul-03 | Romack |
| Gluphisia | septentrionalis | Notodontidae | 13-Sep-03 | Romack |
| Heterocampa | biundata | Notodontidae | 27-Jun-03 | Romack |
| Heterocampa | biundata | Notodontidae | 6-Jul-03 | Romack |
| Heterocampa | guttivitta | Notodontidae | 28-Jun-98 | Stanton |
| Hyperaeschra | georgica | Notodontidae | 6-Jul-03 | Romack |
| Marthesia | macrurcompa | Notodontidae | 20-Jul-03 | Romack |
| Notodonta | simplaria | Notodontidae | 13-Jun-03 | Romack |
| Notodonta | simplaria | Notodontidae | 20-Jul-03 | Romack |
| Odontesia | elegans | Notodontidae | 13-Jun-03 | Romack |
| Odontesia | elegans | Notodontidae | 27-Jun-03 | Romack |
| Odontesia | elegans | Notodontidae | 6-Jul-03 | Romack |
| Odontesia | elegans | Notodontidae | 20-Jul-03 | Romack |
| Peridea | angulidens | Notodontidae | 13-Jul-03 | Romack |
| Peridea | basitriens | Notodontidae | 13-Jun-03 | Romack |
| Peridea | ferruginea | Notodontidae | 13-Jun-03 | Romack |
| Peridea | ferruginea | Notodontidae | 27-Jun-03 | Romack |
| Peridea | ferruginea | Notodontidae | 20-Jul-03 | Romack |
| Schizura | badia | Notodontidae | 6-Jul-03 | Romack |
| Schizura | badia | Notodontidae | 20-Jul-03 | Romack |
| Schizura | badia | Notodontidae | 26-Jul-03 | McCabe |
| Schizura | badia | Notodontidae | 26-Jul-03 | McCabe |
| Schizura | ipomoeae | Notodontidae | 6-Jul-03 | Romack |
| Schizura | leptinoides | Notodontidae | 13-Jun-03 | Romack |
| Schizura | unicornis | Notodontidae | 25-Jun-03 | McCabe |
| Schizura | unicornis | Notodontidae | 27-Jun-03 | Romack |
| Schizura | unicornis | Notodontidae | 6-Jul-03 | Romack |
| Symmerista | albifrons | Notodontidae | 27-Jun-03 | Romack |
| Chlosyne | harrisii | Nymphalidae | 27-Jun-03 | Romack |
| Chlosyne | nycteis | Nymphalidae | 27-Jun-03 | Romack |
| Euphydryas | phaeton | Nymphalidae | 27-Jun-03 | Romack |
| Limnitis | archippus | Nymphalidae | 25-Jun-03 sight/daytime | McCabe |
| Limnitis | archippus | Nymphalidae | 27-Jun-03 | Romack |
| Limnitis | arthemis | Nymphalidae | 25-Jun-03 | McCabe |
| Limnitis | arthemis | Nymphalidae | 27-Jun-03 | Romack |
| Nymphalis | antiopa | Nymphalidae | 27-Jun-03 | Romack |

| | | | | | |
|-------------|-----------------|--------------|-----------|---------------|---------|
| Nymphalis | milberti | Nymphalidae | 27-Jun-03 | | Romack |
| Nymphalis | milberti | Nymphalidae | 6-Jul-03 | | Romack |
| Phyciodes | cocyta | Nymphalidae | 27-Jun-03 | | Romack |
| Phyciodes | tharos | Nymphalidae | 6-Jul-03 | | Romack |
| Polygonia | comma | Nymphalidae | 20-Jul-03 | | Romack |
| Polygonia | progne | Nymphalidae | 6-Jul-03 | | Romack |
| Polygonia | progne | Nymphalidae | 20-Jul-03 | | Romack |
| Speyeria | atlantis | Nymphalidae | 27-Jun-03 | | Romack |
| Speyeria | atlantis | Nymphalidae | 20-Jul-03 | | Romack |
| Vanessa | atalanta | Nymphalidae | 18-May-03 | sight/daytime | McCabe |
| Vanessa | atalanta | Nymphalidae | 27-Jun-03 | | Romack |
| Vanessa | virginiensis | Nymphalidae | 18-May-03 | sight/daytime | McCabe |
| Vanessa | virginiensis | Nymphalidae | 27-Jun-03 | | Romack |
| Papilio | canadensis | Papilionidae | 13-Jun-03 | | Romack |
| Colias | interior | Pieridae | 25-Jun-03 | | McCabe |
| Colias | interior | Pieridae | 27-Jun-03 | | Romack |
| Colias | interior | Pieridae | 6-Jul-03 | | Romack |
| Colias | interior | Pieridae | 14-Jul-03 | Malaise | |
| Colias | interior | Pieridae | 20-Jul-03 | | Romack |
| Colias | interior | Pieridae | 26-Jul-03 | | McCabe |
| Pieris | napi | Pieridae | 20-May-98 | | Stanton |
| Actias | luna | Saturniidae | 13-Jun-03 | | Romack |
| Actias | luna | Saturniidae | 25-Jun-03 | | McCabe |
| Anisota | rubicunda | Saturniidae | 13-Jun-03 | | Romack |
| Anisota | rubicunda | Saturniidae | 26-Jul-03 | | R&McC |
| Antheraea | polyphemus | Saturniidae | 6-Jul-03 | | McCabe |
| Eacles | imperialis pini | Saturniidae | 20-Jul-03 | | Romack |
| Eacles | imperialis pini | Saturniidae | 26-Jul-03 | | R&McC |
| Coenonympha | inornata | Satyridae | 13-Jun-03 | | Romack |
| Coenonympha | inornata | Satyridae | 25-Jun-03 | | McCabe |
| Enodia | anthon | Satyridae | 20-Jul-03 | | Romack |
| Megisto | cymela | Satyridae | 27-Jun-03 | | Romack |
| Satyrodes | eurydice | Satyridae | 27-Jun-98 | | Stanton |
| Ceratoma | undulosa | Sphingidae | 20-Jul-03 | | Romack |
| Ceratoma | undulosa | Sphingidae | 13-Jun-03 | | Romack |
| Ceratoma | undulosa | Sphingidae | 27-Jun-03 | | Romack |
| Cressonia | juglandis | Sphingidae | 27-Jun-03 | | Romack |
| Cressonia | juglandis | Sphingidae | 6-Jul-03 | | Romack |
| Darapsa | choerilis | Sphingidae | 13-Jun-03 | | Romack |
| Darapsa | choerilis | Sphingidae | 27-Jun-03 | | Romack |
| Darapsa | myron | Sphingidae | 27-Jun-03 | | Romack |
| Darapsa | myron | Sphingidae | 20-Jul-03 | | Romack |
| Dolba | hyloeus | Sphingidae | 6-Jul-03 | | Romack |
| Dolba | hyloeus | Sphingidae | 14-Jul-03 | Malaise | |
| Dolba | hyloeus | Sphingidae | 26-Jul-03 | | McCabe |
| Hemaris | diffinis | Sphingidae | 13-Jun-03 | | Romack |
| Hemaris | diffinis | Sphingidae | 6-Jul-03 | Malaise | |
| Hyles | galium | Sphingidae | 27-Jun-03 | | Romack |
| Lapara | bombycoides | Sphingidae | 27-Jun-03 | | Romack |
| Pachysphinx | modesta | Sphingidae | 25-Jun-03 | | McCabe |
| Pachysphinx | modesta | Sphingidae | 6-Jul-03 | | Romack |
| Paonias | astylus | Sphingidae | 26-Jun-98 | | Stanton |

| | | | | |
|----------------|-----------------|-------------|-------------------|--------|
| Paonias | excaecatus | Sphingidae | 27-Jun-03 | Romack |
| Smerinthus | jamaicensis | Sphingidae | 13-Jun-03 | Romack |
| Sphecodina | abbotti | Sphingidae | 25-Jun-03 at bait | McCabe |
| Sphinx | kalmiae | Sphingidae | 25-Jun-03 at bait | McCabe |
| Sphinx | kalmiae | Sphingidae | 27-Jun-03 | Romack |
| Sphinx | poecila | Sphingidae | 13-Jun-03 | Romack |
| Sphinx | poecila | Sphingidae | 27-Jun-03 | Romack |
| Sphinx | poecila | Sphingidae | 6-Jul-03 | Romack |
| Habrosyne | scripta | Thyatiridae | 27-Jun-03 | Romack |
| Habrosyne | scripta | Thyatiridae | 20-Jul-03 | Romack |
| Pseudothyatira | cymatophoroides | Thyatiridae | 20-Jul-03 | Romack |