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## THE LEPIDOPTERA OF FOWLER WOODS STATE NATURE PRESERVE, RICHLAND COUNTY, OHIO.

Roy W. Rings<sup>1</sup> and Eric H. Metzler<sup>2</sup>

### ABSTRACT

A survey of the Lepidoptera occurring at Fowler Woods State Nature Preserve in Richland County, Ohio was conducted from 1986 to 1988. Sampling was done by ultraviolet light traps, mercury vapor light and ultraviolet light and collecting sheet, bait traps, sugaring and netting. A total of 419 species and forms was identified and tabulated. It was estimated that the actual number of species at this site is 655. Representative specimens have been deposited in the Insect Reference Collection at the Ohio Agricultural Research and Development Center, The Ohio State University, Wooster, Ohio.

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This is the fourth in a series of papers which document the species, forms and present status of Lepidoptera in Ohio's recreational areas and nature preserves. We have previously reported on the Lepidoptera of the Wilderness Center in Stark County, Atwood Lake Park in Carroll and Tuscarawas counties, and the Mohican State Forest—Park complex in Ashland County (Rings et al. 1987, Rings and Metzler 1988, and Rings and Metzler 1989).

This paper reports the results of a three-year survey of Lepidoptera conducted at the Fowler Woods State Nature Preserve in Richland County, Ohio. Publication of this information establishes a data base upon which to build a more comprehensive body of knowledge of the non-game wildlife in this area.

### DESCRIPTION OF THE STUDY SITE

Fowler Woods State Nature Preserve is situated in Butler Township in northeast Richland County (Figure 1). This 133.40 acre mature forest is owned and managed by the Division of Natural Areas and Preserves, Ohio Department of Natural Resources.

The woods is primarily a beech-maple community, grading into swamp forests in the low lying areas. Several low areas are covered by water most of the year and are occupied by buttonbush swamp. The remainder is swamp forest with mature beech-maple woods on adjacent higher ground. Ash (*Fraxinus* sp.), American linden (*Tilia americana*), shagbark hickory (*Carya ovata*) and wild cherry (*Prunus serotina*) trees also occur in the woods. In the northeast section there are a number of volunteer apple (*Malus malus*) seedlings. There is a rich display of spring wildflowers in the

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Figure 1. Location of Fowler Woods State Nature Preserve in Ohio.

forest. Significant plants include royal fern (*Osmunda regalis*), swamp saxifrage (*Saxifraga virginensis*), dwarf ginseng (*Panax trifolium*), golden saxifrage (*Chrysosplenium americanum*), common marshmarigold (*Caltha palustris*) and skunk cabbage (*Symplocarpus foetidus*).

Most of the soil in the Preserve is Cardington, with a small area of Bennington soil at the western end (Redmond et al. 1975). These light-colored, nearly level to moderately sloping soils have formed in moderately calcareous, clay loam till. They are moderately productive, medium to strongly acid, moderate in moisture-supplying capacity, fertility and organic matter. Cardington soils are moderately well-drained, gently to moderately sloping and need erosion control. Bennington soils are nearly level to gently sloping, somewhat poorly drained, and need drainage. These soils are mostly used for general farm crops and pasture. The preserve is surrounded by farms devoted to general farming and cash grain crops. The crops

grown are corn, soybeans, wheat and oats. The grain crops are fed to cattle and hogs.

### MATERIALS AND METHODS

Collecting was done when maximum daily temperatures exceeded 16.9° C. In 1986 a total of 15 collecting trips were made to the study site from 25 February to 30 September. Two field trips were made in November, 1987, while 13 trips were made in 1988 between 8 March and 30 September.

During daylight hours butterflies and skippers were netted with standard, insect-collection nets. Some nymphalids were captured in bait traps. Also during this period of time foliage was searched for lepidopterous larvae. Since most moths are nocturnal and are attracted to baits and lights most collecting activities were conducted at night. The following techniques were employed in moth collections:

**Black light and sheet**—A single 15 watt ultraviolet light, powered by a portable battery, was hung on a white sheet, usually deep in the forest. Desirable moths were selected from the sheet and placed in killing jars.

**Black light traps**—Two black light traps were operated using a 15 watt ultraviolet light powered by DC batteries (Elisco General Purpose "Black light" Trap manufactured by Elisco Inc., Philadelphia, PA). These traps were operated in open areas along the edge of the woodland. However, the traps were placed deep in the woodland on nights when the moon was full, or nearly full. Moths which were attracted to the light collided into a baffle and were then funnelled down into a collecting chamber where they were killed by vapors from an insect strip (dichlorvos) and a container of chloroform. All moths collected were placed in plastic boxes and taken to the laboratory at the OARDC where they were identified, sexed and recorded. Desirable specimens were spread, labeled and incorporated into the Insect Reference Collection at the OARDC, Wooster, Ohio.

**Bait traps**—Two bait traps were employed in this study. They were 35 × 20 × 20 cm with 2.5 × 2.5 cm wooden frames covered with 16 mesh aluminum screening. A fermented, liquid bait mixture (described under "sugaring") was placed in a plastic container in the bottom of the trap. An inverted, screen funnel was built into the trap just above the bait. After feeding on the bait, moths flew upward through the funnel and into the enclosed trap. The traps were hung in trees in deep woods at a height of about 150 cm to avoid damage by raccoons and skunks.

**Mercury vapor light and sheet**—A 160 watt mercury vapor self-ballasted lamp, powered by a 600 watt Honda generator was also used to attract moths at night. The lamp was mounted on a steel tripod with legs measuring 330 cm so that the lamp was about 300 cm above the ground and thus attracted moths from a considerable distance. A supplementary 15 watt DC black light was mounted 25 cm from a white sheet, 225 by 285 cm, upon which the moths could alight. This setup was used in open areas to attract sphingids and saturniids. Desirable specimens were then be selected from the sheet and placed in killing jars. Specimens thus collected were taken to the OARDC laboratory for processing.

**Sugaring**—A bait to attract moths was painted on trees as an additional collecting technique. The bait consisted of a mixture of macerated peaches, grapes, plums, plus sugar and yeast which was allowed to ferment. Just before use a small amount of rum was added to give the bait a more aromatic odor. The bait was designed to simulate one of the natural foods of moths—fermenting tree sap. Trees along the boardwalk nature trail were painted with the bait mixture. The baited areas were examined with a flashlight every 30 to 60 minutes and desirable specimens were collected in killing jars.

## RESULTS AND DISCUSSION

Species and forms are listed (Table 1) according to the most recent regional checklist of macrolepidoptera (Hodges et al. 1983). The numbers preceding each species are the Hodges checklist designations. When more than one collection date is listed, the first is the earliest record of collection, and the second is the latest, within a calendar year. Following the date of collection is the method of collection abbreviated as follows: BL, ultraviolet light and sheet; BLT, black light trap; BT, screened bait trap baited with fermenting sugar bait; S, sugaring; L, larval collection; MVL, mercury vapor light and sheet; N, netted; and O, observed but not collected.

A total of 419 species of Lepidoptera, representing 23 families, was collected and identified in the course of this study. Eight of these were butterflies, one a skipper and 410 were moths (Table 1). None of the species collected is known to be "endangered", "threatened", or "of special concern". This terminology follows that of the Department of Natural Resources, Division of Wildlife: "endangered" = in danger of being extirpated; "threatened" = likely to become endangered if no action is taken; "special concern" = rare, peripheral, or status unknown.

Although several species were collected which have been recorded as serious defoliators of hardwood forests, our collections indicate that populations were not sufficiently high to cause concern. Some of these were the spring cankerworm, elm spanworm, hemlock looper, forest tent caterpillar, eastern tent caterpillar, catalpa sphinx, yellow-necked caterpillar, walnut caterpillar, saddled prominent, fall webworm, and the white-marked tussock moth.

We made a special effort to sample the population of moths in the genus *Catocala*. These underwing moths are favorites of both amateur and professional moth collectors. Most of the species have drab, brownish-gray fore wings but brilliantly colored, banded hind wings of pink, red, and orange. During this study 19 species of underwing moths were taken. The species collected in order of decreasing numbers were: *Catocala cerogama*, *C. cara*, *C. ilia*, *C. ultronia*, *C. resecta*, *C. obscura*, *C. grynea*, *C. amatrrix*, *C. neogama*, *C. residua*, and one each of: *C. habilis*, *C. serena*, *C. palaeogama*, *C. blandula*, *C. insolabilis*, *C. nebulosa*, *C. subnata*, *C. parta*, and *C. mira*.

A total of 4,569 specimens were taken by all methods from 1986 through 1988. The percentage taken by each technique was: black light trap—39.5; mercury vapor light—25.8; black light and sheet—9.5; sugaring—23.3 and bait trap and pupal collections—1.9.

A comparison of the number of Lepidoptera collected each month from 25 February to 30 September in 1986, November in 1987 and from 8 March to 30 September in 1988 indicates that more specimens were collected in April than any other month. The following percentage of the total number of specimens (4,569) collected for all of the years were: February—.02; March—5.0; April—25.1; May—12.1; June—18.5; July—4.1; August—17.0; September—14.8; October 0.04; and November 3.4. In most years, collecting can be started with the first few warm days in February and continue until the end of October, or even into November.

To estimate the complete lepidopterous fauna of Fowler Woods, which would include species that should occur but were not collected during the study, a hypothetical list of common species that should occur was prepared from collections made in other counties in northeastern Ohio (Carroll, Holmes, Knox, Ashland, Tuscarawas and Wayne). By comparing species on the actual list with those on the hypothetical list, it is estimated that about 70.0% of the moths that should occur in the area were collected. For butterflies and skippers, approximately 23.7% of the estimated fauna were taken. These differences reflect the interests, competence and capabilities of the authors. By projecting the percentage of moths and butterflies that should occur with the actual numbers collected it can be estimated that the total number of species at this site would be approximately 633 (38 species of butterflies and skippers and 595 species of moths).

Rings et al. (1987) reported 511 species of Lepidoptera in an annotated checklist of Lepidoptera occurring at the Wilderness Center in Stark County. That study was conducted over a nine year period. In 1988, 428 species and forms were reported from Atwood Lake in Carroll and Tuscarawas counties (Rings and Metzler 1988). Our three year study of the lepidopterous fauna of Mohican State Forest yielded 437 species (Rings and Metzler 1989). From these reports and from the present study it may be concluded that from 400 to 500 species commonly occur in a given favorable locality in Ohio and that probably 600 to 700 species may be taken in a locality characterized by a high host plant diversity, particularly if collections are made at frequent intervals over a period of five or more years.

## ACKNOWLEDGMENT

We are indebted to Dr. Charles V. Covell, Jr., University of Louisville for the determination of geometrids.

Table 1. — Species of Lepidoptera collected at Fowler Woods State Nature Preserve, Richland County, Ohio 1986 to 1988. Number preceding common name is from checklist by Hodges (1983). Abbreviations are: BL, black light and sheet; BLT, black light trap; BT, bait trap; L, larval collection; MVL, mercury vapor light and sheet; N, netted; PH, pheromone trap; S, sugaring.

FAMILY HEPIALIDAE	
18	<i>Sthenopsis argenteomaculatus</i> (Harr.) 8 Jun 1986 BL 1; 27 May 1988 MVL 1.
FAMILY OECOPHORIDAE	
1011	<i>Antaeotricha schlaegeri</i> (Zell.) 14 May 1986 BL 2; 27 May–6 Jun 1988 BLT 5, MVL 5.
1014	<i>Antaeotricha leucillana</i> (Zell.) 6 Jun 1988 MVL 1.
FAMILY YPONOMEUTIDAE	
2401	<i>Atteva punctella</i> (Cram.) 16 Aug 1986 BL 1; 30 Sep 1988 BLT 1.
FAMILY SESIIDAE	
2554	<i>Synanthedon acerni</i> (Clem.) 8 Jun 1988 BL 3.
FAMILY TORTRICIDAE	
3597	<i>Argyrotaenia velutinana</i> (Wlk.) 25 Apr 1986 BL 1; 27 May 1988 PH 1.
3632	<i>Choristoneura fractivittana</i> (Clem.) 27 May 1988 MVL 1.
3635	<i>Choristoneura rosaceana</i> (Harr.) 6 Jun 1988 BLT 11, MVL 9, S 1.
3672	<i>Syndemis afflictana</i> (Wlk.) 6 Jun 1988 BLT 1, MVL 1.
3686	<i>Clepsis melaleucana</i> (Wlk.) 6 Jun 1988 MVL 1.
FAMILY HESPERIIDAE	
4047	<i>Wallengrenia egeremet</i> (Scudder) 16 Apr 1988 N 2.
FAMILY PIERIDAE	
4210	<i>Colias eurytheme</i> Bdv. 18 Sep 1986 1.
FAMILY LYCAENIDAE	
4251	<i>Lycaena phlaeas americana</i> (L.) 26 Jun 1986 N 1.
FAMILY NYMPHALIDAE	
4432	<i>Nymphalis antiopa</i> (L.) 25 Apr 1986 BT 1.
4437	<i>Vanessa atalanta</i> (L.) 25 Apr 1988 BT 1.
4450	<i>Speyeria cybele</i> (F.) 26 Jun 1986 N 2.
4481	<i>Phyciodes tharos</i> (Drury) 18 Oct 1986 N 1; 27 May 1988 N 3.
FAMILY SATYRIDAE	
4578	<i>Megisto cymela</i> (Cram.) 26 Apr 1986 N 1.
4587	<i>Cercyonis pegala</i> (F.) 26 Jun 1986 N 6.

## FAMILY LIMACODIDAE

- 4652 *Tortricidea testacea* Pack. 14 May-8 Jun 1986 BL 3; 27 May-6 Jun 1988 BLT 13, MVL 5.  
 4654 *Tortricidea flexuosa* (Grt.) 15 Jul 1988 MVL 1.  
 4659 *Packardia geminata* (Pack.) 6 Jun 1988 MVL 4.  
 4665 *Lithacodes fasciola* (H.-S.) 15 Jul-1 Aug 1988 BL 1, BLT 3, MVL 2.  
 4667 *Apoda y-inversum* (Pack.) 26 Jun 1986 BLT 1.  
 4681 *Isa textula* (H.-S.) 26 Jun 1986 BL 5.  
 4697 *Euclaea delphinii* (Bdv.) 6 Jun-15 Jul 1988 BLT 2, MVL 2.  
 4700 *Sabine stimulea* (Clem.) 15 Jul 1988 MVL 1.

## FAMILY PYRALIDAE

- 4949 *Ostrinia nubilalis* (Hbn.) 8 Jun-18 Sep 1986 BL 21; 27 May-15 Sep 1988 BLT 2, MVL 5, S 1. Two generations.  
 4953 *Phlyctaenia coronata* (Hufn.) 6 Jun 1988 MVL 1.  
 5159 *Desmia funeralis* (Hbn.) 27 May 1988 MVL 2.  
 5226 *Palpita magniferalis* (Wlk.) 27 May 1988 BLT 1, MVL 7.  
 5228 *Polygrammodes flavidalis* (Gn.) 1 Aug 1988 BLT 1.  
 5241 *Pantographa limata* (G. & R.) 9 Jul 1986 BLT 17; 15 Jul-1 Aug 1988 BLT 7, S 2. Multiple generations.  
 5524 *Hypsopygia costalis* (F.) 16 Aug 1986 BLT 1; 30 Sep 1988 BLT 3.

## FAMILY THYATIRIDAE

- 6237 *Pseudothyatira cymatophoroides* (Gn.) 9 Jul-16 Aug 1986 BL 2, S 3; 6 Jun 1988 S 3.  
 6240 *Euthyatira pudens* (Gn.) 17 Apr-15 Jul 1988 BLT 1, MVL 1, S 2.

## FAMILY DREPANIDAE

- 6255 *Oreta rosea* (Wlk.) 26 Jun-16 Aug 1986 BL 5.  
 6255 *Oreta rosea* f. *irrorata* (Pack.) 16 Aug 1986 BL 1.

## FAMILY GEOMETRIDAE

- 6273 *Itame pustularia* (Gn.) 15 Jul 1988 MVL 1, S 1.  
 6326 *Semiothisa aemulataria* (Wlk.) 14 May 1986 Bl 1; 27 May-6 Jun 1988 BLT 3, MVL 7.  
 6335 *Semiothisa aequiferaria* (Wlk.) 27 May 1988 MVL 1.  
 6340 *Semiothisa minorata* (Pack.) 27 May 1988 MVL 1; 1 Aug 1988 BLT 2.  
 6342 *Semiothisa bisignata* (Wlk.) 1 Aug 1988 BLT 1.  
 6386 *Semiothisa ocellinata* (Gn.) 1 Aug-10 Sep 1988 BLT 2.  
 6449 *Glena cribrataria* (Gn.) 3 Apr 1986 BL 1.  
 6584 *Anacamptodes humaria* (Gn.) 25 Apr 1986 BLT 1.  
 6588 *Iridopsis larvaria* (Gn.) 14 May 1986 BL 1, BLT 1; 27 May 1988 BLT 4, MVL 7.  
 6590 *Anavitrinella pampinaria* (Gn.) 27 May 1988 BLT 10.  
 6594 *Cleora sublunaria* (Gn.) 17 Apr 1988 BL 2.  
 6598 *Protoboarmia porcelaria* (Gn.) 3 Apr 1986 BL 1.  
 6599 *Epimecis hortaria* (F.) 25 Apr-26 Jun 1986 BL 2, BLT 2; 1 May-1 Aug 1988 BLT 6, MVL 3.  
 6620 *Melanolophia canadaria* (Gn.) 25 Apr-14 May 1986 BL 3, BLT 2; 1 May-1 Aug 1988 BL 1, BLT 1, MVL 3.  
 6640 *Biston betularia* f. *swettaria* (B. & McD.) 14 May-26 Jun 1986 Bl 1, BLT 1.  
 6640a *Biston betularia* f. *cognataria* (Gn.) 14 May 1986 BL 1; 27 May 1988 MVL 1.  
 6654 *Hypagyrtis unipunctata* (Haw.) 14 May-8 Jun 1986 BL 4; 6 Jun 1988 BLT 3, MVL 5.  
 6655 *Hypagyrtis esther* (Barnes) 14 May-8 Jun 1986 BL 3.  
 6658 *Phigalia titea* (Cram.) 14 May 1986 BL 1; 4 Apr 1988 BL 10, BLT 1.  
 6660 *Phigalia strigataria* (Minot) 4 Apr 1988 BL 2, BLT 1.  
 6662 *Paleacrita vernata* (Peck) 13 Mar 1986 BL 2; 24 Mar 1988 BL 4, BLT 3.  
 6667 *Lomographa vestaliata* (Gn.) 14 May 1986 BL 1; 27 May 1988 BLT 1, MVL 1.  
 6668 *Lomographa glomeraria* (Grt.) 25 Apr 1986 BL 2, BLT 3; 17 Apr-1 May 1988 BLT 2, MVL 5.

- 6720 *Lyttosis unitaria* (H.-S.) 26 Jun 1986 BL 7, BLT 4.  
 6724 *Euchlaena serrata* (Drury) 8-26 Jun 1986 BL 3, BLT 5.  
 6726 *Euchlaena obtusaria* (Hbn.) 6 Jun 1988 BLT 6, MVL 3.  
 6729 *Euchlaena johnsonaria* (Fitch) 22 Aug 1988 BL 1; 27 May-6 Jun 1988 MVL 2.  
 6733 *Euchlaena amoenaria* (Gn.) 27 May 1988 BLT 1.  
 6740 *Xanthotype urticaria* Swett 6-16 Aug 1986 BL 1, MVL 1.  
 6743 *Xanthotype sospeta* (Drury) 8 Jun-22 Aug 1986 BL 2, BLT 2; 1 Aug 1988 BLT 1.  
 6753 *Pero honestaria* (Wlk.) 9-14 May 1986 BL 12, BLT 7; 27 May 1988 BLT 1.  
 6754 *Pero hubneria* (Gn.) 25 Apr 1986 BL 1; 27 May 1988 BLT 1.  
 6795 *Campaea perlata* (Gn.) 8 Jun-22 Aug 1986 BL 7, BLT 4; 27 May-15 Sep 1988 BLT 55, MVL 14, S 5.  
 6797 *Ennomos magnaria* Gn. 1 Aug-30 Sep 1986 BL 7.  
 6798 *Ennomos subsignaria* (Hbn.) 8 Jun 1986 BL 3.  
 6815 *Gueneria similaria* (Wlk.) 27 May 1988 BLT 1.  
 6826 *Metarranthis hypocharia* (H.-S.) 8 Jun 1986 BL 1; 6 Jun 1988 BLT 14.  
 6835 *Cepphis armataria* (H.-S.) 8 Jun 1986 BL 1.  
 6836 *Anagoga occiduaria* (Wlk.) 14 May 1986 BL 1; 1 May-15 Jul 1988 BL 1, BLT 1.  
 6837.1 *Probole alienaria nyssaria* (Gn.) 27 May-6 Jun 1988 BLT 19, MVL 13.  
 6840 *Plagodis serenaria* H.-S. 14 May 1986 BL 1; 27 May-6 Jun 1988 BLT 16, MVL 4.  
 6841 *Plagodis keutzingeri* (Grt.) 14 May-1 Aug 1986 BL 12; 27 May-6 Jun 1988 BLT 2, MVL 2.  
 6884 *Besma endropiaria* (G. & R.) 14 May 1986 BL 1.  
 6885 *Besma quercivoraria* (Gn.) 14 May 1986 BL 1; 27 May-6 Jun 1988 BLT 4, MVL 1.  
 6888 *Lambdina fiscellaria* (Gn.) 6 Jun 1988 BLT 1.  
 6941 *Eusarca confusaria* Hbn. 8-26 Jun 1986 BL 6, BLT 6.  
 6963 *Tetracis crocallata* Gn. 9-14 May 1986 BL 4, BLT 1; 27 May-1 Aug 1988 BLT 3.  
 6964 *Tetracis cachexiata* Gn. 9-14 May 1986 BL 2, BLT 1; 27 May-6 Jun 1988 BLT 7.  
 6966 *Eutrapela clemataria* (J. E. Smith) 3 Apr-9 Jul 1986 BL 9, BLT 1; 1 May-30 Sep 1988 BLT 7, MVL 4.  
 6982 *Prochoerodes transversata* (Drury) 26 Jun-30 Sep 1986 BL 7, BLT 1, S 1; 30 Sep 1988 BLT 4.  
 6987 *Antepione thisoaria* (Gn.) 14 May 1986 BLT 1; 27 May 1988 BLT 1.  
 7046 *Nemoria bistriaria* Hbn. 27 May-6 Jun 1988 MVL 5.  
 7048 *Nemoria mimosaria* (Gn.) 6 Jun 1988 MVL 1.  
 7053 *Dichorda iridaria* (Gn.) 14 May 1985 BL 2; 27 May 1988 MVL 1.  
 7136 *Cyclophora packardi* (Prout) 27 May 1988 BLT 1.  
 7146 *Haematopsis grataria* (F.) 1 Aug 1988 BL 1.  
 7159 *Scopula limboundata* (Haw.) 15 Jul 1988 BL 1.  
 7189 *Dysstroma hersiliata* (Gn.) 8-26 Jun 1986 BL 5.  
 7196 *Eulithis diversilineata* (Hbn.) 1 Aug 1986 BLT 1: 1 Aug 1988 BL 1, BLT 2.  
 7292 *Hydria prunivorata* (Fgn.) 26 Jun 1986 BL 1; 6 Jun 1988 MVL 1.  
 7329 *Anticlea vasiliata* Gn. 17 Apr-1 May 1988 BL 1, MVL 2.  
 7333 *Stamnodes gibbicostata* (Wlk.) 18 Sep 1986 BL 1; 15 Sep 1988 BLT 4, S 2.  
 7388 *Xanthorhoe ferrugata* (Clerck) 25 Apr 1986 BL 1; 1 May-15 Sep 1988 BLT 3, MVL 1.  
 7390 *Xanthorhoe lacustrata* (Gn.) 17 Apr-17 May 1988 BL 2.  
 7399a *Euphyia unangulata intermediata* (Gn.) 22 Aug 1986 BLT 1.  
 7414 *Orthonama obstipata* (F.) 14 May 1986 BL 1.  
 7416 *Orthonama centrostrigaria* (Woll.) 22 Aug 1986 BL 1; 15 Sep 1988 BLT 1.  
 7422 *Hydrelia inornata* (Hulst) 27 May 1988 BL 1.  
 7430 *Trichodezia albovittata* (Gn.) 27 May 1988 MVL 1.  
 7440 *Eubaphe mendica* (Wlk.) 8-26 Jun 1986 BL 3; 1 Aug 1988 BLT 1.  
 7445 *Horisma intestinata* (Gn.) 14 May 1986 BL 1; 27 May-6 Jun 1988 BLT 1, MVL 1.  
 7645 *Heterophleps refusaria* (Wlk.) 8 Jun 1986 BL 1, S 1; 6 Jun 1988 S 1.  
 7647 *Heterophleps triguttaria* H.-S. 14 May-22 Aug 1986 BLT 1, S 2; 6 Jun 1988 S 3.  
 7648 *Dyspteris abortivaria* (H.-S.) 27 May-6 Jun 1988 BL 1, MVL 7.



## FAMILY APATELODIDAE

- 7663 *Apateles torrefacta* (J. E. Smith) 26 Jun 1986 BL 1.  
7665 *Olceclostera angelica* (Grt.) 9 Jul 1986 BLT 1.

## FAMILY LASIOCAMPIDAE

- 7670 *Tolyte velleda* (Stoll) 18 Sep 1986 BL 12; 15-30 Sep 1988 BLT 8, MVL 1.  
7687 *Phyllodesma americana* (Harr.) 25 Apr 1986 BL 1; 1 May 1988 BLT 1, MVL 2.  
7698 *Malacosoma dissτρια* Hbn. 26 Jun 1986 BLT 2.  
7701 *Malacosoma americanum* (F.) 26 Jun 1986 BL 3, BLT 2.

## FAMILY SATURNIIDAE

- 7704 *Eacles imperialis* (Drury) 8 Jun-9 Jul 1986 BL 2, BLT 3; 15 Jul-1 Aug 1988 BL 3, BLT 1, MVL 1.  
7715 *Dryocampa rubicunda* (F.) 8-26 Jun 1986 BL 3; 6 Jun 1988 MVL 2.  
7746 *Automeris io* (F.) 8-26 Jun 1986 BL 4; 6 Jun-15 Jul 1988 BL 3, MVL 5.  
7757 *Anthraea polyphemus* (Cram.) 8 Jun-9 Jul 1986 BL 10, BLT 2; 15 Jul 1988 BL 1, MVL 1.  
7758 *Actias luna* (L.) 25 Apr-16 Aug 1986 BL 10, BLT 3.  
7764 *Callosamia promethea* (Drury) 25 Feb 1986 1 pupa; 10 Feb 1988 11 pupae.

## FAMILY SPHINGIDAE

- 7775 *Manduca sexta* (L.) 22 Aug-30 Sep 1986 BL 5.  
7783 *Manduca jasminearum* (Guer.) 15 Jul-1 Aug 1988 BL 1, BLT 1.  
7786 *Ceratonia amyntor* (Geyer) 26 Jun-1 Aug 1986 BL 6.  
7787 *Ceratonia undulosa* (Wlk.) 14 May-16 Aug 1986 BL 31, BLT 2; 15 Jul 1988 BLT 4.  
7789 *Ceratonia catalpae* (Bdv.) 8 Jun-22 Aug 1986 BL 14, BLT 1; 15 Jul 1988 BLT 2.  
7802 *Sphinx chersis* (Hbn.) 16 Aug 1986 BL 1.  
7821 *Smerinthus jamaicensis* (Drury) 6 Jun 1988 MVL 2.  
7824 *Paonias excaecatus* (J. E. Smith) 26 Jun-9 Jul 1986 BLT 2.  
7825 *Paonias myops* (J. E. Smith) 8 Jun-16 Aug 1986 BL 1, BLT 1; 15 Jul-1 Aug 1988 BL 2, MVL 4.  
7827 *Laiothoe juglandis* (J. E. Smith) 9 May-16 Aug 1986 BL 8, BLT 1; 6 Jun 1988 MVL 2.  
7828 *Pachysphinx modesta* (Harr.) 26 Jun 1986 BLT 1.  
7871 *Deidamia inscripta* (Harr.) 17 Apr-27 May BLT 4.  
7884 *Darapsa versicolor* (Harr.) 6 Jun 1988 S 1.  
7886 *Darapsa pholus* (Cram.) 14 May-22 Aug 1986 BL 12, BLT 1, S 1; 15 Jul 1988 S 1.

## FAMILY NOTODONTIDAE

- 7895 *Clostera albosigma* Fitch 14 May 22 Aug 1986 BL 2, BLT 1; 6 Jun 1988 MVL 1.  
7896 *Clostera inclusa* (Hbn.) 27 May 1988 BLT 6, MVL 1.  
7902 *Datana ministra* (Drury) 8 Jun-9 Jul 1986 BL 4.  
7903 *Datana angusii* G. & R. 8-26 Jun 1986 BL 4.  
7907 *Datana integerrima* (G. & R.) 9 Jul 1986 BL 1.  
7915 *Nadata gibbosa* (J. E. Smith) 14 May-26 Jun 1986 BL 2, BLT 2; 27 May-1 Aug 1988 BLT 12.  
7919 *Peridea basitriens* (Wlk.) 14 May-26 Jun 1986 BL 10, BLT 3; 27 May 1988 MVL 1.  
7920 *Peridea angulosa* (J. E. Smith) 8-26 Jun 1986 BL 3; 15 Sep 1988 MVL 1.  
7922 *Pheosia rimosa* Pack. 16 Aug 1986 BL 1.  
7924 *Odontotia elegans* (Strk.) 4-8 Aug 1985 BL 3; 4 Aug 1988 BL 1, BLT 1.  
7929 *Nerice bidentata* Wlk. 14 May 1986 BLT 2; 27 May 1988 MVL 1.  
7930 *Ellida caniplaga* (Wlk.) 25 Apr-26 Jun 1986 BL 27, BLT 1; 17 Apr-6 Jun 1988 BLT 4, MVL 17.  
7931 *Gluphisia septentrionis* Wlk. 14 May-22 Aug 1986 BL 4, BLT 1; 6 Jun 1988 MVL 2.  
7937 *Furcula cinerea* (Wlk.) 26 Jun 1986 BL 1.  
7952 *Symmerista canicosta* Franc. 6 Jun 1988 MVL 1.  
7953 *Symmerista leucitys* Franc. 8 Jun 1986 BL 4, BLT 2.  
7957 *Dasylophia anguina* (J. E. Smith) 6 Jun-31 Aug 1988 BLT 3.  
7958 *Dasylophia thyatiroides* (Wlk.) 8 Jun-16 Aug 1986 BL 1, BLT 1; 27 May 1988 MVL 2.

- 7975 *Macrocampa marthesia* (Cram.) 9 Jul-1 Aug 1986 BL 2.  
 7994 *Heterocampa guttivitta* (Wlk.) 8 Jun 1986 BL 1.  
 7995 *Heterocampa biundata* Wlk. 8 Jun 1986 BL 2.  
 7999 *Lochmaeus bilineata* (Pack.) 14 May-22 Aug 1986 BL 4, BLT 2; 1 Aug 1988 BLT 1.  
 8005 *Schizura ipomoeae* Doubleday 8 Jun-16 Aug 1986 BL 7.  
 8006 *Schizura badia* (Pack.) 9 Jul 1986 BL 1.  
 8007 *Schizura unicornis* (J. E. Smith) 14 May-16 Aug 1986 BL 6; 6 Jun 1988 MVL 2.  
 8011 *Schizura leptinoides* (Grt.) 8 Jun 1986 BLT 1.  
 8017 *Oligocentria lignicolor* (Wlk.) 15 Jul 1988 BL 1.  
 FAMILY ARCTIIDAE  
 8090 *Hypoprepia fucosa* Hbn. 9 Jun 1 Aug 1986 BL 2, BLT 1; 1 Aug 1988 BLT 3.  
 8129 *Pyrrharctia isabella* (J. E. Smith) 8 Jun-1 Aug 1986 BL 5.  
 8131 *Estigmene acrea* (Drury) 22 Aug 1986 BL 1.  
 8133 *Spilosoma latipennis* Stretch 9 Jul 1986 BLT 1.  
 8134 *Spilosoma congrua* Wlk. 25 Apr 1986 BL 1.  
 8137 *Spilosoma virginica* (F.) 14 May-22 Aug 1986 BL 13, BLT 2; 27 May 1988 BLT 4, MVL 1.  
 8140 *Hyphantria cunea* (Drury) 6 Jun 1988 BLT 1.  
 8156 *Phragmatobia fuliginosa* (L.) 14 May-26 Sep 1986 BL 4, BLT 1.  
 8157 *Phragmatobia lineata* Newman & Donahue 26 Sep 1986 BL 1.  
 8169 *Apantesis phalerata* (Harr.) 14 May-16 Aug 1986 BL 14, BLT 1; 27 May 1988 BLT 3.  
 8171 *Apantesis nais* (Drury) 16-22 Aug 1986 BL 2.  
 8197 *Grammia virgo* (L.) 9 Jul 1986 BL 7, BLT 1; 15 Jul 1988 BLT 6.  
 8199 *Grammia arge* (Drury) 15 Sep 1988 MVL 1.  
 8203 *Halysidota tessellaris* (J. E. Smith) 26 Jun 1986 BL 2, BLT 5; 1 Aug 1988 BLT 12.  
 8211 *Lophocampa caryae* Harr. 14 May 1986 BL 4; 27 May-6 Jun 1988 BLT 42, MVL 19.  
 8214 *Lophocampa maculata* Harr. 26 Jun 1986 BL 1.  
 8230 *Cycnia tenera* Hbn. 8-26 Jun 1986 BL 2, BLT 10.  
 8262 *Ctenucha virginica* (Esper) 8-26 Jun 1986 BL 13, BLT 1.  
 8267 *Ciseps fulvicollis* (Hbn.) 22 Aug-19 Sep 1986 BL 2, BLT 2; 30 Sep 1988 BLT 2.  
 FAMILY LYMANTRIIDAE  
 8314 *Orgyia definita* Pack. 18 Sep 1986 BL 3.  
 8316 *Orgyia leucostigma* (J. E. Smith) 18 Sep 1986 BL 3; 30 Sep 1988 BLT 2.  
 FAMILY NOCTUIDAE  
 8322 *Idia americalis* (Gn.) 14 May-18 Sep 1986 BL 3, S 6; 6 Jun-30 Sep 1988 BLT 2, S 3.  
 8323 *Idia aemula* (Hbn.) 26 Jun-18 Sep 1986 BL 6; 6 Jun-30 Sep 1988 BLT 10, S 7.  
 8326 *Idia rotundalis* (Wlk.) 1 Aug 1988 S 1.  
 8334 *Idia lubricalis* (Gey.) 8 Jun-1 Aug 1986 BL 1, BLT 1, S 14; 15 Jul-31 Aug 1988 S 30.  
 8338 *Phalaenophana pyramusalis* (Wlk.) 27 May-6 Jun 1988 BLT 3, MVL 18, S 2.  
 8340 *Zanclognatha lituralis* (Hbn.) 14 May 1986 S 1.  
 8345 *Zanclognatha laevigata* (Grt.) 26 Jun-1 Aug 1986 BLT 1, S 1; 1 Aug 1988 BL 1, BLT 1, S 1.  
 8348 *Zanclognatha pedipalis* (Gn.) 27 May-6 Jun 1988 BLT 1, S 7.  
 8353 *Zanclognatha ochreipennis* (Grt.) 9 Jul 1986 BL 1; 6 Jun 1988 S 4.  
 8355 *Chytolita morbidalis* (Gn.) 8 Jun 1986 BL 2, S 1; 6 Jun 1988 MVL 2, S 3.  
 8362 *Phalaenostola metonalis* (Wlk.) 26 Jun 1986 S 1.  
 8364 *Phalaenostola larentiodes* Grt. 9 Jul 1986 BL 1.  
 8379 *Renia factiosalis* (Wlk.) 1 Aug 1988 S 1.  
 8380 *Renia nemoralis* B. & McD. 8 Jun 1986 BL 1.  
 8381 *Renia discoloralis* Gn. 1 Aug 1988 BLT 3.  
 8387 *Renia sobrialis* (Wlk.) 1 Aug 1988 S 1.  
 8393 *Lascoria ambigua* Wlk. 27 May 1988 MVL 1.  
 8397 *Palthis angulalis* (Hbn.) 14 May 1986 BL 1; 27 May-31 Aug 1988 MVL 6, S 2.  
 8398 *Palthis asopialis* (Gn.) 27 May-31 Aug 1988 MVL 2.

- 8404 *Rivula propinqualis* Gn. 8 Jun 1986 BLT 1.  
 8412 *Melanomma auricinctaria* Grt. 27 May 1988 MVL 1. Rare.  
 8427 *Dyspyralis puncticosta* (Sm.) 1 Aug 1988 S 8.  
 8441 *Bomolocha manalis* (Wlk.) 8 Jun-1 Aug 1986 BL 4; 27 May-15 Sep 1988 BLT 1, MVL 1, S 1.  
 8442 *Bomolocha baltimoralis* (Gn.) 14 May-9 Jul 1986 BL 4.  
 8444 *Bomolocha palparia* (Wlk.) 15 Jul 1988 BL 1.  
 8445 *Bomolocha abalienalis* (Wlk.) 8 Jun-1 Aug 1986 BL 2.  
 8446 *Bomolocha deceptalis* (Wlk.) 8 Jun 1986 BL 1.  
 8447 *Bomolocha madefactalis* (Gn.) 15 Jul 1988 BL 1.  
 8465 *Plathypena scabra* (F.) 13 Mar-18 Sep 1986 BL 4, BLT 1, S 2; 15-16 Nov 1987 BT 1, S 12; 24 Mar-30 Sep 1988 BL 1, BLT 7, S 3.  
 8490 *Pangrapta decoralis* Hbn. 27 May 1988 BL 2.  
 8491 *Ledaea perditalis* (Wlk.) 22 Aug 1986 BLT 1; 6 Jun 1988 S 1.  
 8499 *Metalectra discalis* (Grt.) 8 Jun 1986 S 1.  
 8500 *Metalectra quadrisignata* (Wlk.) 8 Jun 1986 S 1.  
 8514 *Scolecocampa liburna* (Gey.) 26 Jun-9 Jul 1986 BL 2, S 1; 15 Jul 1988 S 1.  
 8534 *Plusiodonta compressipalpis* Gn. 14 May-9 Jul 1986 S 2; 27 May 1988 BLT 2.  
 8545 *Anomis erosa* Hbn. 30 Sep 1986 BL 1.  
 8555 *Scoliopteryx libatrix* (L.) 3 Apr-30 Sep 1986 BLT 1, S 2; 30 Sep 1988 S 1.  
 8587 *Panopoda rufimargo* (Hbn.) 26 Jun-9 Jul 1986 BL 5; 15 Jul 1988 BL 2, MVL 2.  
 8588 *Panopoda carneicosta* Gn. 26 Jun 1986 BL 1.  
 8591 *Phoberia atomaris* Hbn. 3 Apr 1986 BL 1.  
 8592 *Cissusa spadix* (Cram.) 17 Apr 1988 BL 2.  
 8689 *Zale lunata* (Drury) 9 Jul-30 Sep 1986 BL 2, S 13; 16 Nov 1987 S 5; 1 May-1 Aug 1988 BL 1, S 1.  
 8703 *Zale duplicata* (Bethune) 27 May 1988 MVL 1.  
 8716 *Zale unilineata* (Grt.) 14 May 1986 BLT 1.  
 8717 *Zale horrida* Hbn. 8 Jun 1986 BL 1; 27 May-1 Aug 1988 BLT 1, S 1.  
 8719 *Euparthenos nubilis* (Hbn.) 1-22 Aug 1986 BL 1, BLT 1, S 36 Jun 1988 S 1.  
 8727 *Parallelia bistriaris* Hbn. 14 May-30 Sep 1986 BL 11, S 12; 27 May-31 Aug 1988 BLT 1, S 10.  
 8738 *Caenurgina crassiuscula* (Haw.) 26 Jun-22 Aug 1986 BLT 13; 16 Nov 1987 S 1; 17 Apr-30 Sep 1988 BLT 15, MVL 10.  
 8739 *Caenurgina erechtea* (Cram.) 26 Jun 1986 BLT 1; 30 Sep 1988 BLT 1.  
 8745 *Mocis texana* (Morr.) 30 Sep 1986 BL 1.  
 8778 *Catocala habilis* Grt. 18 Sep 1986 BL 1.  
 8779 *Catocala serena* Edw. 16 Aug 1986 BL 1.  
 8784 *Catocala obscura* Stkr. 1 Aug-18 Sep 1986 BL 4, S 2.  
 8785 *Catocala residua* Grt. 1-16 Aug 1986 S 2.  
 8788 *Catocala resecta* Grt. 16 Aug-30 Sep 1986 BL 1, S 4; 31 Aug-30 Sep S 2.  
 8791 *Catocala insolabilis* Gn. 15 Jul 1988 S 1.  
 8795 *Catocala palaeogama* Gn. 22 Aug 1986 BL 1.  
 8796 *Catocala nebulosa* Edw. 1 Aug 1988 S 1.  
 8797 *Catocala subnata* Grt. 1 Aug 1988 S 1.  
 8798 *Catocala neogama* (J. E. Smith) 16 Aug 1986 BL 1; 31 Aug 1988 S 1.  
 8801 *Catocala ilia* (Cram.) 26 Jun-22 Aug 1986 BL 1, S 8; 15 Jul 1988 BL 1, S 3.  
 8802 *Catocala cerogama* Gn. 1 Aug-30 Sep 1986 BL 3, S 40; 1 Aug-15 Sep 1988 BL 1, BLT 3, S 18.  
 8806 *Catocala parta* Gn. 1 Aug 1988 S 1.  
 8832 *Catocala cara* Gn. 1-22 Aug 1986 BL 2, S 7; 1 Aug-15 Sep 1988 S 7.  
 8834 *Catocala amatrix* (Hbn.) 18 Sep 1986 BL 1; 31 Aug 1988 S 2.  
 8857 *Catocala ultronia* (Hbn.) 1-22 Aug 1986 BL 1, BLT 2, S 4; 15 Jul-31 Aug 1988 S 7.  
 8863 *Catocala mira* Grt. 15 Jul 1988 BL 1.  
 8864 *Catocala grynea* (Cram.) 1 Aug-26 Sep 1986 BL 3, S 2; 1 Aug 1988 S 1.  
 8867 *Catocala blandula* Hulst 19 Jul 1986 BL 1.

- 8881 *Abrostola urentis* Gn. 18 Sep 1986 BL 1.  
 8890 *Pseudophusia includens* (Wlk.) 18-30 Sep BL 10.  
 8898 *Allagrapha aerea* (Hbn.) 8 Jun-30 Sep 1986 BL 3, BLT 1; 6 Jun 1988 BLT 1.  
 8907 *Autographa biloba* (Steph.) 25 Apr 1986 BL 1.  
 8908 *Autographa precatationis* (Gn.) 9 May-16 Aug 1986 BL 5; 16 Nov 1987 BLY 1; 31 Aug 1988 MVL 1.  
 8924 *Anagrapha falcifera* (Kby.) 15 Jul-30 Sep 1988 BL 1, BLT 2.  
 8956 *Marathyssa basalis* Wlk. 14 May 1986 BL 1.  
 8957 *Paectes oculatrix* (Gn.) 14 May 1986 BL 2; 15 Jul 1988 MVL 1.  
 8970 *Baileya ophthalmica* (Gn.) 14 May-26 Jun 1986 BL 6; 27 May-6 Jun 1988 BLT 4, MVL 4.  
 8971 *Baileya dormitans* (Gn.) 8 Jun 1986 BL 1; 27 May-6 Jun 1988 BLT 1, MVL 1.  
 8972 *Baileya levitans* (Sm.) 25 Apr-8 Jun 1986 BL 9, BLT 1; 15 Jul 1988 MVL 1.  
 9047 *Lithacodia muscosula* (Gn.) 8 Jun 1986 BL.  
 9049 *Lithacodia synochitis* (G. & R.) 6 Jun 1988 BLT 2.  
 9051 *Lithacodia musta* (G. & R.) 27 May 1988 BLT 1.  
 9053 *Lithacodia carneola* (Gn.) 14 May-8 Jun 1986 BL 6; 6 Jun-30 Sep 1988 BLT 4, S 6.  
 9057 *Homophoberia apicosa* (Haw.) 8 Jun-16 Aug 1986 BL 4; 6 Jun-31 Aug 1988 BLT 3, MVL 1, S 2.  
 9062 *Cerma cerintha* (Tr.) 9 May-26 Jun 1986 BL 3.  
 9065 *Leuconycta diphtheroides* (Gn.) 14 May-9 Jul 1986 BL 9, S 4; 27 May-6 Jun 1988 BLT 3, MVL 4, S 1.  
 9066 *Leuconycta lepidula* (Grt.) 26 Jun 1986 BL 1; 27 May-15 Jul 1988 BL 1, BLT 1, S 4.  
 9070 *Amyna octo* (Gn.) 31 Aug 1986 BL 1.  
 9090 *Tarachidia candefacta* (Hbn.) 14 May-14 Aug 1986 BL 3, BLT 1; 27 May-1 Aug 1988 BLT 3, MVL 2.  
 9095 *Tarachidia erastrioides* (Gn.) 14 May-8 Jun 1986 BL 2; 27 May-30 Sep 1988 BLT 1, MVL 2.  
 9184 *Colocasia flavicornis* (Sm.) 8 Jun-1 Aug 1986 BL 2; 1 May-1 Aug 1988 BLT 3, MVL 1.  
 9185 *Colocasia propinquinella* (Grt.) 25 Apr-8 Jun 1986 BL 22; 17 Apr-6 Jun 1988 BLT 4, MVL 21.  
 9189 *Charadra deridens* (Gn.) 1 Aug 1986 BLT 1.  
 9193 *Raphia frater* Grt. 6 Jun 1988 MVL 1. Rare.  
 9200 *Acronicta americana* (Harr.) 26 Jun-9 Jul 1986 BL 2, S 1; 6 Jun-15 Jul 1988 BL 1, MVL 2.  
 9225 *Acronicta vinnula* (Grt.) 14 May-26 Jun 1986 BL 2.  
 9229 *Acronicta hasta* Gn. 9 May-22 Aug 1986 BL 8, BLT 4, S 1; 6 Jun 1988 1.  
 9236 *Acronicta morula* G. & R. 9-14 May 1986 BL 3; 27 May 1988 BLT 1.  
 9237 *Acronicta interrupta* Gn. 9-14 May 1986 BL 1, BLT 1, S 1; 6 Jun-1 Aug 1988 BL 1, MVL 1, S 1.  
 9238 *Acronicta lobeliae* Gn. 6 Jun 1988 MVL 1.  
 9249 *Acronicta increta/inclara* Morr. 8-26 Jun 1986 BL 2; 6 Jun 1988 MVL 2.  
 9251 *Acronicta retardata* (Wlk.) 14 May 1986 BL 1.  
 9254 *Acronicta afflictata* Grt. 1 Aug 1986 BL 1.  
 9257 *Acronicta impleta* Wlk. 17 Apr 1986 MVL 1; 17 Apr 1988 BL 1.  
 9261 *Acronicta impressa* Wlk. 1 Aug 1988 S 1.  
 9272 *Acronicta oblongata* (J. E. Smith) 14 May 1986 BL 2.  
 9285 *Polygrammate hebraicum* Hbn. 26 Jun 1986 BL 1.  
 9286 *Harrisimemna trisignata* (Wlk.) 1 Aug 1988 BLT 2.  
 9301 *Eudryas grata* (F.) 26 Jun-1 Aug 1986 BL 5; 15 Jul-1 Aug 1988 BL 2, BLT 1.  
 9328 *Apamea nigrrior* (Sm.) 6 Jun 1988 S 1.  
 9348 *Apamea amputatrix* (Fitch) 8 Jun-1 Aug 1986 BL 6, S 4.  
 9364 *Apamea finitima* Gn. 14 May 1986 S 1; 6 Jun 1988 BLT 3.  
 9367 *Agroperina dubitans* (Wlk.) 9 Jul-22 Aug 1986 BLT 1, S 5.  
 9418 *Oligia obtusa* (Sm.) 18 Sep 1986 BL 1.

- 9419 *Oligia mactata* (Gn.) 30 Sep 1986 BL 1; 30 Sep 1988 S 6.  
 9427 *Meropleon diversicolor* (Morr.) 18 Sep 1986 BL 2.  
 9454 *Amphipoea velata* (Wlk.) 26 Jun-9 Jul 1986 BL 6.  
 9456 *Amphipoea interoceanica* (Sm.) 26 Jun-9 Jul 1986 BL 3, BLT 1, S 1.  
 9457 *Amphipoea americana* (Speyer) 26 Jun-9 Jul 1986 BL 10, BLT 5, S 1.  
 9466 *Papaipema cataphracta* (Grt.) 30 Sep 1986 BL 3; 30 Sep 1988 BLT 2.  
 9471 *Papaipema arctivorens* Hamp. 31 Aug-18 Sep 1988 BLT 3, MVL 1.  
 9473 *Papaipema impecuniosa* (Grt.) 30 Sep 1986 BL 3, BLT 1; 30 Sep 1988 BLT 27.  
 9483 *Papaipema inquaesita* (G. & R.) 16 Aug-18 Sep 1986 BL 13, BLT 4; 31 Aug-30 Sep 1988 BLT 15, MVL 1.  
 9485 *Papaipema baptisiae* (Bird) 16-22 Aug 1986 Blt 2; 18-30 Sep 1988 BLT 4.  
 9486 *Papaipema birdi* (Dyar) 22 Aug 1986 BLT 1.  
 9495 *Papaipema furcata* (Sm.) 31 Aug 1988 BLT 1.  
 9496 *Papaipema nebris* (Gn.) 18-30 Sep 1986 BL 4, BLT 1; 30 Sep 1988 BLT 2.  
 9502 *Papaipema nelita* (Stkr.) 30 Sep 1986 BL 1.  
 9503 *Papaipema rigida* (Grt.) 15-30 Sep 1988 BLT 5, S 2.  
 9505 *Papaipema cerrusata* (Grt.) 30 Sep 1986 S 1; 30 Sep 1988 BLT 13.  
 9507 *Papaipema limpida* (Gn.) 30 Sep 1986 BLT 1; 18 Sep 1988 MVL 1.  
 9509 *Papaipema unimoda* (Sm.) 18 Sep 1986 BL 1; 30 Sep 1988 BLT 3.  
 9525 *Bellura obliqua* (Wlk.) 9 May 1986 BL 1; 27 May-6 Jun 1988 BLT 2, MVL 1.  
 9545 *Euplexia benesimilis* McD. 9 May-1 Aug 1986 BL 3, BLT 1, S 1; 27 May-6 Jun 1988 BLT 2.  
 9546 *Phlogophora iris* Gn. 26 Jun 1986 BL 1.  
 9560 *Dipterygia rozmani* Berio 8 Jun 1986 BL 1.  
 9578 *Hyppa xylinoides* (Gn.) 9-14 May 1986 BL 2, BLT 4, S 3.  
 9582 *Nedra ramosula* (Gn.) 25 Apr-16 Aug 1986 BL 7, BLT 2.  
 9637 *Magusa orbifera* (Wlk.) 30 Sep 1986 BL 1. This is a tropical species which strays northward to Ohio, Wisconsin and Maine.  
 9638 *Amphipyra pyramidoides* Gn. 1 Aug-30 Sep 1986 BL 7, S 19; 15 Jul-30 Sep 1988 BLT 6, MVL 1, S 45.  
 9661 *Crambodes talidiformis* Gn. 26 Jun 1986 BLT 1.  
 9662 *Balsa malana* (Fitch) 8 Jun 1986 BLT 1.  
 9663 *Balsa tristrigella* (Wlk.) 9 May 1986 BL 1; 27 May-6 Jun 1988 MVL 5, S 1.  
 9664 *Balsa labecula* (Grt.) 14 May 1986 BL 1.  
 9666 *Spodoptera frugiperda* (J. E. Smith) 18-30 Sep 1986 BL 3, S 1; 30 Sep BLT 2.  
 9669 *Spodoptera ornithogalli* (Gn.) 30 Sep 1986 BL 1.  
 9684 *Elaphria grata* Hbn. 27 May 1988 BL 1.  
 9688 *Galgula partita* Gn. 9 May-30 Sep 1986 BL 5, BLT 6; 16 Nov 1987 S 4; 6 Jun-30 Sep 1988 BLT 3.  
 9689 *Perigea xanthioides* Gn. 16 Aug 1986 BL 1; 6 Jun-1 Aug 1988 BLT 1, MVL 1.  
 9690 *Platysenta videns* (Gn.) 25 Apr-1 Aug 1986 BL 1, BLT 16; Jun-30 Sep 1988 BLT 1, S 1.  
 9696 *Platysenta vecors* (Gn.) 14 May-16 Aug 1986 BL 1, BLT 1, S 1.  
 9720 *Ogdoconta cinereola* (Gn.) 14 May-8 Jun 1986 BL 2; 6 Jun-30 Sep 1988 BLT 3, MVL 2.  
 9725 *Stiriodes obtusa* (H.-S.) 9 Jul 1986 BL 1; 1 Aug 1988 BLT 1.  
 9886 *Lithophane patefacta* (Wlk.) 24 Mar-17 Apr 1988 S 6.  
 9887 *Lithophane bethunei* (G. & R.) 25 Mar-25 Apr 1986 BLT 2, BT 3, S 14; 4-17 Apr 1988 BLT 1, S 5.  
 9888 *Lithophane innominata* (Sm.) 25 Mar-3 Apr 1986 BLT 1, S 3; 24 Mar-1 May 1988 BL 3, BLT 3, S 20.  
 9892 *Lithophane disposita* Morr. 25 Mar 1986 S 1. Rare. This is the fourth specimen ever collected in Ohio.  
 9893a *Lithophane hemina* f. *lignicosta* Franc. 25 Mar-3 Apr 1986 BLT 2, S 2; 16 Nov 1987 S 1; 24 Mar-17 Apr 1988 S 2.

- 9910 *Lithophane antennata* (Wlk.) 25 Mar–25 Apr 1986 BL 1, BLT 1, BT 4, S 3; 16 Nov 1987 S 10; 24 Mar–1 May 1988 BLT 1, BT 1, MVL 2, S 6.
- 9914 *Lithophane laticinerea* Grt. 25 Mar 1986 S 1; 16 Nov 1987 BT 1, S 10.
- 9915 *Lithophane grotei* Riley 16 Nov 1987 BLT 1, S 15.
- 9916 *Lithophane unimoda* (Lint.) 25 Mar–25 Apr 1986 BL 2, BLT 3, BT 2, S 13; 16 Nov 1987 S 10; 24 Mar–1 May 1988 BLT 3, MVL 1, S 4.
- 9929 *Pyreferra hesperidago* (Gn.) 25 Mar 1986 S 2; 24 Mar–4 Apr 1988 BL 2, S 1.
- 9930 *Pyreferra citrombra* Franc. 25 Mar 1986 S 1; 24 Mar–4 Apr 1988 BL 3, BLT 4, S 2.
- 9932 *Pyreferra pettiti* (Grt.) 25 Mar 1986 S 4; 24 Mar–17 Apr 1988 BL 7, BLT, S 4.
- 9933 *Eupsilia vinulenta* (Grt.) 13 Mar–25 Apr 1986 BLT 2, BT 2, S 16; 16 Nov 1987 S 1; 4–17 Apr 1988 BL 1, BLT 2, BT 3, S 2.
- 9933.1 *Eupsilia sidus* (Gn.) 13 Mar–25 Apr 1986 BLT 1, BT 2, S 7; 16 Nov 1987 S 2; 4–17 Apr 1988 BLT 1, S 1.
- 9935 *Eupsilia tristigmata* (Grt.) 25 Mar–3 Apr 1986 BL 1, S 2; 4–17 Apr 1988 BLT 1, BT 1.
- 9936 *Eupsilia morrisoni* (Grt.) 9 Mar–25 Apr 1986 BL 2, BLT 1, BT 9, S 25; 16 Nov 1987 S 1; 4 Apr–1 May 1988 BT 3, S 7.
- 9939 *Eupsilia devia* (Grt.) 3–25 Apr 1986 BL 1, BT 1, S 7; 24 Mar 1988 BL 1, S 4.
- 9943 *Metaxaglaea inulta* (Grt.) 30 Sep 1986 BL 1; 30 Sep 1988 S 1.
- 9946 *Epiglaea decliva* (Grt.) 30 Sep 1986 S 6; 16 Nov 1987 10.
- 9952 *Eucirroedia pampina* (Gn.) 30 Sep 1986 S 1; 15 Sep 1988 BLT 1.
- 9957 *Sunira bicolorago* (Gn.) 30 Sep 1986 S 2; 15–16 Nov 1987 BLT 1, BT 9, S 21.
- 9961 *Anathix ralla* (G. & R.) 31 Aug 1988 BLT 6, MVL 1.
- 10012 *Eutotype electilis* (Morr.) 25 Apr 1986 BL 1.
- 10021 *Copivaleria grotei* (Morr.) 3–25 Apr 1986 BL 38, S 1; 4 Apr–1 May 1988 BL 20, BLT 51, MVL 29.
- 10197 *Cucullia florea* Gn. 1 Aug 1988 BLT 1.
- 10200 *Cucullia asteriodes* Gn. 3 6 Jun–15 Sep 1988 MVL 2.
- 10288 *Polia detracta* (Wlk.) 6–8 Jun 1986 BL 2, BLT 1, S 2.
- 10291 *Polia latex* (Gn.) 26 Jun 1986 BL 1.
- 10293 *Melanchnra picta* (Harr.) 9 May–22 Aug 1986 BL 5.
- 10299 *Lacanobia subjuncta* (G. & R.) 8 Jun–16 Aug 1986 BL 3; 27 May–6 Jun 1988 BLT 2, MVL 2.
- 10304 *Lacanobia legitima* (Grt.) 26 Jun–16 Aug 1986 BL 2; 27 May–15 Jul 1988 BL 1, BLT 1.
- 10368 *Lacinipolia meditata* (Grt.) 16 Aug–18 Sep 1986 BL 2, BLT 1.
- 10370 *Lacinipolia lustralis* (Grt.) 1 Aug 1986 BL 1.
- 10397 *Lacinipolia renigera* (Steph.) 8 Jun–16 Aug 1986 BL 6; 6 Jun–30 Sep 1988 BLT 56, MVL 11, S 1.
- 10405 *Lacinipolia lorea* (Gn.) 8 Jun 1986 BL 1.
- 10436 *Aletia oxygala* (Grt.) 8 Jun 1986 BL 2.
- 10438 *Pseudaletia unipuncta* (Haw.) 13 Mar–30 Sep 1986 BL 29, BLT 27, S 2; 16 Nov 1987 BLT 2, BT 13, S 12; 4 Apr–30 Sep 1988 BLT 15, MVL 15, S 93. Abundant. Three generations.
- 10444 *Leucania phragmatidicola* Gn. 30 Sep 1988 BLT 1.
- 10445 *Leucania linda* Franc. 13 Sep 1988 MVL 1.
- 10446 *Leucania multilinea* Wlk. 25 Apr–22 Aug 1986 BL 1, BLT 1; 6 Jun–30 Sep 1988 BLT 15, MVL 9.
- 10461 *Leucania ursula* (Fbs.) 14 May–22 Aug 1986 BL 8; 27 May–30 Sep 1988 BLT 5, S 1.
- 10462 *Leucania pseudargyria* Gn. 26 Jun 1986 BL 2.
- 10487 *Orthosia rubescens* (Wlk.) 3–25 Apr 1986 BL 1, BLT 24, S 8; 4–17 Apr 1988 BL 8, BLT 5, MVL 5, S 7.
- 10491 *Orthosia alurina* (Sm.) 3 Apr 1986 S 1; 17 Apr 1988 BL 1.
- 10495 *Orthosia hibisci* (Gn.) 25 Mar–25 Apr 1986 BL 8, BLT 291, S 41; 24 Mar–17 Apr 1988 BL 20, BLT 106, BT 2, S 82.
- 10501 *Crocigrapha normani* (Grt.) 25 Apr 1986 BL 2; 17 Apr 1988 BLT 2, MVL 4.

- 10502 *Himella intractata* (Morr.) 25 Apr 1986 BL 1; 17-18 Apr 1988 BL 4, S 1.  
 10518 *Achatia distincta* Hbn. 25 Apr-9 May 1986 BL 2.  
 10520 *Morrisonia evicta* (Grt.) 17 Apr-1 May 1988 BLT 1, MVL 1.  
 10521 *Morrisonia confusa* (Hbn.) 14 May-8 Jun 1986 BL 7.  
 10524 *Nephelodes minians* Gn. 18 Sep 1986 BL 8, S 2; 31 Aug-30 Sep 1988 BLT 18, MVL 2.  
 10578 *Pseudorthodes vecors* (Gn.) 14 May-20 Jul 1986 BL 5; 1 Aug 1988 BL 1.  
 10585 *Orthodes crenulata* (Butler) 8 Jun-1 Aug 1986 BL 2; 27 May-30 Sep 1988 BLT 4.  
 10587 *Orthodes cynica* Gn. 14 May-28 Jun 1986 BL 5, BLT 2; 27 May-15 Jul 1988 BL 1, BLT 4, MVL 2, S 2.  
 10627 *Tricholita signata* (Wlk.) 1 Aug 1988 S 1.  
 10648 *Agrotis gladiaria* Morr. 18 Sep 1986 BL 2.  
 10651 *Agrotis venerabilis* Wlk. 30 Sep 1988 BLT 4.  
 10658 *Agrotis stigmata* Morr. 27 May 1988 BLT 1.  
 10663 *Agrotis ipsilon* (Hufn.) 18-30 Sep 1986 BL 2, BLT 1; 16 Nov 1987 BLT 1, BT 3, S 2; 17 Apr-30 Sep 1988 BL 1, BLT 4, MVL 4, S 12. Abundant. Three generations.  
 10670 *Feltia jaculifera* (Gn.) 16 Aug 30 Sep 1986 BL 6, BLT 10; 31 Aug-30 Sep 1988 BLT 1, MVL 2.  
 10670.1 *Feltia* spp. 15-30 Sep 1988 BLT 34.  
 10675 *Feltia tricosia* (Lint.) 16-22 Aug 1986 BL 4, BLT 7; 30 Sep 1988 BLT 1.  
 10676 *Feltia herilis* (Grt.) 1 Aug-30 Sep 1986 BL 15, BLT 42.  
 10891 *Ochropleura plecta* (L.) 14 May-1 Aug 1986 BL 6, BLT 2; 27 May-6 Jun 1988 BLT 4, MVL 1.  
 10911 *Anicla infecta* (Ochs.) 30 Sep 1986 S 1.  
 10915 *Peridroma saucia* (Hbn.) 3 Apr-30 Sep 1986 BL 3, BLT 2, S 16; 16 Nov 1987 S 2; 31 Aug-30 Sep 1988 BLT 6, S 2.  
 10942 *Xestia adela* Franc. 16-22 Aug 1986 BL 3; 16 Nov 1987 S 1; 6 Jun-30 Sep 1988 BLT 7.  
 10942.1 *Xestia dolosa* Franc.  
 35 *Schinia rivulosa* (Gn.) 22 Aug 1986 BL 1, BLT 1.

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