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AN ANNOTATED CHECKLIST OF THE LEPIDOPTERA OF THE BEAVER ISLAND ARCHIPELAGO, LAKE MICHIGAN.

Dennis Profant¹

ABSTRACT

A survey of Lepidoptera was conducted in 1987 and 1988 on Beaver Island, Lake Michigan. When combined with a 1930 survey of the Beaver Island Archipelago, 757 species from 41 families have now been recorded from these islands.

Only one study has been published on the Lepidoptera of Beaver Island and the surrounding islands of Garden, High, Hog, Whiskey, Squaw, Trout, Gull, and Hat (Moore 1930). The present study has produced a more complete inventory of lepidopteran species on Beaver Island. Collecting was done in a variety of habitats using several different light sources. Emphasis was placed on the Microlepidoptera which were largely omitted in the original work by Moore (1930).

Beaver Island is the largest of a group of nine named islands located in the extreme northeastern portion of Lake Michigan, (Fig. 1). Situated 51 km northwest of Charlevoix, Michigan, the island is 20 km long by 11 km wide and consists of several hundred permanent residents who reside primarily in the town of St. James. The island has a maritime climate and frosts can occur well into May and again in September. While the summer air is usually hot during the day, 26°C, it often is very cool at night. 10°C is not unusual in June, July, and August, (Jacque LaFreniere, pers. comm.).

The northern part of the island is underlain with limestone formations which form outcrops in various places. The interior is gently rolling, corresponding to the original glacial drift. Behind the shoreline are a series of sand dunes and terraces, the largest of which occurs on the west side of the island. The highest point in this dune complex is approximately 61 m high (Darlington 1940). It is probable that the Beaver archipelago has not been connected to the mainland since the last glacial epoch. The fauna must have crossed the water after the retreat of the Wisconsin ice sheet some 15,000 years ago. The water would be only a slight barrier for winged insects, especially Lepidoptera. The species found on the island have a marked northern affinity and may have been carried from the Upper Peninsula by the frequent strong northwest winds (Moore 1930).

Beaver Island occurs in the hemlock-white pine-northern hardwoods forest region (Braun 1950). The beaches and dunes consist of vegetation characteristic of this latitude. Much of the island perimeter consists of coniferous forests (mixed fir, spruce, cedar, hemlock, and pine). A number of inland lakes contain sphagnum bogs or bog forests. Years ago the island residents put much of the land into cultivation and many of these farmlands have reverted to old fields and second growth forests of paper birch (*Betula papyrifera*) and a bracken fern (*Pteridium aquilinum*) understory.

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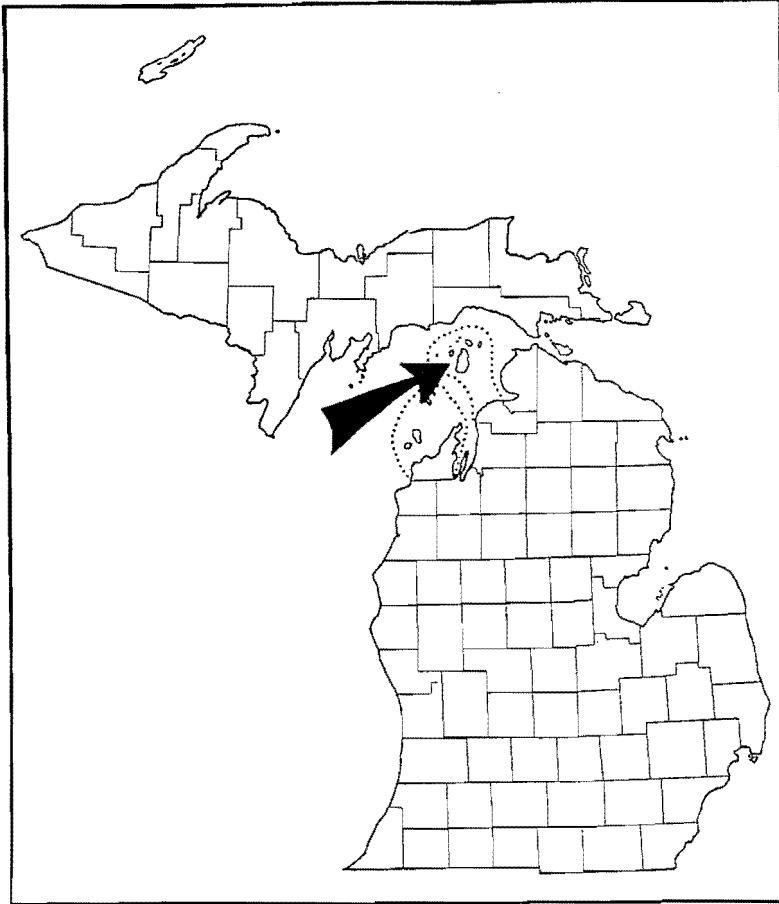


Figure 1. Location of the Beaver Island Archipelago.

MATERIALS AND METHODS

Lepidoptera were collected between July and September 1987, and periodically between May and August 1988. A few records were obtained from a small teaching collection at the Central Michigan University (CMU) Biological Station. Most species in table 1 without collecting dates came from this collection. White sheets illuminated by a 200 watt incandescent light bulb and/or several filtered black lights (BLB) were used for night collecting. Buildings with mercury vapor lights were also utilized. Sugaring for moths with a beer-molasses bait proved unproductive. Moths were collected 4-5 times a week and at all hours of the night.

Habitats sampled on the island included hemlock woods, beech-maple forest, sphagnum bog, cedar woods, northern hardwoods, coniferous forest, lake edges, marshes, and open fields. The primary collection sites responsible for the largest percentage of species collected were the CMU Biological Station and campground.

The beach and dunes at the station were typified by *Prunus pennsylvanica*, *Populus balsamifera*, *Salix cordata*, *Potentilla fruticosa*, *Juniper spp.*, *Arctostaphylos uva-ursi*, *Campanula rotundifolia*, *Lithospermum carolinense*, and *Zigadenus glaucus*. Behind the dunes was an area dominated by *Pinus resinosa*, and *P. strobus*, with an understory of bracken fern, *Smilacina stellata*, *Linnaea borealis*, and *Silene vulgaris*. The campground was a mixed hardwood-coniferous community. Common plants included paper birch, *Tsuga canadensis*, *Thuja occidentalis*, *Populus tremuloides*, *Abies balsamea*, *Picea glauca*, *Ostrya virginiana*, *Betula alleghaniensis*, *Cornus canadensis*, *Clintonia borealis*, *Maianthemum canadense*, and *Polygala paucifolia*.

Collected specimens remain in the personal collection of the author. Identifications were made using a comparative collection at Michigan State University. Taxonomic literature used for identification included the following: Covell (1984), Forbes (1923, 1948), Hodges et al. (1974, 1986), Howe (1975), Klots (1951), LaFontaine et al. (1987), McGuffin (1972, 1977, 1981, 1987), Miller (1987), Rockburne & LaFontaine (1976), and Sargent (1976). Phylogenetic arrangement and nomenclature followed that of Hodges et al. (1983). Genera or species followed by a question mark in the checklist indicate unsure identifications.

RESULTS

A total of 757 lepidopteran species from 41 families has now been recorded from the Beaver Island archipelago. 701 of these species were from Beaver Island; 517 species were collected in this study and 184 additional species were reported by Moore (1930). Approximately 35 species of microlepidoptera remain unidentified. Table 1 lists all identified species collected from the Beaver Island archipelago. Species not collected on Beaver Island are listed with the island on which they were originally recorded by Moore (1930).

Table 1. An annotated checklist of the Lepidoptera of the Beaver Island archipelago, Lake Michigan. M, recorded by Moore (1930); P, recorded by Profant.

HEPIALIDAE	<i>Monopis dorstrigella</i> (Clem.) P 29 July
<i>Sthenopis quadriguttatus</i> (Grt.) P July	LYONETHIDAE
<i>Hepialus hyperboreus</i> Mosch. M 2 Aug.	<i>Bucculatrix canadensisella</i> Cham. P 7 July
<i>Hepialus gracilis</i> Grt. P 12 July	
OPOSTEGIDAE	GRACILLARIIDAE
<i>Opostega quadririgella</i> Cham. P 22-29 June	<i>Caloptilia glutinella</i> ? (Ely) P July
INCURVARIIDAE	<i>Caloptilia packardella</i> ? (Cham.) P 4 July
<i>Chalceopla cyanella</i> (Bsk.) P 27 May	<i>Parornix sp.</i> P July-Aug.
<i>Adela ridingsella</i> Clem. M July	<i>Phyllonorycter sp.</i> P 1-9 July
HELIOZELIDAE	OECOPHORIDAE
<i>Antispila sp.</i> P 4 July	<i>Agonopterix atrodorsella</i> (Clem.) P 27 May
TINEIDAE	<i>Agonopterix pulvipennella</i> (Clem.) P 26 May
<i>Nemapogon sp.</i> P 22 July	<i>Agonopterix flavicomella</i> (Engel) P 9 July
<i>Amydria effrentella</i> Clem. P 21 July	<i>Semioscopis packardella</i> (Clem.) P May
	<i>Depressaria pastinacella</i> (Dup.) M June-Aug.
	Garden, High
	<i>Machimia tentoriferella</i> Clem. P 27 Aug.

Ethmia monticola fuscipede (Wlsm.) P 22
June

Callima argenticinctella Clem. P July

BLASTOBASIDAE

Dryoperia murfeldtella (Cham.) P 3 Aug.

COLEOPHORIDAE

Coleophora fagicorticella ? Cham. P 4 July

Coleophora spissicornis (Haw.) P 4 July

GELECHIIDAE

Dichomeris ligulella Hbn. P 29 July

Dichomeris serrativittella/isa complex P 7 July

Anacamptis niveopulvella (Cham.) P 6 Aug.

Trichotaphe flavocostella (Clem.) P 21 July

ALUCITIDAE

Alucita hexadactyla L. P 7 Aug.

PLUTELLIDAE

Plutella porrectella ? (L.) P 26 May

Plutella xylostella (L.) P 3 Aug.

Ypsolopha dentiferella (Wlsm.) P 2 Aug.

YPONOMEUTIDAE

Atteva punctella (Cram.) P 21 July

Swammerdamia sp. P 9 July

Yponomeuta multipunctella Clem. P 6 Aug.

ARGYRESTHIIDAE

Argyresthia annettella Bsk. P July

Argyresthia prob. *austerella* Zell. P 1 July

Argyresthia calliphanes Meyr. P July-Aug.

Argyresthia oreasella Clem. P 29 July

Argyresthia sp. P 1 July

SESIIDAE

Pennisetia marginata (Harr.) M Aug.

Albuna pyramidalis (Wik.) M June-July High

Synanthedon pictipes (Grote & Robinson) M 5
July High

Synanthedon acerni (Clem.) MP July-Aug.

Synanthedon proxima (Hy. Edw.) P July

CHOREUTIDAE

Prochoreutis inflatella (Clem.) P July-Aug.

Choreutis pariana (Cl.) P 29 July

COSSIDAE

Acosus centerensis (Lint.) M July-Aug.

Prionoxystus robiniae (Peck) P 1 July

Prionoxystus macmurtrei (Guer.) P 29 June

TORTRICIDAE

Aterpia approximata (Heinr.) P July-Aug.

Apotomis capreana (Hbn.) M Sept.

Apotomis funerea (Meyr.) P June-Aug.

Apotomis apateticana (McD.) P 18 July

Apotomis deceptana (Kft.) P July-Aug.

Pseudosciaphila duplex (Wlsm.) P 27 June

Olethreutes punctana (Wlsm.) P 9 July

Olethreutes quadrifidus (Zell.) P July

Olethreutes clavana (Walker) P 9 July

Olethreutes nigrana (Heinr.) P 29 July

Olethreutes merrickana ? (Kft.) P 18 July

Olethreutes cespitana (Hbn.) MP July-Aug.

Olethreutes bipartitana (Clem.) P 4 July

Hedya ochroleucana (Frolich) P 7 July

Rhyacionia buoliana (Denis & Schiffermuller) P
July

Spilonota ocellana (Denis & Schiffermuller) P
29 July

Phaneta formosana (Clem.) P 7 July

Phaneta ochrocephala (Wlsm.) P July-Aug.

Phaneta ochroterminana (Kft.) P Aug.

Phaneta parmatana (Clem.) P 2 Aug.

Phaneta tarandana ? (Mosch.) P July-Aug.

Phaneta prob. *olivaceana* (Riley) P 4 July

Eucosma tocullionana Heinr. P 7 July

Eucosma palabundana Heinr. P June-July

Eucosma dorsisignatana (Clem.) MP
Aug.-Sept.

Eucosma derelecta Heinr. P 21 July

Eucosma consobrinana Heinr. P 29 July

Epiblema otiosana (Clem.) P 7 July

Notocelia culminana (Wlsm.) P 3 Aug.

Gypsonoma haimbachiana (Kft.) P 29 July

Gypsonoma substitutionis Heinr. P June-July

Gypsonoma adjuncta Heinr. P 1-4 July

Proteoteras moffatiana Fern. P 29 July

Epinotia solandriana (L.) P July-Aug.

Epinotia huroniensis Brown P 22 July

Epinotia criddleana ? (Kft.) P 18 July

Epinotia transmissana (Walker) P 29 July

Ancyliis metamelana (Wik.) P 7 July

Ancyliis semiovana (Zell.) P 1 July

Ancyliis burgessiana (Zell.) MP May-June

Dichrorampha bittana (Bsk.) P 7 July

Pammene felicitana Heinr. P 7 July

Grapholita prunivora (Walsh) P 29 July

Cydia flexiloqua (Heinr.) P July

Cydia pomonella (L.) P 29 July

Croesia albicomana (Clem.) MP Aug.
Acleris nivisellana (Wlsm.) P 22 July
Acleris comandrana (Fern.) M 2 June High
Pandemis lamprosana (Rob.) P 4 July
Pandemis limitata (Rob.) P July
Pandemis canadana Kft. P 18-29 July
Argyrotaenia velutinana (Wik.) P July
Argyrotaenia pinatubana (Kft.) P May
Argyrotaenia quadrifasciana (Fern.) P 12 July
Choristoneura rosaceana (Harr.) M 28 July
Choristoneura fumiferana (Clem.) P 27 June
Choristoneura pinus Free. P 21 July
Archips argyrosipila (Wik.) MP June-Aug.
Archips mortuana Kft. P 4 July
Archips fervidana (Clem.) P July-Aug.
Archips purpurana (Clem.) MP July-Aug.
Archips cerasivorana (Fitch) MP July-Aug.
Archips striana (Fern.) P 27 June-1 July
Archips dissitana (Grt.) MP July-Aug.
Archips packardiana (Fern.) P July-Aug.
Clepsis persicana (Fitch) MP July
Clepsis melaleucana (Wik.) MP June
Ptycholoma virescana (Clem.) P 4 July
Sparganothis sulfureana (Clem.) P 21 July
Sparganothis lycopodiana (Kft.) M July-Aug.
Sparganothis unifasciana (Clem.) P 21 July
Sparganothis reticulatana (Clem.) MP Aug.
Sparganothis directana ? (Wik.) P 4 July
Sparganothis pettitana (Rob.) MP July

COCHYLIDAE

Hysterosia augustana Clem. P July-Aug.
Hysterosia hospes Wlsm. P 18 July
Hysterosia romonana Kft. P July

HESPERIIDAE

Erynnis icelus (Scudder & Burgess) M
 May-June
Carterocephalus palaemon (Pallas) M 18 June
 Hog
Ancyloxypha numitor (F.) M 13 July Hog
Thymelicus lineola (Ochs.) P June-Aug.
Hesperia comma laurentina (Lyman) MP
 July-Aug.
Hesperia leonardus Harr. P
Hesperia sassacus Harr. M 18 June
Polites coras (Cram.) P
Polites themistocles (Latr.) M June-July High,
 Garden
Polites mystic (Edw.) P
Poanes hobomok (Harr.) M June
Euphyes ruricola (Bdv.) MP July
Amblyscirtes vialis (Edw.) M June Garden,
 Hog

PAPILIONIDAE

Papilio polyxenes F. P
Papilio glaucus L. MP June

PIERIDAE

Artogeia napi (L.) M May-June Garden, Hog
Artogeia rapae (L.) MP May-Sept.
Colias philodice Godt. MP May-Oct.
Colias eurytheme Bdv. P 2 Aug.
Colias interior Scudder P 2 July
Eurema lisa Bdv. & Leconte MP July-Aug.

LYCAENIDAE

Lycaena phlaeas (L.) MP May-Aug.
Hylolycaena hyllus (Cram.) MP 28 June High
Epidemia epixanthe (Bdv. & Leconte) P
 June-July
Epidemia dorcas (Kby.) P July-Aug.
Epidemia helloides (Bdv.) M June-Aug.
Satyrrium acadicum (Edw.) P 20 July
Satyrrium calanus falacer (Godart) M June-July
Satyrrium liparops strigosum (Harr.) MP 27
 July
Incisalia augustus (Kby.) MP May
Strymon melinus Hbn. M 29 July Squaw
Everes comyntas (Godt.) P 4 Aug.
Celastrina ladon (Cram.) MP May-Aug.
Plebejus saepiolus (Bdv.) M June-July Garden,
 Hog, High

NYMPHALIDAE

Polygona interrogationis (F.) P June
Polygona comma (Harr.) MP July
Polygona faunus (Edw.) M 20 July Squaw
Polygona progné (Cram.) M July-Sept.
Nymphalis vau-album (Denis & Schiffermuller)
 MP Aug.
Nymphalis antiopa (L.) MP June-Oct.
Aglais milberti (Godt.) MP June-July
Vanessa virginiensis (Drury) MP June-July
Vanessa cardui (L.) MP May-Sept.
Vanessa atalanta (L.) MP June-Aug.
Junonia coenia (Hbn.) MP Aug.-Sept.
Speyeria cybele (F.) MP July
Speyeria aphrodite alcestis (Edw.) MP July
Speyeria atlantis (Edw.) MP July-Aug.
Clossiana selene myrina (Cram.) MP June-Aug.
Clossiana bellona (F.) P 6 Aug.
Phyciodes morpheus (F.) MP June-Aug.
Charidryas nycteis (Doubleday) M June High
Basilarchia arthemis (Drury) & astyanax (F.) MP
 June-July

Basilarchia archippus (Cram.) MP Aug.

SATYRIDAE

Enodia anthedon A.H. Clark P 7 July
Satyroides eurydice (Johansson) MP July-Aug.
Megisto cymela (Cram.) P 5 July
Coenonympha inornata Edw. MP July
Cercyonis pegala nephele (Kby.) MP July-Aug.

DANAIDAE

Danaus plexippus (L.) MP Aug.

LIMACODIDAE

Tortricidia testacea Pack. MP June-July
Tortricidia prob. flexuosa (Grt.) P 4 July
Lithacodes fasciola (H.-S.) MP July-Aug.

PYRALIDAE

Scoparia basalis Wlk. P 29 July
Eudonia strigalis (Dyar) P 22 July
Nymphula ekthlipsis (Grt.) M 18 July High
Munroessa icciusalis (Wlk.) MP July-Aug.
Paraponyx maculalis (Clem.) MP Aug.
Paraponyx badiusalis (Wlk.) M Aug.-Sept.
Paraponyx allionealis Wlk. P 29 July
Dicymolomia julianalis (Wlk.) P 29 July
Evergestis pallidata (Hufn.) M June-Sept.
Perispasta caeculalis Zell. P July
Phlyctaenia coronata (Hufn.) M July-Aug.
Nealgedonia extricalis (Gn.) M 10 Sept.
Anania funebris (Strom) M June-July
Sitochroa chortalis (Grt.) M June
Loxostege sticticalis (L.) MP May-June
Pyrausta nicalis (Grt.) M 25 June High
Pyrausta signatalis (Wlk.) M 2 Aug. High
Pyrausta bicoloralis (Gn.) P July
Pyrausta acronalis (Wlk.) P 21 July
Pyrausta fodinalis (Led.) M 30 July Garden
Udea rubigalis (Gn.) MP June-Oct.
Diathrausta reconditalis (Wlk.) M 3 Aug.
Nomophila nearctica Mun. M June-Aug.
Desmia funeralis (Hbn.) P
Anageshna primordialis (Dyar) P June-July
Palpita magniferalis (Wlk.) P May-June
Herpetogramma pertextalis (Led.) M Aug.-Sept.
 High
Herpetogramma thestealis (Wlk.) MP
 July-Aug.
Donacaula melinella (Clem.) P July 9
Prionapteryx nebulifera Steph. M July-Aug.
 High
Crambus hamellus (Thunb.) M 26 Aug.

Crambus bidens Zell. P 21 July
Crambus perlellus (Scop.) MP July-Aug.
Crambus whitmerellus Klots M 21 Aug.
Crambus looks like *praefectellus* (Zinck.) P
 Aug.

Crambus leachellus (Zinck.) M Aug.-Sept.
Crambus albellus Clem. P 22 July
Crambus agitatellus Clem. MP June-July
Crambus girardellus Clem. P 9 July
Chrysoteuchia topiaria (Zell.) MP July-Aug.
Agriphila ruricoella (Zell.) P 8 Aug.
Agriphila vulgivaella (Clem.) M Aug.-Sept.
Catoptria latiradiella (Wlk.) MP Aug.
Pediasia trisecta (Wlk.) MP June-Sept.
Microcrambus biguttellus (Fbs.) P 22 July
Microcrambus elegans (Clem.) P 22 July
Loxocrambus awemensis McD. P 29 July
Thaumatopsis pexella gibsonella Kft. M
 Aug.-Sept.

Urola nivalis (Drury) P 3 Aug.
Vaxi auratella (Clem.) MP July
Pyralis farinalis L. MP 14 June-4 Aug.
Hypsopygia costalis (F.) P 29 July
Herculia olinalis (Gn.) M July-Aug.
Herculia intermedialis (Wlk.) P 4 July
Tetralopha sp. P 1-18 July
Acrobasis sp. P 7 Aug.
Etiella zinckenella ? (Tr.) P 7 July-2 Aug.
Nephopterix basilaris Zell. P 9 July
Dioryctria looks like *abietivorella* (Grt.) P 27
 June
Eulogia ochrifrontella (Zell.) P 4 July
Moodna ostrinella (Clem.) P 29 July-3 Aug.
Peoria approximella (Wlk.) MP July

PTEROPHORIDAE

Geina tenuidactyla (Fitch) MP July
Cnaemidophorus rhododactylus (Denis &
 Schiffermuller) P 22 July
Platyptilia pallidactyla (Haw.) M June
Platyptilia carduidactyla (Riley) P June-Aug.
Oidaematophorus elliotii (Fern.) P 2 Aug.
Oidaematophorus kelicottii (Fish) M June
 High
Oidaematophorus inconditus ? (Wlsm.) M June
 High
Emmelina monodactyla (L.) M June-July High

THYATIRIDAE

Habrosyne scripta (Gosse) MP June-July
Habrosyne gloriosa (Gn.) M Hog from pupae
Pseudothyatira cymatophoroides (Gn.) M
 June-July
Euthyatira pudens (Gn.) M 7 June High

DREPANIDAE

- Drepana arcuata* Wlk. MP July-Aug.
Drepana bilineata (Pack.) MP July
Oreta rosea (Wlk.) P 4 July

GEOMETRIDAE

- Protitame virginalis* (Hulst) P 2 Aug.
Itame pustularia (Gn.) MP June-Sept.
Itame ribearia (Fitch) M 6 Aug.
Itame argillacearia (Pack.) M July-Aug.
Itame brunneata (Thunb.) M July
Itame subcessaria (Wlk.) P 21 July
Itame bitactata (Wlk.) M July-Aug.
Itame loricaria (Evers.) P 4 July
Semiothisa aemularia (Wlk.) M June-July
Semiothisa minorata (Pack.) MP June-July
Semiothisa bisignata (Wlk.) MP June-Aug.
Semiothisa granitata (Gn.) MP June-Aug.
Semiothisa eremiata (Gn.) M 18 July High
Semiothisa orillata (Wlk.) M July
Semiothisa continuata (Wlk.) P May-Aug.
Semiothisa neptaria trifasciata (Pack.) M
 June-July Squaw, Hog
Ematurga amitaria (Gn.) P 2 July
Anacamptodes vellivolata (Hulst) P 27 May
Iridopsis larvaria (Gn.) MP July-Aug.
Anavitrinella pampinaria (Gn.) M June-July
 High
Ectropis crepuscularia (Denis & Schiffermuller)
 M May-July
Protoboarmia porcelaria indicataria (Wlk.) M
 July-Sept.
Melanolophia signataria (Wlk.) MP May-June
Eufidonia discospilata (Wlk.) P May-July
Biston betularia cognataria (Gn.) MP
 July-Aug.
Hypagyrtis unipunctata (Haw.) M July-Aug.
Hypagyrtis piniata (Pack.) P June-July
Erannis tiliaria (Harr.) M 6 Oct.
Lomographa semiclarata (Wlk.) M May-June
Lomographa vestaliata (Gn.) M June-July High
Cabera erythemaria Gn. MP June-Aug.
Cabera variolaria Gn. M June-July
Euchlaena serrata (Drury) MP July
Euchlaena obtusaria (Hbn.) P 4 July
Euchlaena effecta (Wlk.) M July-Aug.
Euchlaena johnsonaria (Fitch) MP July
Euchlaena amoenaria astylusaria (Wlk.) MP
 July
Euchlaena marginaria (Minot) M 4 June
Euchlaena irraria (Barnes & McDunnough) MP
 July
Euchlaena effecta (Wlk.) P 27 June
Xanthotype urticaria Swett P June-July
Xanthotype sospeta (Drury) M July
Pero honestaria (Wlk.) MP June-July
Pero morrisonaria (Hy. Edw.) P 4 July
Campaea perlata (Gn.) P June-July
Ennomos magnaria Gn. MP Aug.-Sept.
Ennomos subsignaria (Hbn.) M July-Aug.
Petrophora subaequaria (Wlk.) MP May-July
Homochlodes fritillaria (Gn.) MP June-July
Selenia kentaria (Grote & Robinson) P May 27
Metanema inatormaria Gn. MP June-Aug.
Metanema determinata Wlk. M Aug. 6
Metarranthis duaria (Gn.) MP June
Metarranthis hypocharia (Herrich-Schaffer) M
 June Garden, High
Cepphis armataria (H. & S.) MP June-July
Anagoga occiduarua (Wlk.) M June
Probole amitaria (Herrich-Schaffer) MP
 May-July
Plagodis serinaria Herrich-Schaffer P 28 May
Plagodis phlogosaria approximaria Dyar MP
 May-July
Caripeta divisata Wlk. MP June-Aug.
Caripeta piniata (Pack.) P 27 June
Caripeta angustiorata Wlk. MP June-Aug.
Besma quercivoraria (Gn.) MP July
Lambdina fiscellaria (Gn.) MP Aug.-Oct.
Cingilia catenaria (Drury) M Sept.
Nepytia canosaria (Wlk.) P Aug.
Nepytia semiclusaria (Wlk.) M Aug.-Sept.
Sicya macularia (Harr.) MP Aug.
Eusarca confusaria Hbn. MP July
Tetracis crocallata Gn. MP July
Tetracis cachexiata Gn. M June-July
Eutrapela clemataria (J.E. Smith) MP
 May-June
Prochoerodes transversata (Drury) MP
 Aug.-Oct.
Nematocampa limbata (Haw.) M July-Aug.
Nemoria mimosaria (Gn.) MP May-July
Synchlora aerata (F.) M July
Chlorochlamys chloroleucaria (Gn.) M
 June-Aug.
Hethemia pistasciaria (Gn.) MP May-June
Mesothea incertata (Wlk.) M 25 May Hog
Idaea demissaria (Hbn.) P 9 July
Pleuroprucha insularia (Gn.) M 4 Sept.
Cyclophora pendulinaria (Gn.) M June-Aug.
Scopula limboundata (Haw.) MP July-Aug.
Scopula junctaria (Wlk.) M July 12 High
Dysstroma truncata (Hufn.) MP Aug.-Sept.
Dysstroma hersiliata (Gn.) M July
Eulithis diversilineata (Hbn.) M July-Sept.
Eulithis testata (L.) MP Aug.-Sept.
Eulithis molliculata (Wlk.) P 6 Aug.
Eulithis explanata (Wlk.) MP Aug.

Ecliptopera silaceata albo-lineata (Pack.) M

June-Sept.

Thera contractata (Pack.) MP July-Sept.*Hydriomena californiata* Pack. M June-July*Hydriomena coeruleata* Fabr. M June-July Hog*Triphosa haesitata affirmaria* (Wlk.) MP

May-Aug.

Coryphista meadii (Pack.) P 6 Aug.*Hydria undulata* (L.) MP June-July*Rheumaptera hastata* (L.) M June-July Gull,

Hog, Garden, High

Mesoleuca ruficollata (Gn.) MP June-July*Spargania magnoliata* Gn. MP June-Sept.*Perizoma basaliata* (Wlk.) M Aug.*Anticlea vasiliata* Gn. P 24 May*Anticlea multiferata* (Wlk.) M 10 July*Xanthorhoe labradorensis* (Pack.) M June-Aug.*Xanthorhoe iduata* (Gn.) M July*Xanthorhoe munitata convallaria* (Gn.) M 16

July

Xanthorhoe lacustrata (Gn.) MP May-Sept.*Epirrhoe sperryi* Herbolot P*Euphyia unangulata intermediata* (Gn.) MP

July-Aug.

Orthonama obstipata (F.) MP June-July*Orthonama centrostrigaria* (Woll.) M

June-Aug.

Hydrelia lucata (Gn.) M 7 July*Hydrelia inornata* (Hulst) P 4-7 July*Trichodezia albovittata* (Gn.) MP May-July*Eubaphe mendica* (Wlk.) MP June-Aug.*Horisme intestinata* (Gn.) MP July-Aug.*Eupithecia palpata* Pack. M 1 July*Eupithecia subfuscata* (Haw.) M June-July*Eupithecia satyrata fumata* Tayl. M 18 July

High

Eupithecia coagulata Gn. MP May & Aug.*Eupithecia pusillata interruptofasciata* Pack. M

June-Sept.

Eupithecia anticaria Wlk. M 7 July*Eupithecia ravocostaliata* Pack. P 28 May*Cladara limitaria* (Wlk.) P May*Lobophora nivigerata* Wlk. P July*Lobophora montanata* Pack. M June-July

EPIPLEMIDAE

Callizzia amorata Pack. MP June-July

LASIOCAMPIDAE

Tolyte laricis (Fitch) MP Aug.-Sept.*Phyllodesma americana* (Harr.) MP June*Malacosoma disstria* Hbn. MP July*Malacosoma americanum* (F.) MP July-Aug.

SATURNIIDAE

Dryocampa rubicunda (F.) MP June-July*Automeris io* (F.) P*Antheraea polyphemus* (Cram.) MP June-July*Actias luna* (L.) MP June-July*Hyalophora cecropia* (L.) P

SPHINGIDAE

Manduca quinquemaculata (Haw.) P*Ceratonia amyntor* (Geyer) MP July*Ceratonia undulosa* (Wlk.) MP June-Aug.*Sphinx chersis* (Hbn.) MP July-Aug.*Sphinx kalmiae* J.E. Smith MP Aug.*Sphinx gordius* Cram. P 27 June*Sphinx drupiferarum* J.E. Smith P 6 July*Lapara bombycoides* Wlk MP June-July*Smerinthus jamaicensis* (Drury) MP June*Smerinthus cerisyi* Kby. MP June-July*Paonias excaecatus* (J.E. Smith) MP June-July*Paonias myops* (J.E. Smith) P 1 July*Laotohe juglandis* (J.E. Smith) MP June-July*Pachysphinx modesta* (Harr.) MP July-Aug.*Hemaris thysbe* (F.) M 24 July High*Hemaris diffinis* (Bdv.) M 2 June High*Hyles gallii* (Rottemburg) P

NOTODONTIDAE

Clostera albosigma Fitch MP June-Aug.*Clostera strigosa* (Grt.) M July*Clostera apicalis* (Wlk.) M June-July*Datana ministra* (Drury) MP July*Nadata gibbosa* (J.E. Smith) MP July*Peridea basitriens* (Wlk.) M July*Peridea angulosa* (J.E. Smith) MP July-Aug.*Peridea ferruginea* (Pack.) MP June-Aug.*Pheosia rimosa* Pack. MP July-Aug.*Odontosis elegans* (Stkr.) M July*Notodonta scitipennis* Wlk. M June-July*Notodonta simplaria* Graef P 1-6 Aug.*Nerice bidentata* Wlk. P 27 June*Gluphisia septentrionis* Wlk. MP June-Aug.*Gluphisia avimacula* Hudson P May*Furcula cinerea* (Wlk.) MP July-Aug.*Furcula scolopendrina* (Bdv.) M 12 Aug.*Furcula modesta* (Hudson) P May-Aug.*Furcula occidentalis* (Lint.) P 4 July*Symmerista albifrons* (J.E. Smith) MP

June-July

Dasylophia thyatiroides (Wlk.) MP June-Aug.*Heterocampa umbrata* Wlk. MP June-July*Heterocampa guttivata* (Wlk.) P 29 June*Heterocampa biundata* M June-July*Lochmaeus manteo* Doubleday M 21 July Hog

Schizura ipomoeae Doubleday M 5 Aug.
Schizura unicornis (J.E.Smith) MP June-Aug.
Schizura apicalis (Grote & Robinson) M 16 July
 High
Schizura concinna (J.E.Smith) M reared
Oligocentria semirufescens (Wlk.) P 18 July
Oligocentria lignicolor (Wlk.) MP July
Hyparpax aurora (J.E.Smith) P June

ARCTIIDAE

Eilema bicolor (Grt.) MP Aug.
Crambidia casta (Pack.) MP Aug.-Sept.
Lycomorpha pholus (Drury) P July
Hypoprepia miniata (Kby.) MP July-Aug.
Hypoprepia fucosa Hbn. MP July-Aug.
Clemensia albata Pack. MP Aug.
Utetheisa bella (L.) M July-Aug.
Haploa confusa (Lyman) MP July-Aug.
Holomelina laeta (Guer.-Meneville) MP July
Holomelina aurantiaca (Hbn.) MP July-Aug.
Pyrrharctia isabella (J.E.Smith) M 10 July
Spilosoma virginica (F.) MP June-Aug.
Hyphantria cunea (Drury) M June-Aug.
Phragmatobia fuliginosa (L.) P July-Aug.
Phragmatobia assimilans Wlk. P 28 May
Arctia caja americana Harr. MP Aug.
Apantesis phyllira (Drury) MP Aug.
Apantesis parthenice (W.Kirby) MP Aug.-Sept.
Halysidota tessellaris (J.E.Smith) MP
 July-Aug.
Lophocampa maculata Harr. MP June-July
Cynia tenera Hbn. MP July
Euchaetes egle (Drury) M High
Ctenucha virginica (Esp.) MP June-July
Cisseps fulvicollis (Hbn.) MP July

LYMANTRIIDAE

Dasychira plagiata (Wlk.) P 2-6 Aug.
Orgyia antiqua (L.) M 5 Sept.
Orgyia leucostigma (J.E.Smith) MP Aug.-Sept.

NOCTUIDAE

Idia americanis (Gn.) MP July-Sept.
Idia aemula Hbn. M July-Aug.
Idia rotundalis (Wlk.) M July-Sept.
Idia scobialis (Grt.) M 28 July
Idia lubricalis (Gey.) M July-Aug.
Phalaenophana pyramusalis (Wlk.) M
 June-July
Zanclognatha theralis (Wlk.) M July-Aug.
Zanclognatha laevigata (Grt.) M 3 Aug.
 Garden
Zanclognatha cruralis (Gn.) M 20 June High

Zanclognatha ochreipennis (Grt.) MP
 July-Aug.
Chytolita morbidalis (Gn.) M July High
Chytolita petrealis Grt. M June-July
Hormisa orciferalis Wlk. P July
Hormisa absorptalis Wlk. P July
Phalaeostola larentioides Grt. P 29 July
Bleptina caradrinalis Gn. M July
Renia flavipunctalis (Gey.) MP July-Sept.
Palthis angulalis (Hbn.) M June-July Hog,
 High
Rivula propinqualis Gn. MP July-Aug.
Hyenodes caducus (Dyar) P 2 Aug.
Hyenodes fractilinea (Sm.) P July-Aug.
Dyspyralis illocata Warr. P 18 July
Bomolocha baltimoralis (Gn.) MP July-Aug.
Bomolocha palparia (Wlk.) MP July
Bomolocha deceptalis (Wlk.) M 22 June High
Plathypena scabra (F.) MP June-Sept.
Spargaloma sexpunctata Grt. M 14 July
Pangrapta decoralis Hbn. M July
Metalectra quadrisignata (Wlk.) M June-Sept.
Alabama argillacea (Hbn.) M Sept.
Scoliopteryx libatrix (L.) MP Aug.
Synedoida adumbrata (Behr) M June-July
Zale lunata (Drury) MP Sept.
Zale minerea (Gn.) P 27 May
Zale duplicata largera (Sm.) P May
Parallelia bistriaris Hbn. M June
Euclidia cuspidata (Hbn.) M 27 May Hog
Caenurgina crassiuscula (Haw.) M Aug.
Caenurgina erechtea (Cram.) MP July-Aug.
Catocala antinympa (Hbn.) M 21 July Garden
Catocala ilia (Cram.) MP Aug.
Catocala cerogama Gn. P July
Catocala relicta Wlk. MP Aug.-Sept.
Catocala unijuga Wlk. MP July-Sept.
Catocala briseis Edw. MP July
Catocala concumbens Wlk. M 27 Sept. High
Catocala ultronis (Hbn.) MP Aug.-Sept.
Catocala grynea (Cram.) P 6 Aug.
Diachrysis aeroides (Grt.) M July-Aug.
Diachrysis balluca Gey. MP July
Autographa precatonis (Gn.) MP May-Sept.
Autographa bimaculata (Steph.) MP July-Aug.
Autographa mappa (Grote & Robinson) P 4
 July
Autographa ampla (Wlk.) MP July
Anagrapha falcifera (Kby.) MP June-July
Syngrapha selecta (Wlk.) M 26 Aug.
Syngrapha rectangula (W.Kby.) MP July
Plusia putnami Grt. M July-Sept.
Plusia venusta Wlk. M 6 Sept. High
Baileya doubledayi (Gn.) P 2 Aug.
Lithacodia bellicula Hbn. P May-July
Lithacodia muscosula (Gn.) MP July-Sept.

- Lithacodia albidula* (Gn.) MP June-July
Lithacodia synochitis (Grote & Robinson) M 5 Aug.
Lithacodia carneola (Gn.) MP July-Aug.
Capis curvata Grt. P 4 July
Leuconycta diptheroides (Gn.) MP June-July
Leuconycta lepidula (Grt.) P 4 July
Panthea acronyctoides (Wlk.) MP July-Aug.
Panthea furcilla (Pack.) MP July-Aug.
Colocasia propinquilinea (Grt.) M 16 July
Charadra deridens (Gn.) MP July
Raphia frater Grt. MP July-Aug.
Acrionicta americana (Harr.) MP July
Acrionicta dactylina Grt. MP 7 July
Acrionicta lepusculina Gn. MP July
Acrionicta innotata Gn. M July-Aug.
Acrionicta grisea Wlk. MP 4 July
Acrionicta quadrata Grt. M 30 June
Acrionicta fragilis (Gn.) MP July
Acrionicta hamamelis Gn. M June-Aug.
Acrionicta afflicta Grt. M July
Acrionicta impleta Wlk. M 1 July
Acrionicta noctivaga Grt. M 19 June
Acrionicta impressa Wlk. MP Aug.
Acrionicta longa Gn. MP Aug.-Sept.
Acrionicta oblonga (J.E.Smith) M July-Aug.
Harrisimemna trisignata (Wlk.) M 28 July
Apamea verbascooides (Gn.) M 6 Aug.
Apamea lignicolora (Gn.) M July-Aug.
Apamea vultuosa (Grt.) M 14 July
Apamea amputatrix (Fitch) MP June-Aug.
Apamea indocilis (Wlk.) M July
Agroperina lateritia (Hufn.) M June-July
Agroperina dubitans (Wlk.) M 29 Aug. High
Crymodes devastator (Brace) MP June-Aug.
Luperina passer (Gn.) MP July
Oligia modica (Gn.) MP July-Aug.
Oligia tonsa subjuncta (Sm.) P 12 July
Oligia bridghami (Grote & Robinson) P July-Aug.
Oligia minuscula (Morr.) M 2 Oct.
Oligia mactata (Gn.) M Aug.-Sept. High
Oligia fractilinea (Grt.) P July-Aug.
Meropleon diversicolor (Morr.) MP Aug.-Oct.
Xylomoia chagnoni Barnes & McDunnough P 22 July
Hypocoena variana (Morr.) M 2 Aug.
Macronoctua onusta Grt. M 10 Sept.
Helotropha reniformis (Grt.) M Aug.-Oct.
Amphipoea velata (Wlk.) M 20 Aug.
Amphipoea americana (Speyer) MP July-Aug.
Papaipema leucostigma (Harr.) M 12 Oct.
Papaipema pterisii Bird P 27 Aug.
Papaipema appassionata (Harv.) P from larva
Papaipema aweme (Lyman) M 13 Aug.
Hydraecia micacea (Esp.) P 21 July
Euplexia benesimilis McD. M July
Phlogophora iris Gn. MP June-July
Phlogophora periculosa Gn. M Aug.
Enargia decolor (Wlk.) MP Aug.-Sept.
Enargia infumata (Grt.) P 16 Aug.-9 Sept.
Ipimorpha pleonectusa Grt. MP July-Sept.
Chytonix palliatricula (Gn.) MP July-Aug.
Hyppa xylinoides (Gn.) P 5 Aug.
Nedra ramosula (Gn.) MP May-Aug.
Callopietria mollissima (Gn.) P July
Callopietria cordata (Ljungh) MP July-Aug.
Amphipyra pyramidooides Gn. MP Aug.-Sept.
Proxenus miranda (Grt.) M June-Sept.
Platyperigea multifera (Wlk.) M Aug.
Balsa malana (Fitch) MP 27 June
Spodoptera frugiperda (J.E.Smith) M Sept.
Elaphria versicolor (Grt.) M 14 July
Elaphria festivoides (Gn.) M June-July
Galgula partita Gn. P 28 May
Ogdoconia cinereola (Gn.) M June-July
Amolita fessa Grt. P 9 July
Lithophane petulca Grt. P May
Psectraglaea carnosa (Grt.) M 2 Oct.
Eucirroedia pampina (Gn.) M Aug.-Oct.
Sunira bicolorago (Gn.) M 2 Oct.
Anathix puta (Grote & Robinson) P 27 Aug.
Xanthia togata (Esp.) M Sept.
Xylotype capax (Grt.) M 14 Sept. High
Brachylomia algens (Grt.) M 6 Sept. High
Feralia jocosa (Gn.) P 27 May
Feralia comstocki (Grt.) P May
Homohadena badistriga (Grt.) P July
Oncocnemis riparia Morr. M June-July High
Cucullia intermedia Speyer P 7 July
Discestra trifolii (Hufn.) P 27 Aug.
Polia nimbosea (Gn.) P 12 July
Polia imbrifera (Gn.) M July-Aug.
Polia purpurissata (Grt.) M Aug.
Polia detracta (Wlk.) M July-Aug.
Polia obscura (Sm.) M 8 July
Polia latex (Gn.) M June-July
Melanchnra adjuncta (Gn.) M High
Melanchnra assimilis (Morr.) M June-July
Lacanobia atlantica (Grt.) M 9 July
Lacanobia grandis (Gn.) M 18 June
Lacanobia lutra (Gn.) M June-July
Lacanobia legitima (Grt.) P 7 July
Lacanobia lilacina (Harv.) P 7 July
Papestra quadrata (Sm.) P
Anepia capsularis (Gn.) M 1 July
Anarta cordigera (Thunb.) P 28 May
Lacinipolia meditata (Grt.) M Aug.
Lacinipolia anguina (Grt.) MP May-July
Lacinipolia vicina (Grt.) MP July-Aug.
Lacinipolia renigera (Steph.) MP June-Aug.
Lacinipolia lorea (Gn.) MP June-July

- Lacinipolia olivacea* (Morr.) MP Aug.-Sept.
Faronta diffusa (Wlk.) M June-Aug.
Aletia oxygala luteopallens (Sm.) M July-Aug.
Pseudaletia unipuncta (Haw.) MP May-Aug.
Leucania multilinea Wlk. M July-Aug.
Leucania commoides Gn. MP July
Leucania insueta Gn. M June
Leucania pseudargyria Gn. MP 7 July
Orthosia revicta (Morr.) P May
Crocigrapta normani (Grt.) P 27 May
Egira dolosa (Grt.) P 27 May
Nephelodes minians Gn. MP Aug.-Sept.
Homorthodes furfurata (Grt.) M 28 July
Protorthodes incincta (Morr.) P Aug.
Protorthodes oviduca (Gn.) MP June-Sept.
Ulolonche modesta (Morr.) MP June
Orthodes crenulata (Butler) M 3 Aug.
Orthodes cynica Gn. M June-July
Tricholita signata (Wlk.) MP July-Aug.
Agrotis vetusta Wlk. MP Aug.-Sept.
Agrotis mollis Wlk. P 22 July
Agrotis gladiaria Morr. M 9 Sept.
Agrotis venerabilis Wlk. M 15 June
Agrotis ipsilon (Hufn.) MP Aug.-Sept.
Feltia jaculifera (Gn.) MP Aug.-Sept.
Feltia subgothica (Haw.) MP Aug.
Feltia herilis (Grt.) MP July-Aug.
Feltia geniculata Grote & Robinson MP
 Aug.-Sept.
Euxoa divergens (Wlk.) M June-Aug.
Euxoa sinelinea Hdwk. P 22 July
Euxoa messoria (Harr.) M Aug.
Euxoa scandens (Riley) M July-Aug.
Euxoa pleuritica (Grt.) P 22 July
Euxoa mimallonis (Grt.) MP Aug.
Euxoa ochrogaster (Gn.) M 6 Aug.
- Euxoa tessellata* (Harr.) M 8 July-3 Sept.
Euxoa catenula (Grt.) M Aug.-Sept.
Euxoa perexcellens (Grt.) M Aug.
Euxoa detersa (Wlk.) MP Aug.-Sept.
Euxoa redimicula (Morr.) M July
Ochropleura plecta (L.) M July-Aug.
Peridroma saucia (Hbn.) M June-Sept.
Diarsia rubifera (Grt.) MP July-Sept.
Diarsia jucunda (Wlk.) M July-Aug.
Actebia fennica (Tauscher) M June-Sept.
Spaelotis clandestina (Harr.) M June-Aug.
Graphiphora haruspica (Grt.) MP July-Aug.
Eurois occulta (L.) MP July-Aug.
Xestia dolosa Franc. MP June-Aug.
Xestia normaniana (Grt.) MP Aug.
Xestia smithii (Snell.) M July-Aug.
Xestia bicarnea (Gn.) MP July-Aug.
Xestia tenuicula ? (Morr.) M 23 July
Anomogyna elimata (Gn.) M July-Aug.
Anomogyna badicollis (Grt.) P Aug.
Anomogyna dilucida (Morr.) M 8 Sept.
Paradiarsia littoralis (Pack.) MP June-July
Anaplectoides prasina (Denis & Schiffermuller)
 MP Aug.-Sept.
Anaplectoides pressus (Grt.) M July-Aug.
Protolampra brunneicollis (Grt.) P
Eueretagrotis perattenta (Grt.) M June-Aug.
Heptagrotis phyllophora (Grt.) M July-Aug.
Cryptocala acadensis (Bethune) MP July-Aug.
Abagrotis alternata (Grt.) M 6 Sept.
Rhynchagrotis cupida (Grt.) P 3 Aug.
Rhynchagrotis anchocelioides (Gn.) M Aug.-Sept.
Pyrrhia umbra (Hufn.) M June-Aug.
Heliothis zea (Boddie) M Sept.
Schinia rivulosa (Gn.) M 24 Aug. High
Schinia florida (Gn.) M 10 Aug. High

DISCUSSION

Moore (1930) listed *Gluphisia lintneri* (Notodontidae) as occurring on Beaver Island. Originally *G. lintneri* and *G. avimacula* were synonymous and therefore mixed in Moore's data. The two are now valid species and *G. avimacula* is extremely abundant on Beaver Island. Although *G. lintneri* may occur, none were collected, and upon examination of Moore's specimens at the University of Michigan collection, all were *G. avimacula*. *Enargia decolor* (Noctuidae) and *E. infumata*, were also originally thought to be one species. Although Moore (1930) listed only *E. decolor*, his specimens include data on both species. Another noctuid, listed by Moore (1930) as *Euplexia lucipara* is now referred to as *E. benesimilis* (Hodges et al. 1983). *E. lucipara* is a palearctic species and does not occur in North America. No endangered or threatened species were found based on the list of endangered lepidopteran species of Michigan (DNR 1988). One "species of special concern" (DNR 1988), *Papaipema aweme* (one specimen), (Noctuidae), was recorded by Moore (1930). This species is known only from a few specimens collected in various parts of North America (M. C. Nielsen, pers. comm.). Little is known about its life history, but the

species may be associated with wetlands or shoreline environments. Repeated efforts to recollect it along lake edges were unsuccessful.

Further investigations should turn up additional species new to Beaver Island, especially moths at ultraviolet/mercury vapor lights. Future collecting should be concentrated in the southern portions of the island and in a variety of habitats. With the exception of Iron Ore Bay, collecting has been virtually nonexistent in areas surrounding Green's Bay, French Bay, Miller's Marsh, Lake Geneserath, and on the satellite islands.

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