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Preliminary List of Michigan Moths: The Microlepidoptera

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With a continued focus on Michigan's lepidopteran fauna, I present the following preliminary checklist of Michigan's microlepidoptera. This endeavor represents the first comprehensive list ever published of Michigan's micros, and can serve as a 'benchmark' for future changes, corrections and additions. The list now includes 1,217 species that are currently recognized as microlepidoptera. This list, along with the two previously published checklists (Nielsen 1997, 1998), completes the Michigan Lepidoptera trilogy.

Essentially, I followed the Hodges et al. (1983) "Checklist of the Lepidoptera of America North of Mexico" insofar as nomenclature, arrangement, and checklist numbers are concerned. Since 1983, however, there have been several changes in nomenclature, several new species have been discovered, and many new state records have been made. I hope that this trend will continue for many years to come! Kindly forward any changes, corrections or additions to me at the above address.

As the compiler of this checklist, I have personally examined specimens in the Michigan State University and the University of Michigan collections, culled records from various scientific publications, and solicited data and changes from many 'micro' specialists and 'reputable' avocational lepidopterists. To all, I give my heartfelt thanks for their splendid cooperation.

References:

Hodges et al. 1983. Check list of the Lepidoptera of America north of Mexico. Curwen Press, London.

Nielsen, M.C. 1997. Preliminary checklist of Michigan moths (superfamilies Bombycoidea, Drepanoidea, Geometroidea, Mimallonoidea, Noctuoidea, Sphngoidea). Newsletter of the Michigan Entomological Society 42 (2-4): 16-26.

Nielsen, M.C. 1998. Checklist of Michigan butterflies and skippers. Newsletter of the Michigan Entomological Society 43 (1): 8-10.

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Micropterigidae

- Epimartyria
1 auricrinella (Wlsm., 1898)

Eriocraniidae

- Dyseriocrania
3 griseocapitella (Wlsm., 1898)
4 auricyanea (Wlsm., 1882)

Hepialidae

- Sthenopsis
18 argenteomaculatus (Harr., 1842)
19 purpurascens (Pack., 1863)
20 quadriguttatus (Grt., 1864)
22 auratus Grt., 1878

Hepialus

- 23 hyperboreus Mosch., 1862
31 gracilis Grt., 1864

Nepticulidae

- Ectoedemia
52 populella Bsk., 1907
56 castaneae Bsk., 1913

Stigmella

- 63 scintillans (Braun, 1917)
78 rosaefoliella (Clem., 1861)
79 slingerlandella (Kft., 1908)
88 latifasciella (Cham., 1878)
92 corylifoliella (Clem., 1861)

Opostegidae

- Opostega
119 cretea Meyr., 1920
121 albogaleriella Clem., 1862
122 quadristrigella Cham., 1875

Tischeriidae

- Tischeria
126 citrinipennella Clem., 1859
143 zelleriella Clem., 1859
144 quercitella Clem., 1863
145 malifoliella Clem., 1860
156 solidagonifoliella Clem., 1859
160 ambrosiaella Cham., 1875

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Officers of M.E.S.

President	Leah Bauer
President-Elect	Ron Priest
Immediate Past President	Dan Herms
Secretary	Robert Kriegel
Treasurer	Mo Nielsen
Member-at-Large (1998-01)	Dave Cuthrell
Member-at-Large (1997-00)	Chip Franke
Member-at-Large (1996-99)	Tom Wallenmaier
Journal Editor	Mark O'Brien
Newsletter Editor	Bob Haack
Associate Newsletter Editor	Therese Poland

MES Governing Board Meeting Minutes

At 6:00 PM on November 5, 1998, the Governing Board of the Michigan Entomological Society met in the conference room of the Department of Entomology at Michigan State University. The following board members were present: Leah Bauer, David Cuthrell, Bob Haack, Bob Kriegel, Mogens Nielsen, Mark O'Brien, Ronald Priest and Tom Wallenmaier. The following issues were discussed:

1. Plans for the 1999 MES annual meeting were discussed. The Friday following Memorial Day, June 4th, was selected as the meeting date. Two potential locations were proposed. Ronald Priest suggested the Ralph A. MacMullen Center, a MDNR conference center located in the Higgins Lake area. Several board members have attended events at this facility and concurred that the Center would make an excellent meeting place. Mark O'Brien suggested the Outdoor Teaching Facility associated with the Edwin S. George Reserve as a potential meeting location. This University of Michigan teaching and conference facility is located in Livingston County. The Board selected the UM facility as the first choice for the meeting site, with the MacMullen Center as a backup.

Potential ways to increase attendance at the annual meeting and attract a larger, more diverse audience were discussed. Ronald Priest proposed a new format for this year's meeting involving invited presentations with a unifying theme of "Insect and Ecosystem Diversity in the Great Lakes Region." Dennis Albert, author of "Regional Landscape Ecosystems of Michigan, Minnesota, and Wisconsin", was suggested as the featured speaker. Lengthy discussion on the proposed meeting format and other potential speakers followed. The board also decided to add a poster session to this year's meeting. Additional information about the annual meeting, including a meeting schedule, list of invited speakers and a call for submitted posters will be published in the society's newsletter.

2. A discussion on the nomination of officers for 1999-2000 followed. Potential candidates for President and member at large were discussed. A final ballot will be prepared in February and distributed to the membership.
3. Mark O'Brien, editor of the Great Lakes Entomologist, gave a report on the society's journal. At the time of the governing board meeting, the summer issue of the journal was at the printer and work was underway on the Fall issue. Mark has been the journal's editor since 1988 and is very interested in turning some of the editorial responsibilities over to an interested society member. A discussion on this topic followed.
4. Bob Haack gave a report on the MES Newsletter. The next newsletter issue should be published in late November or early December. Then, a double issue of the newsletter will be published around the beginning of the year. Bob also distributed copies of the latest Entomology Notes article by he and Therese Poland. The piece about bark beetles is entitled, "Reading the Lines under Bark". This article is the 25th in the Entomology Notes series. Mark O'Brien commented that the Entomology Notes articles are the most commonly downloaded items on the society's web pages.
5. Mogens Nielsen delivered the treasurer's report. As of November 4, 1998, the society's holdings are distributed between petty cash (\$5), checking account (\$32,40), checks on hand (\$1,100), certificates of deposit (\$6,306 @ 4.5% interest) and accounts receivable (\$3,400). Total assets were \$14,051; this compares to assets at this time last year of \$12,945, and in 1996 of \$13,663. Expected income for the remainder of the year is \$6,700. Expected expenses for the remaining months of 1997 are \$5,100. The prognosis for the society's finances for the next six months is good.
6. Bob Kriegel delivered the secretary's report. As of November 4, 1998, the society membership is as follows: 359 active members, 23 sustaining members, 21 lifetime members, two honorary members and one student member. In addition, there are 59 institutional memberships and 293 subscriptions to the society's journal. Finally, 127 copies of the society's publications are distributed gratis, primarily to high school biology teachers throughout Michigan.
7. Two additional topics were discussed. First, as we have done for several years the society will be sending \$250 to the Michigan 4-H Foundation as the prize for the state 4-H entomology award. This item began a discussion on what members of the society could do to promote entomology and an appreciation of insects among young people. Both Leah Bauer and Ron Priest expressed an interest in pursuing this idea with 4-H leadership.
8. The meeting was adjourned at 8:30 PM.

Respectfully submitted, Robert D. Kriegel, Secretary

Notices:

Meeting. Michigan Mosquito Control Association annual meeting – 4-5 February 1999, Southgate Holiday Inn, Southgate, MI. Contact Gloria Katch, 211 Congress St., Saginaw, MI 48602. Phone (517) 755-5751

Butterfly Gardens and Educational Games. Contact Kathy Wildman by phone (614-965-2133) or by mail (PO Box 1069, Sunbury, Ohio 43074) to obtain a current list of items for sale, including butterfly garden designs, plants to attract butterflies, and several games.

Wanted: Michigan Orthoptera Records. Contact: Roger Bland, Department of Biology, Central Michigan University, Mt. Pleasant, MI 48859. Telephone: 517-774-3455; FAX 517-774-3462.

Research Opportunities for qualified investigators at the Huron Mountains in the upper peninsula of Michigan. Submit project proposal and resume (and budget if financial support is requested) by March 1 of each year to: Dr. David Gosling, Director of Research; Huron Mountain Wildlife Foundation; 69063 Wallowa Road; White Pigeon, MI 49099-9745. Phone: 616-651-6417; FAX: 616-651-3679.

1999 Summer internship position Field Entomology Specialist to conduct surveys for rare, threatened, and endangered species of insects that inhabit prairies, prairie fens, sedge meadows, and other habitats on Nature Conservancy preserves and other private or public lands. This person

will assist the Stewardship Ecologist in monitoring rare insect populations. S/he may also assist in other inventory or management tasks on Conservancy preserves. Most of this work will be done in the southern Lower Peninsula of Michigan. This position requires experience in collecting, pinning and identifying insects. Knowledge of prairie and wetland plants will be useful.

APPLICATION DATE: Send a cover letter, resume and list of 3 references (including addresses and phone numbers) to: Ruth Lee-Clark, Director of Administration, The Nature Conservancy, 2840 E. Grand River, Suite 5, East Lansing, MI 48824, by FEBRUARY 15, 1999. No phone calls please.

In Search of a New Editor for the Great Lakes Entomologist

Mark O'Brien

Insect Division, Museum of Zoology, University of Michigan, Ann Arbor, MI 48109-1079

Looking for a new challenge? Do you want to learn new skills? Consider becoming the Editor of the *Great Lakes Entomologist*.

As the Editor of the *Great Lakes Entomologist* since 1988, I feel it is time for me to hand the duties over to someone else. My work with the Michigan Odonata Survey demands more of my time, and I do not want to detract from the quality of the journal. Ideally, I would like a new editor in place by spring 1999.

Much has changed since I took over from David Gosling. In 1988, producing an issue of the *Great Lakes Entomologist* was quite different from today's electronic publishing process. Editorial skills today are a meld of classical editing skills and computer savvy. Accordingly, some processes are streamlined. Manuscripts are no longer typed by the typesetter from marked up pages provided by the editor. Now, the entire issue is provided on disk to the typesetters after the manuscripts have been formatted according to the journal's standards. Photographs and line figures are scanned electronically by the typesetters. After the proofs have been checked and corrected, the typesetter sends the issue on disk to the printers and the journal is printed. The result of this has been fewer errors and corrections, a faster turnaround time from submission to proofs, and lower costs to the Society. As a result, our page costs have actually decreased, taking account of inflation.

I believe our Society offers a regional journal of good quality, excellent subject matter and provides a real service to the membership. Of course, this could not have happened without the support of the many people who help by reviewing the manuscripts, and of course, the authors themselves. I feel fortunate to have worked with so many people in the Society over the years. I think I have learned a lot from the authors and reviewers, too. Remarkably, only five editors have served the MES since the inception of the journal in 1966.

There is no long list of requirements to be met by potential editors—only that the person(s) doing the editing make an honest effort to produce a quality journal that represents the interests of the members of the Michigan Entomological Society. Of course you have to have a reasonable command of English, as well as some basic editing skills and attention to detail. There is a lot of OJT (On the Job Training) involved, and nobody is expected to be perfect. It is a wonderful way to enhance your career and in the process, gain new skills and contacts. This is a volunteer position, and the editor is also a member of the MES Governing Board.

I realize that few potential editors will have all of the computer skills that I put to use when readying an issue for the typesetters. Therefore, I am willing to be an interim "Associate Editor" to handle the electronic aspects of the journal, while the new Editor takes care of incoming manuscripts, gets them through the review process, and edits them to satisfaction.

If you are interested in becoming the editor of the *Great Lakes Entomologist* (or wish to nominate someone), please give me a call (734-647-2199) or email me (mfobrien@umich.edu). The editor's job description will be on the MES website at: <http://insects.ummz.lsa.umich.edu/MES/editor.html>.

Incurvariidae

- Lampronia
175 russatella (Clem., 1860)
- Paraclemensia
181 acerifoliella (Fitch, 1854)
- Tegeticula
198 yuccasella (Riley, 1872)
- Prodoxus
200 quinquepunctella (Cham., 1875)
- Adela
228 ridingsella Clem., 1864
229 purpurea Wlk., 1863

Heliozelidae

- Antispila
232 cornifoliella Clem., 1860
234 nysaefoliella Clem., 1860
236 isabella Clem., 1860
- Coptodisca
254 splendoriferella (Clem., 1860)

Tineidae

- Nemapogon
261 acapnopennella (Clem., 1863)
263 auropulvella (Cham., 1873)
266 granella (L., 1758)
- Diachorisia
279 velatella Clem., 1860
- Homosetia
289 costisignella (Clem., 1863)
294 miscecrstatella (Cham., 1873)
- Scardia
308 approximata Dietz, 1905
310 fuscofasciella (Cham., 1875)
- Fernaldia
311 anatomella Grt., 1881
- Morphagoides
314 burkerella (Bsk., 1903)
- Xylesthia
317 pruniramiella Clem., 1859
- Kearfottia
319 albifasciella Fern., 1904
- Amydria
329 brevipennella Dietz, 1905
334 effrentella Clem., 1859
- Acrolophus
340 arcanella (Lem., 1859)
367 morus (Grt., 1881)
372 plumifrontella (Clem., 1859)
373 popeanella (Clem., 1859)
374 propinquus (Wlsm., 1887)

Tinea

- 392 apicimaculella Cham., 1875
394 carnariella Clem., 1859
396 croceovorticella Cham., 1876
400 mandarinella Dietz, 1905
401 misceella Cham., 1873
405 pellationella L., 1758

Niditinea

- 411 spretella (D. & S., 1775)

Monopis

- 416 dorsistrigella (Clem., 1859)
418 monachella (Hbn., 1796)
420 rusticella (Hbn., 1796)
421 spilotella Tengstrom, 1848

Tineola

- 426 bisselliella (Hummel, 1823)

Psychidae

Psyche

- 437 casta (Pallas, 1767)

Solenobia

- 435 walshella Clem., 1862
436 triquetrella (Hbn., 1812)

Apteronia

- 438 helix (Siebold, 1850)

Astala

- 443 confederata (G. & R., 1868)

Hyaloscotes

- 449 pithopoera (Dyar, 1923)

Thyridopteryx

- 457 ephemeraeformis (Haw., 1803)

Lyonetidae

Philonome

- 462 clemensella Chan., 1874

Bedellia

- 466 somnulentella (Zell., 1847)

Paraleucoptera

- 475 albella (Cham., 1871)

Bucculatrix

- 486 montana Braun, 1920
487 magnella Cham., 1875
499 cuneigera Meyr., 1919
515 agnella Clem., 1860
522 angustata F. & B., 1876
549 packardella Cham., 1873
554 trifasciella Clem., 1866
555 quinquenotella Cham., 1875
560 canadensisella Cham., 1875
572 ainsliella Murt., 1905
577 pomifoliella Clem., 1860

Gracillariidae

Caloptilia

- 587 alnivorella (Cham., 1875)
589 anthobaphes (Meyr., 1921)
594 belfragella (Cham., 1875)
595 bimaculatella (Ely, 1915)
597 burgessiella (Zell., 1873)
600 cornusella (Ely, 1915)
601 coroniella (Clem., 1864)
606 fraxinella (Ely, 1915)
608 hypericella (Braun, 1918)
614 murtfeldtella (Bsk., 1904)
622 paradoxa (F. & B., 1873)
627 quercinigrrella (Ely, 1915)
630 rhoifoliella (Cham., 1876)
635 scutellariella (Braun, 1923)
639 stigmatella (F., 1781)
641 superbifrontella (Clem., 1860)
643 vacciniella (Ely, 1915)
645 syringella (F., 1794)

Micrurapteryx

- 647 salicifoliella (Cham., 1872)

Parectopa

- 653 lespedezaefoliella Clem., 1860
656 plantaginisella (Cham., 1872)
657 robiniella Clem., 1863

Paromix

- 669 conspicuella (Dietz, 1907)
675 inusitatumella (Cham., 1873)

Acrocercops

- 692 astericola (F. & B., 1873)

Leucospilapteryx

- 698 venustella (Clem., 1860)

Leucanthiza

- 701 dircella Braun, 1914

Cremastobombycia

- 723 solidaginis (F. & B., 1876)

Phyllonorycter

- 738 basistrigella (Clem., 1859)
739 bataviella (Braun, 1908)
744 clemensella (Cham., 1871)
752 fitchella (Clem., 1860)
753 fragilella (F. & B., 1878)
755 hagenii (F. & B., 1873)
764 lucetiella (Clem., 1859)
765 lucidicostella (Clem., 1859)
769 mariaella (Cham., 1875)
770 martiella (Braun, 1908)
773 morrisella (Fitch, 1859)
784 propinquella (Braun, 1908)
786 restrictella (Braun, 1939)

- 790 robiniella (Clem., 1859)
 791 salicifoliella (Cham., 1875)
 799 trinotella (Braun, 1908)
 800 tritaenianella (Cham., 1871)
- Cameraria**
 803 aceriella (Clem., 1859)
 815 cincinnatiella (Cham., 1871)
 822 guttifinitella (Clem., 1859)
 823 hamadryadella (Clem., 1859)
 824 hamameliella (Bsk., 1903)
 832 ostryarella (Cham., 1871)
 835 quercivorella (Cham., 1879)
 839 ulmella (Cham., 1871)
- Chrysaster**
 842 ostensackenella (Fitch, 1859)
- Phyllocnistis**
 846 insignis F. & B., 1876
 852 populiella Cham., 1875
 854 vitifoliella Cham., 1871
- Oecophoridae**
- Agonopterix**
 856 hyperella Ely, 1910
 857 lythrella (Wlsm., 1889)
 859 curvilineella (Beutenmuller, 1889)
 862 clemensella (Cham., 1876)
 864 atrodorsella (Clem., 1863)
 865 pteleae B. & Bsk., 1920
 867 pulvipennella (Clem., 1864)
 868 nigrinotella (Bsk., 1908)
 869 walsinghamella (Bsk., 1902)
 874.1 alstroemeriana (Cl., 1759)
 878 canadensis (Bsk., 1902)
 880 flavicomella (Engel, 1907)
 881 senicionella (Bsk., 1902)
 882 robiniella (Pack., 1869)
 884 thelmae Clarke, 1941
 888 pergandeella (Bsk., 1908)
 889 argillacea (Wlsm., 1881)
- Depressariodes**
 899 caneela (Bsk., 1904)
 908 ciniflonella (Lienig & Zell., 1846)
- Bibarrambla**
 911 allenella (Wlsm., 1882)
- Semioscopis**
 912 packardella (Clem., 1863)
 913 merricella Dyar, 1902
 914 inornata Wlsm., 1882
 915 megamicrella Dyar, 1902
 916 aurorella Dyar, 1902
- Depressaria**
 921 cinereocostella Clem., 1864
 922 pastinacella (Dup., 1838)
- Machimia**
 951 tentoriferella Clem., 1860
- Psilocorsis**
 955 quercicella Clem., 1860
 956 cryptolechiella (Cham., 1872)
 957 reflexella Clem., 1860
- Ethmia**
 986 bipunctella (F., 1775)
 987b monticola fuscipedella (Wlsm., 1888)
 992 zelleriella (Cham., 1878)
- Antaeotricha**
 1011 schlaegeri (Zell., 1854)
 1013 unipunctella (Clem., 1863)
 1014 leucillana (Zell., 1854)
 1019 humilis (Zell., 1855)
- Setiostoma**
 1026 xanthobasis Zell., 1875
- Menestra**
 1030 tortriciformella Clem., 1860
- Gonioterma**
 1032 mistrella (Bsk., 1907)
- Decantha**
 1042 boreasella (Cham., 1873)
- Callima**
 1046 argenticinctella (Clem., 1860)
- Brymbia**
 1055 quadrimaculella (Cham., 1875)
- Polix**
 1058 coloradella (Wlsm., 1888)
- Mathildana**
 1059 newmanella (Clem., 1864)
- Carolana**
 1062 ascriptella (Bsk., 1908)
- Martyringa**
 1065 latipennis (Wlsm., 1882)
- Endrosis**
 1067 sarcitrella (L., 1758)
- Eido**
 1068 trimaculella (Fitch, 1856)
- Elachistidae**
- Elachista**
 1083 orestella Bsk., 1908
 1099 patriodoxa Meyr., 1932
 1100 irrorata Braun, 1920
 1105 maculosella (Clem., 1860)
 1123 argentosa Braun, 1920
- Biselachista**
 1126 leucosticta (Braun, 1948)
- Cosmiotes**
 1129 illectella Clem., 1860
 1131 scopulicola Braun, 1948
- Dicranoctetes**
 1132 brachyelytrifoliella (Clem., 1864)
- Blastobasidae**
- Oegoconia**
 1134 quadripuncta (Haw., 1828)
- Sceptea**
 1135 aequapulvella (Cham., 1872)
- Gerdana**
 1144 caritella Bsk., 1908
- Valentinia**
 1162 glandulella (Riley, 1871)
- Calosima**
 1168 argyrosplendella Dietz, 1910
 1169.1 maligemmella (Murt., 1898)
- Holococera**
 1175 chalcofrontella Clem., 1863
 1209 purpuricomella Clem., 1863
 1221 immaculella McDunnough, 1930
- Dryoperia**
 1246 murtfeldtella (Cham., 1874)
- Coleophoridae**
- Coleophora**
 1254 malivorella Riley, 1878
 1256 tiliaefoliella Clem., 1861
 1260 elaeagnisella Kft., 1908
 1261 querciella Clem., 1861
 1271 pruniella Clem., 1861
 1286 ledi Staint., 1860
 1288 manitoba Bsk., 1915
 1290 kearfottella B. & Bsk., 1920
 1297 cornella Wlsm., 1882
 1301 ulmifoliella McD., 1946
 1311 laricella (Hbn., 1814-17)
 1318 heinrichella (McD., 1933)
 1344 detractella McD., 1961
 1349 lineapulvella Cham., 1874
 1361 borea Braun, 1921
 1365 cratipennella Clem., 1864
 1385 maritella McD., 1941
 1387 mayrella (Hbn., 1813)
 1388 trifolii (Curt., 1832)
 1388.1 deauratella Lienig. & Zell., 1846
- Batrachedra**
 1399 praeangusta (Haw., 1828)
 1401 curvilineella (Cham., 1872)

Momphidae

Mompha

- 1430 brevivittella (Clem., 1864)
- 1432 capella Bsk., 1940
- 1433 cephalonthiella (Cham., 1871)
- 1443 eloisella (Clem., 1860)
- 1445 luciferella (Clem., 1860)
- 1448 murtfeldtella (Cham., 1875)
- 1455 stellella Bsk., 1906
- 1456 terminella (Westwood, 1851)

Agonoxenidae

Blastodacna

- 1460 bicristatella (Cham., 1875)

Glyphipteryx

- 1463 linneella (Cl., 1759)

Cosmopterigidae

Euclemensia

- 1467 bassetella (Clem., 1864)

Cosmopterix

- 1469 nitens Wlsm., 1889
- 1472 pulcherrimella Cham., 1875
- 1490 gemmiferella Clem., 1860
- 1496 fernaldella Wlsm., 1882

Stagmatophora

- 1509 wyattella B. & Bsk., 1920

Pyroderces

- 1512 rileyi (Wlsm., 1882)

Limnaecia

- 1515 phragmitella Staint., 1851

Periploca

- 1562 ceanothiella (Cosens, 1908)

Stilbosis

- 1609 tesquella Clem., 1860

Walshia

- 1615 miscecolorella (Cham., 1875)
- 1616 amorphella Clem., 1864
- 1619 similis Hodges 1961

Perimede

- 1623 erransella Cham., 1874
- 1632 falcata Braun, 1919

Scythrididae

Scythris

- 1652 basilaris (Zell., 1855)
- 1655 eboracensis (Zell., 1855)
- 1659 fuscioomella (Clem., 1860)
- 1670 pilosella (Zell., 1873)
- 1673 limbella (F., 1775)
- 1673.1 immaculatella (Cham., 1875)

Asymmetrura

- 1662 impositella (Zell., 1855)

Gelechiidae

Metzneria

- 1685 lappella (L., 1758)

Isophrictis

- 1705 trimaculella (Cham., 1874)

Chrysoesthia

- 1718 lingulacella (Clem., 1860)

Stereomita

- 1725 andropogonis Braun, 1922

Aristotelia

- 1761 roseosuffusella (Clem., 1860)

Glauce

- 1766 pectenalaecella Cham., 1875

Evippe

- 1771 prunifoliella Cham., 1873

Coleotechnites

- 1789 apicitripunctella (Clem., 1860)
- 1792 atrupictella (Dietz, 1900)
- 1826 piceaella (Kft., 1903)
- 1832 thujaella (Kft., 1903)

Exoteleia

- 1837 dodecella (L., 1758)
- 1839 nepheos Free., 1967
- 1840 pinifoliella (Cham., 1880)

Taygete

- 1842 attributella (Wlk., 1864)
- 1846 saundersella (Cham., 1876)

Arogalea

- 1851 cristifasciella (Clem., 1878)

Telphusa

- 1857 latifasciella (Cham., 1875)
- 1858 longifasciella (Clem., 1863)

Pseudotelphusa

- 1869 belangerella (Cham., 1875)
- 1874 quercinigracella (Cham., 1872)

Xenolechia

- 1875 aethiops (Humphreys & Westwood, 1845)

Lita

- 1898 sexpunctella (F., 1874)

Deltophora

- 1928 sella (Cham., 1874)

Gelechia

- 1946 lynceella Zell., 1873
- 1961 rileyella (Cham., 1872)
- 1966 versutella Zell., 1873

Gnorimoschema

- 1973 banksiella Bsk., 1903
- 1974 batanella Bsk., 1903
- 1985 gallaeasterella (Kellicott, 1878)

- 1986 gallaesolidaginis (Riley, 1869)

- 1997 salinaris Bsk., 1911

Phthorimaea

- 2011 operculella (Zell., 1873)

Scrobipalpa

- 2025 atriplicella (F. v. Roslerstamm, 1839)

Symmetrischema

- 2035 lavernella (Cham., 1874)

Tildenia

- 2050.1 georgei Hodges, 1985

Frumenta

- 2052 nundinella (Zell., 1873)

Chionodes

- 2064 bicostomaculella (Cham., 1872)
- 2069 continuella (Zell., 1839)
- 2072 discoocellella (Cham., 1872)
- 2074 flavicorporella (Wlsm., 1882)
- 2075 fluvialella (Bsk., 1908)
- 2076 fondella (Bsk., 1906)
- 2077 formosella (Murt., 1881)
- 2079 fuscomaculella (Cham., 1872)
- 2087 labradoricus (Mosch., 1864)
- 2090 lugubrella (F., 1794)
- 2093 mediofuscella (Clem., 1863)
- 2099 obscurusella (Cham., 1872)
- 2104 pereyra Clarke, 1947
- 2110 pseudofondella (Bsk., 1908)
- 2119 thoraceochrella (Cham., 1872)

Filatima

- 2164 persicaella (Murt., 1899)
- 2169 pseudacaciella (Cham., 1872)
- 2172 serotinella (Bsk., 1903)
- 2179 vaccinii Clarke, 1947

Aroga

- 2184 argutiola Hodges, 1974
- 2198 trialbamaculella (Cham., 1875)

Stegasta

- 2209 bosquella (Cham., 1875)

Battaristis

- 2227 nigrotomella (Clem., 1863)

Anacamptis

- 2230 agrimoniella (Cham., 1860)
- 2233 conclusella (Wlk., 1864)
- 2237 innocuella (Zell., 1873)
- 2242 lupinella Bsk., 1901
- 2243 niveopulvella (Cham., 1875)

Anarsia

- 2257 lineatella Zell., 1839

Sitotroga

- 2260 cerealella (Oliver, 1789)

Hellystogramma

- 2267 fernaldella (Bsk., 1903)
 2268 hystericella Braun, 1921
 2269 melanocarpum Meyr., 1929

Dichomeris

- 2274 bipunctella (Wlsm., 1882)
 2276.1 furia Hodges, 1986
 2277 georgiella (Wlk., 1866)
 2278 glenni Clarke, 1947
 2281 ligulella Hbn., 1818
 2282 marginella (F., 1781)
 2283 punctidiscella (Clem., 1863)
 2286 vacciniella Bsk., 1915
 2287 ventrella (Fitch, 1854)
 2289 ochripalpella (Zell., 1873)
 2291 bilobella (Zell., 1873)
 2292 citrifoliella (Cham., 1880)
 2293 costarufocella (Cham., 1874)
 2295 flavocostella (Clem., 1906)
 2297 inserrata (Wlsm., 1882)
 2298 juncidella Clem., 1860
 2299 leuconotella Bsk., 1904
 2300 levisella Fyles, 1904
 2301 serrativitella (Zell., 1873)
 2302 setosella Clem., 1860
 2305 agonia Hodges, 1986
 2306 washingtoniella Bsk., 1906
 2307 nonstrigella (Cham., 1878)
 2308 purpureofusca (Wlsm., 1882)
 2310 inversella (Zell., 1873)
 siren Hodges, 1986
 vindex Hodges, 1986
 aleatrix Hodges, 1986
 copa Hodges, 1986
 scrutaria Hodges, 1986
 furia Hodges, 1986
 bolize Hodges, 1986
 isa (Hodges, 1986)
 mercatrix Hodges, 1986
 offula Hodges, 1986

Alucitidae**Alucita**

- 2313 hexadactyla L., 1758

Carposinidae**Carposina**

- 2315 fernaldana Bsk., 1907

Bondia

- 2319 crescentella (Wlsm., 1882)

Epermeniidae**Epermenia**

- 2325 imperialella Bsk., 1906
 2328 alba punctella Bsk., 1908

Ochromolopis

- 2334 ramapoella (Kft., 1903)

Glyphipterigidae**Glyphipterix**

- 2337 circumscriptella Cham., 1881
 2341 haworthana (Steph., 1834)
 2346 impigritella Clem., 1863

Plutellidae**Homadaula**

- 2353 anisocentra Meyr., 1922

Plutella

- 2363 porrectella (L., 1758)
 2366 xylostella (L., 1758)

Ypsolopha

- 2371 canariella (Wlsm., 1881)
 2375 dentella (F., 1775)
 2376 dentiferella (Wlsm., 1881)
 2380 falciferella (Wlsm., 1881)

Yponomeutidae**Attteva**

- 2401 punctella (Cram., 1781)

Swammerdamia

- 2414 pyrella (Villers, 1789)

Yponomeuta

- 2416 atomocella Dyar, 1902
 2420 multipunctella Clem., 1860
 2420.1 cagnagella Hbn., 1806

Zelleria

- 2425 celastrusella Kft., 1903
 2427 haimbachi Bsk., 1915

Urodidae**Wockia**

- asperipunctella (Bruand, ?)

Argyresthiidae**Argyresthia**

- 2438 apicimaculella Cham., 1874
 2441 austerella Zell., 1873
 2457 goedartella (L., 1758)
 2467 oreasella Clem., 1860
 2474 pygmaeella (Hbn., 1810-13)
 2481 thuiella (Pack., 1871)
 2484 undulatella Cham., 1874

Acrolepiidae**Acrolepiopsis**

- 2490 incertella (Cham., 1872)

Heliodinidae**Heliodines**

- 2502 nyctaginella Gibson, 1914
 2502.1 cliffordi Harrison & Passoa, 1995

Schreckensteinia

- 2507 erythriella (Clem., 1860)
 2509 festaliella (Hbn., 1818-19)

Sesiidae**Pennisetia**

- 2513 marginata (Harr., 1839)

Paranthrene

- 2522 asilipennis (Bdv., 1829)
 2523 dollii (Neum., 1894)
 2524 tabaniformis (Rottemburg, 1775)
 2527 simulans (Grt., 1881)
 2527.1 pellucida (Greenfield & Karandinos, 1979)

Vitacea

- 2530 polistiformis (Harr., 1854)

Albuna

- 2532 fraxini (Hy. Edw., 1881)
 2533 pyramidalis (Wlk., 1856)

Melitta

- 2536 cucurbitae (Harr., 1828)

Sesia

- 2543 tibialis (Harr., 1839)
 2543.1 spartani (Eichlin & Taft, 1988)

Synathedon

- 2546 acerrubri Engelh., 1925
 2549 scitula (Harr., 1839)
 2550 pictipes (G. & R., 1868)
 2552 rileyana (Hy. Edw., 1881)
 2553 tipuliformis (Cl., 1759)
 2554 acerni (Clem., 1860)
 2555 fatifera Hodges, 1962
 2556 viburni Engelh., 1925
 2559 bolteri (Hy. Edw., 1883)
 2563 fulvipes (Harr., 1839)
 2565 pyri (Harr., 1830)
 2566 refulgens (Hy. Edw., 1881)
 2567 rubrofascia (Hy. Edw., 1881)
 2569 sigmoidea (Beutenmuller, 1897)
 2571 decipiens (Hy. Edw., 1881)
 2572 proxima (Hy. Edw., 1881)
 2583 exitiosa (Say, 1823)
 2585 pini (Kellcott, 1881)

Podosesia

- 2588 aureocincta Purrington & Nielsen, 1977
 2589 syringgae (Harr., 1839)

Carmenta

- 2592 anthracipennis (Bdv., 1875)
 2596 bassiformis (Wlk., 1856)
 2597 corni (Hy. Edw., 1881)
 2600 ithacae (Beutenmuller, 1897)
 2608 pyralidiformis (Wlk., 1856)

Alcathoe

- 2623 caudata (Harr., 1839)

Choreutidae**Prochoreutis**

- 2629 inflatella (Clem., 1863)

- Choreutis
 2650 pariana (Cl., 1759)
 2651 diana (Hbn., 1812-22)
- Cossidae**
- Acossus
 2675 centerensis (Lint., 1877)
- Prionoxystus
 2693 robiniae (Peck., 1818)
 2694 macmurtrei (Guer., 1829)
- Tortricidae
 (Olethreutinae)**
- Episimus
 2701 argutanus (Clem., 1860)
- Bactra
 2706 furfurana (Haw., 1811)
 2707 verutana Zell., 1875
 2708 maiorina Heinr., 1923
- Endopiza
 2712 viteana Clem., 1860
 2718 spiraeifolia (Heinr., 1923)
 2720 palliolana (McD., 1938)
 2722 aemulana (Heinr., 1926)
- Lobesia
 2728 carduana (Bsk., 1907)
- Endothenia
 2732 montanana (Kft., 1907)
 2737 affiliana McD., 1942
 2738 hebesana (Wlk., 1863)
 2743 nubilana (Clem., 1865)
- Taniva
 2745 albolineana (Kft., 1907)
- Hulda
 2747 impudens (Wlsm., 1884)
- Aterpia
 2748 approximana (Heinr., 1919)
- Eumarozia
 2749 malachitana (Zell., 1875)
- Zomaria
 2750 interruptolineana (Fern., 1882)
- Apotomis
 2753 capreana (Hbn., 1814-17)
 2755 funerea (Meyr., 1920)
 2765 deceptana (Kft., 1905)
 2767 infida (Heinr., 1926)
 2768 removana (Kft., 1907)
- Pseudosciaphila
 2769 duplex (Wlsm., 1905)
- Orthotaenia
 2770 undulana (D. & S., 1775)
- Phaecasiophora
 2771 confixana (Wlk., 1863)
 2772 niveiguttana Grt., 1873
- Olethreutes
 2775 nitidana (Clem., 1860)
 2776 furfurana (McD., 1922)
 2777 comandrana (Clarke, 1953)
 2778 olivaceana (Fern., 1882)
 2781 electrofuscus (Heinr., 1923)
 2784 footiana (Fern., 1882)
 2785 atrodentana (Fern., 1882)
 2786 punctana (Wlsm., 1903)
 2787 connectus (McD., 1935)
 2788 inornatana (Clem., 1860)
 2791 exoletus (Zell., 1875)
 2794 quadrifidus (Zell., 1875)
 2795 tiliana (Heinr., 1923)
 2799 clavana (Wlk., 1863)
 2799.1 mysteriana Miller, 1987
 2800 nigrana (Heinr., 1923)
 2801 viburnana (McD., 1935)
 2803 merrickana (Kft., 1907)
 2804 hamameliana (McD., 1944)
 2805 corylana (Fern., 1882)
 2806 ochrosuffusana (Heinr., 1923)
 2809 fagigemmeans (Cham., 1878)
 2811 melanomesa (Heinr., 1923)
 2812 valdana (McD., 1922)
 2814 versicolorana (Clem., 1860)
 2816 galevora (McD., 1956)
 2817 permundana (Clem., 1860)
 2818 submissana (McD., 1922)
 2819 nanana (McD., 1922)
 2820 malana (Fern., 1882)
 2821 appendicea (Zell., 1875)
 2822 concinnana (Clem., 1865)
 2823 fasciatana (Clem., 1860)
 2825 exaeresima (Heinr., 1926)
 2826 lacunana (Free., 1941)
 2828 griseoalbana (Wlsm., 1879)
 2829 osmundana (Fern., 1879)
 2830 auricapitana (Wlsm., 1879)
 2831 agilana (Clem., 1860)
 2832 albiciliana (Fern., 1882)
 2837 astrologana (Zell., 1875)
 2838 coruscana (Clem., 1860)
 2838.1 ferroleoneana (Wlk., 1863)
 2839 metallicana (Hbn., 1814-17)
 2845 carolana (McD., 1922)
 2847 glaciana (Mosch., 1860)
 2848 bipartitana (Clem., 1860)
 2849 trinitana (McD., 1931)
 2856 costumaculana (Fern., 1882)
- 2858 buckellana (McD., 1922)
 2859 cespitana (Hbn., 1814-17)
- Hedya
 2860 separatana (Kft., 1907)
 2861 ochroleucana (Frolich, 1828)
 2863 chionosema (Zell., 1875)
 2864 cyanana (Murt., 1880)
- Evora
 2866 hemidesma (Zell., 1875)
- Rhyacionia
 2867 buoliana (D. & S., 1775)
 2877 adana Heinr., 1923
 2879 busckana Heinr., 1923
 2879.1 granti Miller, 1985
 2884 sonia Miller, 1967
- Retinia
 2892 albicapitana (Bsk., 1914)
 2898 gemistruculana (Kft., 1905)
 2898.1 mafica Miller, 1978
 2899 pallipennis McD., 1938
 2902 houseri Miller, 1959
- Spilonota
 2906 ocellana (D. & S., 1775)
- Phaneta
 2908 radiatana (Wlsm., 1879)
 2910 essexana (Kft., 1907)
 2911 awemeana (Kft., 1907)
 2913 umbrastriana (Kft., 1907)
 2916 formosana (Clem., 1860)
 2925 autumnana (McD., 1942)
 2926 verna Miller, 1971
 2927 ochrocephala (Wlsm., 1895)
 2928 raracana (Kft., 1907)
 2929 ochroterminana (Kft., 1907)
 2933 marmontana (Kft., 1907)
 2936 tomonana (Kft., 1907)
 2937 parmatana (Clem., 1860)
 2938 modernana (McD., 1925)
 2940 covergana (McD., 1925)
 2951 ornatula (Heinr., 1924)
 2954 vernalana (McD., 1942)
 2956 tarandana (Mosch., 1874)
 2968 clavana (Fern., 1882)
 2970 argenticostana (Wlsm., 1879)
 2973 striatana (Clem., 1860)
 2982 kiscana (Kft., 1907)
 2994 montanana (Wlsm., 1884)
 2998 olivaceana (Riley, 1881)
 3004.1 ambodaidaleia Miller, 1983
- Eucosma
 3009 robinsonana (Grt., 1872)

- 3014 ridingsana (Rob., 1869)
3033 heathiana Kft., 1907
3035 morrisoni (Wlsm., 1884)
3037a agricolana argentialbana (Wlsm., 1879)
3042 vagana McD., 1925
3043 albiguttana (Zell., 1875)
3044 graciliana Kft., 1905
3066 gloriola Heinr., 1931
3074 tocullionana Heinr., 1920
3078 grotiana Kft., 1908
3079 palabundana Heinr., 1923
3091 matutina (Grt., 1873)
3098 giganteana (Riley, 1881)
3099 bipunctella (Wlk., 1863)
3100 bilineana Kft., 1907
3116 dorsisignatana (Clem., 1860)
3116.1 similia (Clem., 1860)
3120 derelicta (Heinr., 1929)
3124 fulminana (Wlsm., 1879)
3127 sombreana Kft., 1905
3132 pulveratana (Wlsm., 1884)
3133 consobrinana Heinr., 1923
3142 cataclystiana (Wlk., 1863)
- Pelochrista**
3151 scintillana (Clem., 1865)
3153 pallidipalpana (Kft., 1905)
3168 zomonana (Kft., 1907)
3169 womonana (Kft., 1907)
- Epiblema**
3171 boxcana (Kft., 1907)
3172 strenuana (Wlk., 1863)
3173 abruptana (Wlsm., 1879)
3174 numerosana (Zell., 1875)
3174.1 luctuosissima Blanchard, 1984
3184 tripartitana (Zell., 1875)
3186 scudderiana (Clem., 1860)
3189 obfusca (Dyar, 1888)
3190 desertana (Zell., 1875)
3192 carolinana (Wlsm., 1895)
3196 walsinghami (Kft., 1907)
3201 infelix Heinr., 1923
3202 otiosana (Clem., 1860)
3203 brightonana (Kft., 1907)
3204 tandana (Kft., 1907)
3205 resumptana (Wlk., 1863)
3206 dorsisuffusana (Kft., 1908)
- Notocelia**
3210 illotana (Wlsm., 1879)
3211 culminana (Wlsm., 1879)
- Suleima**
3212 helianthana (Riley, 1881)
3217 cinerodorsana Heinr., 1923
- Sonia**
3218.1 paraplesiana Blanchard, 1979
3219 canadana McD., 1925
- Gypsonoma**
3223 fasciolana (Clem., 1864)
3226 haimbachiana (Kft., 1907)
3227 substitutionis Heinr., 1923
3228 salicicolana (Clem., 1864)
3229 adjuncta Heinr., 1924
- Proteoteras**
3230 aesculana Riley, 1881
3232 willingana (Kft., 1904)
3233 crescentana Kft., 1907
3234 naracana Kft., 1907
3235 moffatiana Fern., 1905
- Zeiraphera**
3238 claypoleana (Riley, 1882) (Texas sp./Dang)
3240 canadensis Mutuura & Free., 1967
3241 improbana (Wlk., 1863)
3243 unfortunana Powell, 1983
- Pseudexentera**
3246 cressoniana (Clem., 1864)
3247 mali Free., 1942
3248 oregonana (Wlsm., 1879)
3251 spoliata (Clem., 1864)
3252 haracana (Kft., 1907)
3253 faracana (Kft., 1907)
3254 maracana (Kft., 1907)
3254.1 vaccinii Miller, 1986
3255 kalmiana McD., 1959
3257 costomaculana (Clem., 1860)
3258 virginiana (Clem., 1864)
- Gretchana**
3259 deludana (Clem., 1864)
3260 concubitana Heinr., 1923
3261 watchungana (Kft., 1907)
3263 bolliana (Slingerland, 1896)
3264 amatana Heinr., 1923
3265 delicatana Heinr., 1923
- Crocidosema**
3274 plebejana Zell., 1847
- Rhopobota**
3276 naevana (Hbn., 1814)
3277 dietziana (Kft., 1907)
3278 finitimana (Heinr., 1923)
- Epipotia**
3283 solandriana (L., 1758)
3286 medioviridana (Kft., 1908)
3290 madderana (Kft., 1907)
3291 celtisana (Riley, 1881)
3292 vertumnana (Zell., 1875)
- 3294 zandana (Kft., 1907)
3303 corylana McD., 1925
3304 solicitana (Wlk., 1863)
3306 nisella (Cl., 1759)
3307 criddleana (Kft., 1907)
3310 transmissana (Wlk., 1863)
3312 momonana (Kft., 1907)
3315.1 huroniensis Brown, 1986
3328 arctostaphylana (Kft., 1904)
3335 nonana (Kft., 1907)
3338 nanana (Tr., 1835)
3344 medioplagata (Wlsm., 1895)
3347 septemberana Kft., 1907
3351 lindana (Fern., 1892)
- Catastega**
3353 timidella Clem., 1861
3353.7 aceriella Clem., 1861
- Ancylis**
3354 nubeculana (Clem., 1860)
3355 subaequana (Zell., 1875)
3359 metamelana (Wlk., 1863)
3361 semiovana (Zell., 1875)
3367 burgessiana (Zell., 1875)
3369 fuscociliana (Clem., 1864)
3370 platanana (Clem., 1860)
3374 comptana (Frolich, 1828)
3375 divisana (Wlk., 1863)
3376 apicana (Wlk., 1866)
3377 muricana (Wlsm., 1879)
3378 carbonana Heinr., 1923
3379 diminutana (Haw., 1811)
3382 unguicella (L., 1758)
3384 mediofasciana (Clem., 1864)
3386 tineana (Hbn., 1796-99)
3387 albacostana Kft., 1905
- Eucosmomorpha**
3399.6 albersana (Hbn., 1811-13)
- Dichrorampha**
3404 simulana (Clem., 1860)
3406 bittana (Bsk., 1906)
3407 incanana (Clem., 1860)
3412 sedatana (Bsk., 1906)
3414 leopardana (Bsk., 1906)
- Talponia**
3417 plummeriana (Bsk., 1906)
- Pammene**
3419 felicitana Heinr., 1923
3420 perstructana (Wlk., 1863)
- Larisa**
3423 subsolana Miller, 1978
- Sereda**
3425 tautana (Clem., 1865)

- Grapholita
 3426 molesta (Bsk., 1916)
 3428 packardi Zell., 1875
 3429 prunivora (Walsh, 1868)
 3430 angeleseana (Kft., 1907)
 3434 fana (Kft., 1907)
 3438 eclipsana Zell., 1875
 3439 interstinctana (Clem., 1860)
 3443 tristrigana (Clem., 1865)
- Corticivora
 3446 clarki Clarke, 1951
- Cydia
 3452 inopiosa (Heinr., 1926)
 3455 strobilella (L., 1758)
 3457 garacana (Kft., 1907)
 3459 multilineana (Kft., 1908)
 3461 albimaculana (Fern., 1879)
 3463 populana (Bsk., 1916)
 3464 lacustrina (Miller, 1976)
 3465 flexiloqua (Heinr., 1926)
 3467 rusticella (Cl., 1759)
 3471 caryana (Fitch, 1856)
 3472 fletcherana (Kft., 1907)
 3479 gallaesaliciana (Riley, 1881)
 3486 toreuta (Grt., 1873)
 3492 pomonella (L., 1758)
 3494 latiferreana (Wlsm., 1879)
- Ecdytolopha
 3495 punctidiscana (Dyar, 1904)
 3497 insiticiiana Zell., 1875
- Pseudogalleria
 3500 inimicella (Zell., 1872)
- (Tortricinae)**
- Acleris
 3502 albicomana (Clem., 1865)
 3503 semipurpurana (Kft., 1905)
 3504 curvalana (Kft., 1907)
 3506 macdounnoughi Obr., 1963
 3508 caliginosana (Wlk., 1863)
 3509 ptychogrammos (Zell., 1875)
 3510 nivisellana (Wlsm., 1879)
 3517 subnivana (Wlk., 1863)
 3521 semiannula (Rob., 1869)
 3523 cornana (McD., 1933)
 3524 simpliciana (Wlsm., 1879)
 3525 forbesana (McD., 1934)
 3529 oxycoccana (Pack., 1869)
 3531 hastiana (L., 1758)
 3533 celiana (Rob., 1869)
 3534 arcticana (Gn., 1845)
 3539 chalybeana (Fern., 1882)
 3540 logiana placidana (Rob., 1869)
- 3542 flavivittana (Clem., 1864)
 3543 maculidorsana (Clem., 1864)
 3544 clarkei Obr., 1963
 3545 minuta (Rob., 1869)
 3548 variana (Fern., 1886)
 3556 nigrolinea (Rob., 1869)
 3558 busckana (McD., 1934)
 3561 hudsoniana (Wlk., 1863)
- Decodes
 3573 basiplaganus (Wlsm., 1879)
- Pandemis
 3593 lamprosana (Rob., 1869)
 3594 limitata (Rob., 1869)
 3595 canadana Kft., 1905
- Argyrotaenia
 3597 velutinana (Wlk., 1863)
 3602 pinatubana (Kft., 1905)
 3603 tabulana Free., 1944
 3607 occultana Free., 1942
 3621 quadrifasciana (Fern., 1882)
 3622 juglandana (Fern., 1879)
 3623 quercifoliana (Fitch, 1858)
 3624 alisellana (Rob., 1869)
 3625 mariana (Fern., 1882)
 3630 cockerellana (Kft., 1907)
- Choristoneura
 3632 fractivittana (Clem., 1865)
 3633 parallela (Rob., 1869)
 3634 zapulata (Rob., 1869)
 3635 rosaceana (Harr., 1841)
 3637 conflictana (Wlk., 1863)
 3638 fumiferana (Clem., 1865)
 3643 pinus Free., 1953
- Archips
 3648 argyrospila (Wlk., 1863)
 3649 mortuana Kft., 1907
 3650 rosana (L., 1758)
 3653 semiferana (Wlk., 1863)
 3654 negundana (Dyar, 1902)
 3655 fervidana (Clem., 1860)
 3656 georgiana (Wlk., 1863)
 3658 purpurana (Clem., 1865)
 3660 grisea (Rob., 1869)
 3661 cerasivorana (Fitch, 1856)
 3664 striana (Fern., 1905)
 3665 alberta (McD., 1923)
 3666 dissitana (Grt., 1879)
 3667 packardiana (Fern., 1886)
- Syndemis
 3672 afflictana (Wlk., 1863)
- Aphelia
 3675 alleniana (Fern., 1882)
- Clepsis
 3682 persicana (Fitch, 1856)
 3684 clemensiana (Fern., 1879)
 3686 melaleucana (Wlk., 1863)
 3688 peritana (Clem., 1860)
 3689 virescana (Clem., 1865)
- Adoxophyes
 3691 negundana (McD., 1923)
- Xenotemna
 3693 pallorana (Rob., 1869)
- Sparganothis
 3695 sulfureana (Clem., 1860)
 3697 lycopodiana (Kft., 1907)
 3699 tristriata Kft., 1907
 3706 xanthoides (Wlk., 1863)
 3710 violaceana (Rob., 1869)
 3711 unifasciana (Clem., 1864)
 3716 diluticostana (Wlsm., 1879)
 3720 reticulatana (Clem., 1860)
 3722 directana (Wlk., 1863)
 3725 pettitana (Rob., 1869)
 3727 niveana (Wlsm., 1879)
- Platynota
 3732 flavedana Clem., 1860
 3740 idaeusalis (Wlk., 1859)
 3743 exasperatana (Zell., 1875)
- Amorbia
 3748 humerosana Clem., 1860
- (Cochyliinae)**
- Aethes
 3758 rutilana (Hbn., 1818)
- Cochylis
 3769 bunteana (Rob., 1869)
 3830 hospes (Wlsm., 1884)
- Henricus
 3774 contrastanus (Kft., 1907)
- Phtheochroa
 3787 vitellinana (Zell., 1875)
 3799 terminana Bsk., 1907
 3801 birdana Bsk., 1907
 3805 modestana Bsk., 1907
 3807 angulatana Rob., 1869
 3808 augustana Clem., 1860
 3810 atomosana Bsk., 1907
 3815 biscana Kft., 1907
 3819 discana Kft., 1907
 3833 labeculana Rob., 1869
 3834 lavana Bsk., 1907
 3837 louisana Bsk., 1907
 3838 maiana Kft., 1907
 3841 obliquana Kft., 1907

- 3842 oenotherana Riley, 1881
 3847 romonana Kft., 1907
 3854 temerana Bsk., 1907
 3863 zoxcana Kft., 1907
- Zygaenidae**
 Harrisina
 4624 americana (Guer., 1829)
 4624a americana texana Stretch, 1872
 Pyromorpha
 4639 dimidiata H.-S., 1854
- Limacodidae**
 Tortricidia
 4652 testacea Pack., 1864
 4653 pallida (H.-S., 1854)
 4654 flexuosa (Grt., 1880)
 Packardia
 4659 geminata (Pack., 1864)
 4661 elegans (Pack., 1864)
 Lithacodes
 4663 fiskeanus (Dyar, 1900)
 4665 fasciola (H.-S., 1854)
 Apoda
 4667 y-inversa (Pack., 1864)
 4669 biguttata (Pack., 1864)
 Prolimacodes
 4671 badia (Hbn., 1822)
 Phobetron
 4677 pithecius (J. E. Smith, 1797)
 Isa
 4681 textula (H.-S., 1854)
 Adoneta
 4685 spinuloides (H.-S., 1854)
 Euclea
 4696 incisa (Harv., 1876)
 4697 delphinii (Bdv., 1832)
 Parasa
 4698 chloris (H.-S., 1854)
 Sibine
 4700 stimulea (Clem., 1860)
- Pyralidae**
(Scopariinae)
 Gesneria
 4703 centuriella (D. & S., 1775)
 Scoparia
 4716 biplagialis Wlk., 1866
 4717 penumbrales Dyar, 1906
 4718 cinereomedia Dyar, 1904
 4719 basalis Wlk., 1866
- Eudonia
 4737 lugubralis (Wlk., 1866)
 4738 strigalis (Dyar, 1906)
 4739 heterosalis (McD., 1961)
- (Nymphulinae)**
 Neocataclysta
 4743 magnificentalis (Hbn., 1796)
 Nymphula
 4747 ekthlipsis (Grt., 1876)
 Munroessa
 4748 icciusalis (Wlk., 1859)
 4749 faulalis (Wlk., 1859)
 4751a gyralis serralinealis (B. & Benj., 1924)
 Synclita
 4754 tinealis Mun., 1972
 4755 oblitalis (Wlk., 1859)
 Parapoyinx
 4759 maculalis (Clem., 1860)
 4760 obscuralis (Grt., 1881)
 4761 badiusalis (Wlk., 1859)
 4762 curviferalis (Wlk., 1866)
 4764 allionealis Wlk., 1859
 Petrophila
 4774 bifascialis (Rob., 1869)
 4777 fulcalis (Clem., 1860)
 4779 canadensis (Mun., 1972)
 Eoparargyractis
 4787 plievie (Dyar, 1917)
- (Odontiinae)**
 Metrea
 4789 ostreonalis Grt., 1882
 Eustixia
 4794 pupula Hbn., 1823
 Microtheoris
 4796 ophionalis (Wlk., 1859)
- (Glaphyriinae)**
 Stegea
 4864 eripalis (Grt., 1878)
 Glaphyria
 4869 glaphyralis (Gn., 1854)
 4870 sequistrialis Hbn., 1823
 Aethiophysa
 4877 lentiflualis (Zell., 1872)
 Xanthophysa
 4879 psychialis (Hulst, 1886)
 Lipocosma
 4881 sicalis (Wlk., 1859)
 Lipocosmodes
 4888 fuligosalis (Fern., 1888)
- Dicymolomia
 4889 julianalis (Wlk., 1859)
 Chalcoela
 4895 iphitalis (Wlk., 1859)
- (Evergestinae)**
 Evergestis
 4897 pallidata (Hufn., 1767)
 4901 unimacula (G. & R., 1867)
- (Pyraustinae)**
 Saucrobotys
 4935 fumoferalis (Hulst, 1886)
 4936 futilalis (Led., 1863)
 Nascia
 4937 acutella (Wlk., 1866)
 Crocidophora
 4944 serratissimalis Zell., 1872
 4945 tuberculalis Led., 1863
 Ostrinia
 4946 penitalis (Grt., 1876)
 4948 marginalis (Wlk., 1866)
 4949 nubilalis (Hbn., 1796)
 Fumibotys
 4950 fumalis (Gn., 1854)
 Perispasta
 4951 caeculalis Zell., 1875
 Eurrhyncha
 4952 hortulata (L., 1758)
 Phlyctaenia
 4953a coronata tertialis (Gn., 1854)
 4954 quebecensis Mun., 1954
 Nealgedonia
 4956 extricalis (Gn., 1854)
 Mutuuraia
 4957 mysippusalis (Wlk., 1859)
 Anania
 4958a funebris glomeralis (Wlk., 1859)
 Hahncappia
 4962 marculenta (G. & R., 1867)
 4965 neoblitalis (Capps, 1967)
 4968 pergilvalis (Hulst, 1886)
 Achyra
 4975 rantalis (Gn., 1854)
 Helvibotys
 4980 helvialis (Wlk., 1859)
 Sitochroa
 4987 chortalis (Grt., 1873)
 Sericoplaga
 4991 externalis Warr. 1892

- Uresiphita
4992 reversalis (Gn., 1854)
- Loxostege
5004 sticticalis (L., 1761)
5010a anartalis lulualis (Hulst, 1886)
5016 commixtalis (Wlk., 1866)
5017 cereralis (Zell., 1872)
- Pyrausta
5018 demantrialis (Druce, 1895)
5029 volupialis (Grt., 1877)
5032 nicalis (Grt., 1878)
5034 signatalis (Wlk., 1866)
5036 inveterascalis B.&McD., 1918
5040 bicoloralis (Gn., 1854)
5056 generosa (G.&R., 1867)
5058 orphisalis Wlk., 1859
5060 subsequalis subsequalis (Gn., 1854)
5060a subsequalis borealis Pack., 1867
5068a unifascialis subolivalis (Pack., 1873)
5069 tyralis (Gn., 1854)
5070 laticlavia (G.&R., 1867)
5071 acrionalis (Wlk., 1859)
5073 niveiciliaris (Grt., 1875)
5074b fodinalis septentrioncola Mun., 1976
5075 socialis (Grt., 1877)
- Udea
5079 rubigalis (Gn., 1854)
5086 inquinatalis (Zell., 1846)
5099 itysalis (Wlk., 1859)
- Lineodes
5107 integra (Zell., 1873)
- Loxostegopsis
5117 merrickalis (B.&McD., 1918)
- Mecyna
5135 submedialis (Grt., 1876)
- Diacme
5143 adipaloides (G.&R., 1867)
- Nomophila
5156 nearctica Mun., 1973
- Desmia
5159 funeralis (Hbn., 1796)
5160 maculalis Westwood, 1831
- Hymenia
5169 perspectalis (Hbn., 1796)
- Spoladea
5170 recurvalis (F., 1794)
- Diasemiopsis
5171 leodocusalis (Wlk., 1859)
- Diathrausta
5174 reconditalis (Wlk., 1859)
- Anageshna
5176 primordialis (Dyar, 1907)
- Apogeshna
5177 stenialis (Gn., 1854)
- Blepharomastix
5182 ranalis (Gn., 1854)
- Diaphania
5202 nitidalis (Stoll, 1781)
5204 hyalinata (L., 1767)
- Palpita
5218 quadristigmalis (Gn., 1854)
5222 arsaltealis (Wlk., 1859)
5226 magniferalis (Wlk., 1861)
- Polygrammodes
5228 flavidalis (Gn., 1854)
- Pantographa
5241 limata (G.&R., 1867)
- Pleuroptya
5242 penumbralis (Grt., 1877)
- Lygropia
5248 tripunctata (F., 1794)
5250 rivulalis Hamp., 1898
- Diastictis
5255 ventralis (G.&R., 1867)
- Framinghamia
5262 helvalis (Wlk., 1859)
- Herpetogramma
5272 bipunctalis (F., 1794)
5275 pertextalis (Led., 1863)
5276 abdominalis (Zell., 1872)
5277 thestealis (Wlk., 1859)
5279 theseusalis (Wlk., 1859)
5280 aeglealis (Wlk., 1859)
- Pilocrocis
5281 ramentalis Led., 1863
- Marasmia
5289 cochrusalis (Wlk., 1859)
- (Schoenobiinae)**
- Acentria
5299 ephemerella (D.&S., ?)
- Scirpophaga
5307 perstrialis (Hbn., 1825)
5308 repugnatalis (Wlk., 1863)
- Donacula
5313 sordidella (Zinck., 1821)
5316 melinella (Clem., 1860)
5319 longirostrella (Clem., 1860)
- (Ancylolomiinae)**
- Prionapteryx
5333 nebulifera Steph., 1834
5334 achatina Zell., 1863
- (Crambinae)**
- Crambus
5339a pascuellus floridus Zell., 1872
5340 hamellus (Thunb., 1794)
5341a alienellus labradoriensis Christoph, 1858
5342 bidens Zell., 1872
5343a perlellus innotatellus Wlk., 1863
5344 unistriatellus Pack., 1867
5345 whitmerellus Klots, 1942
5347 awemellus McD., 1921
5348 lyonsellus Haim., 1915
5349 youngellus Kft., 1908
5354 ainsliellus Klots, 1942
5355 praefectellus (Zinck., 1821)
5357 leachellus (Zinck., 1818)
5361 albellus Clem., 1860
5362 agitatellus Clem., 1860
5363 saltuellus Zell., 1863
5365 girardellus Clem., 1860
5366 watsonellus Klots, 1942
5372 satrapellus (Zinck., 1821)
5378 laqueatellus Clem., 1860
- Neodactria
5379 luteolellus Clem., 1860
5380 zeellus Fern., 1885
5381 caliginosellus Clem., 1860
5382 murellus Dyar, 1904
- Chrysoteuchia
5391 topiaria (Zell., 1866)
- Arequipa
5392 turbatella Wlk., 1863
- Raphiptera
5393 argillaceella (Pack., 1867)
- Platytes
5394 vobisne Dyar, 1920
- Agriphila
5399 ruricolella (Zell., 1863)
5403 vulgigagella (Clem., 1860)
- Catoptria
5408 latiradiella (Wlk., 1863)
- Pediasia
5413 trisecta (Wlk., 1856)
5414 laciniella (Grt., 1880)
5416 abnaki (Klots, 1942)
- Microcrambus
5419 biguttellus (Fbs., 1920)
5420 elegans (Clem., 1860)

- 5422 minor (Fbs., 1920)
- Loxocrampus
5429 awemensis McD., 1929
- Fissicrambus
5435 mutabilis (Clem., 1860)
- Thaumatopsis
5439 pexella (Zell., 1863)
5447 pectinifer (Zell., 1877)
5449 solutella (Zell., 1863)
- Parapediasia
5450 decorella (Zinck., 1821)
5451 teterrella (Zinck., 1821)
- Urola
5464 nivalis (Drury, 1773)
- Vaxi
5465 auratella (Clem., 1860)
5466 critica (Fbs., 1820)
- Chilo
5470 plejadellus Zinck., 1821
- Thopeutis
5473 forbesellus (Fern., 1896)
- Acigona
5474 comptulatalis (Hulst, 1886)
- Haimbachia
5482 squamulella (Zell., 1881)
5488 albescens Capps, 1965
- Eoreuma
5492 densella (Zell., 1881)
- Xubida
5500 panalope (Dyar, 1917)
- (Pyralinae)**
- Aglossa
5510 farinalis L., 1758
5511 costiferalis Wlk., 1866
5512 disciferalis Dyar, 1908
5517 caprealis (Hbn., 1800-09)
5518 cuprina Zell., 1872
- Hypsopygia
5524 costalis (F., 1775)
- Pseudasopia
5526 intermedialis (Wlk., 1862)
- Dolichomia
5529 thymetusalis (Wlk., 1859)
5533 olinalis (Gn., 1854)
- (Chrysauginae)**
- Galasa
5552 nigrinodis (Zell., 1873)
- Tosale
5556 oviplagalis (Wlk., 1866)
- Arta
5566 statalis Grt., 1875
- Condylolomia
5571 participalis Grt., 1873
- (Epipaschiinae)**
- Macalla
5577 superatalis Clem., 1860
5579 zelleri (Grt., 1876)
- Oneida
5588 lunulalis (Hulst, 1887)
- Pococera
5595 robustella (Zell., 1848)
5596 scortealis (Led., 1863)
5597 melanogrammos (Zell., 1872)
5603 martimalis (McD., 1939)
5604 militella (Zell., 1848)
5605 aplastella (Hulst, 1888)
5606 asperatella (Clem., 1860)
5607 vacciniivora (Mun., 1963)
5608 expandens (Wlk., 1863)
5617 humerella (Rag., 1888)
5619 baptisiella (Fern., 1887)
- (Galleriinae)**
- Galleria
5622 mellonella (L., 1758)
- Achroia
5623 grisella (F., 1794)
- Omphalocera
5625 cariosa Led., 1863
- Aphomia
5630 terrenella Zell., 1848
- Macrotheca
5639 unipuncta Dyar, 1913
- (Phycitinae)**
- Acrobasis
5651 indigenella (Zell., 1848)
5653 vaccinii Riley, 1884
5655 tricolorella Grt., 1878
5659 palliolella Rag., 1887
5660 caryalbella Ely, 1913
5661 juglandis (LeBaron, 1872)
5662 sylvielli Ely, 1970
5663 kearfottella Dyar, 1905
5664 caryae Grt., 1881
5665 carpinivorella Neunzig, 1970
5669 stigmella Dyar, 1908
5670 aureorella Ely, 1910
5673 angusella Grt., 1880
5674 demotella Grt., 1881
5675 latifasciella Dyar, 1908
5676 irrubriella Ely, 1908
- 5680 ostryella Ely, 1913
5685 cunulae Dyar & Hein., 1929
5686 caryivorella Rag., 1887
5688 betulella Hulst, 1890
5690 rubrifasciella Pack., 1873
5691 comptoniella Hulst, 1890
- Myelopsis
5718 subtetricella (Rag., 1889)
5719 minutularia (Hulst, 1887)
5720 alatella (Hulst, 1887)
- Apomyelois
5721 bistratiella (Hulst, 1887)
- Etiella
5744 zinckenella (Tr., 1832)
- Glyptocera
5745 consobrinella (Zell., 1872)
- Ambesa
5759 laetella Grt., 1880
- Immyrila
5766 nigrovittella Dyar, 1906
- Oreana
5767 unicolorella (Hulst, 1887)
- Salebriaria
5771 turpidella (Rag., 1888)
5771.1 nov. sp.
5772 nubiferella (Rag., 1887)
5773 engeli (Dyar, 1906)
5774 annulosella (Rag., 1903)
5774.1 bella Neunzig, 1970
5775 tenebrosella (Hulst, 1887)
5775.1 fasciata Neunzig, 1970
5775.2 rufimaculella Neunzig, 1970
5774.1 bella Neunzig, 1970
5777.1 atratella Blanch. & Knud., ?
- Ortholepis
5781 myricella McD., 1958
5781.1 nov. sp.
5783 pasadamia (Dyar, 1917)
- Meroptera
5786 cviatella Dyar, 1905
5787 pravella (Grt., 1878)
5788 abditiva Hein., 1956
- Nephopterix
5789 subfuscella (Rag., 1887)
5790 delassalis Hulst, 1886
5794 vetustella (Dyar, 1904)
5796 subcaesiella (Clem., 1860)
5797 virgatella (Clem., 1860)
5798 carneella Hulst, 1887
5799 basilaris Zell., 1872
5803 celtidella (Hulst, 1890)

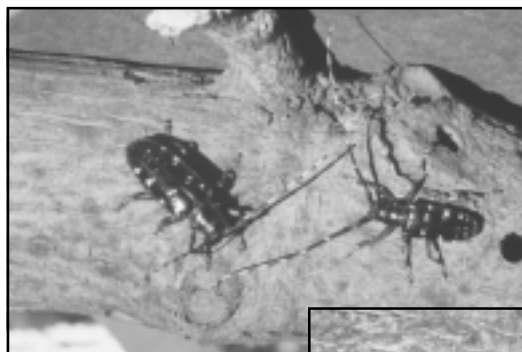
- 5806 crassifasciella Rag., 1887
Tlascalala
5808 reductella (Wlk., 1863)
Tulsa
5809 finitella (Wlk., 1863)
- Telethusia
5812 ovalis Pack., 1873
- Actrix
5818 nyssaecolella (Dyar, 1904)
- Pyla
5824 aequivoca Hein., 1956
5824.1 arenaeola Balogh & Wilterding, 1998
5826 insinuatrix Hein., 1956
5827 aenigmatica Hein., 1956
5829 fusca (Haw., 1828)
- Dioryctria
5841 abietivorella (Grt., 1878)
5843 reniculelloides Mutuura & Mun., 1973
5847 disclosa Hein., 1953
5852 zimmermani (Grt., 1877)
5852.1 resinosella Mutuura, ?
5858 banksiella Mutuura, Mun. & Ross, 1969
- Sarata
5883 kappa Heinr., 1956
- Elasmopalpus
5896 lignosellus (Zell., 1848)
- Heterographis
5916 morrisonella Rag., 1887
- Hulstia
5918 undulatella (Clem., 1860)
- Canarsia
5926 ulmiarrosorella (Clem., 1860)
- Diviana
5929 eudoreella Rag., 1888
- Psorosina
5931 hammondi (Riley, 1872)
- Homoeosoma
5935 electellum (Hulst, 1887)
5936 stypticellum Grt., 1878
5944 deceptorium Hein., 1956
- Phycitodes
5946b albatella relinqueella (Rag., 1904)
- Baphala
5965.1 pallida (J. H. Comstock, 1879)
- Zophodia
5968 convolutella (Hbn., 1796)
- Euzophera
5995 semifuneralis (Wlk., 1863)
5997 ostricolorella Hulst, 1890
- Eulogia
5999 ochrifrontella (Zell., 1876)
- Ephesiodes
6001 infimella Rag., 1887
- Moodna
6005 ostrinella (Clem., 1860)
6005.1 pallidostrinella Neunzig, 1970
- Vitula
6007 edmandsii (Pack., 1864)
6011 broweri Hein., 1956
- Caudellia
6012 apyrella Dyar, 1904
- Plodia
6019 interpunctella (Hbn., 1810-13)
- Ephestia
6020 kuehniella (Zell., 1879)
6020.1 columbiella Neunzig, 1970
6021 elutella (Hbn., 1796)
- Cadra
6022 cautella (Wlk., 1863)
- Bandera
6024 binotella (Zell., 1872)
- Varneria
6029 postremella Dyar, 1904
- Eurythmia
6032 angulella Ely, 1910
- Erelieva
6035 parvulella (Ely, 1910)
- Anerastia
6038 lotella (Hbn., 1810-13)
- Coenochroa
6040 illibella (Hulst, 1887)
6041 bipunctella (B.&McD., 1913)
- (Peoriinae)**
- Peoria
6048 gemmatella (Hulst, 1887)
6049 roseotinctella (Rag., 1887)
6053 approximella (Wlk., 1887)
nov. sp. ca. approximella
- Atascosa
6067 glareosella (Zell., 1872)
- Thyrididae**
- Thyris
6076 maculata Harr., 1839
6077 sepulchralis Guer., 1832
- Pterophoridae**
- Sphenarches
6090 ontario (McD., 1927)
- Geina
6091 periscelidactyla (Fitch, 1854)
6092 tenuidactyla (Fitch, 1854)
6093 buscki (McD., 1933)
- Capperia
6095 evansi (McD., 1923)
- Oxyptilus
6097 delawaricus Zell., 1873
- Trichoptilus
6102 lobidactylus (Fitch, 1854)
- Cnaemidophorus
6105 rhododactylus (D. & S., 1775)
- Platyptilia
6106 tesseradactyla (L., 1761)
6107 pallidactyla (Haw., 1811)
6109 carduidactyla (Riley, 1869)
- Amblyptilia
6118 pica (Wlsm., 1880)
- Stenoptilodes
6127 auriga (B.&L., 1921)
6128 edwardsii (Fish, 1881)
- Stenoptilia
6148 exclamationis (Wlsm., 1880)
- Adaina
6157 montana (Wlsm., 1880)
6160 ambrosiae (Murt., 1880)
- Oidaematophorus
6163 cretidactylus (Fitch, 1854)
6166 mathewianus (Zell., 1874)
6168 eupatorii (Fern., 1891)
6172 cineraceus Fish, 1881
6186 inquinatus Zell., 1873
6203 homodactylus (Wlk., 1864)
6204 elliottii (Fern., 1893)
6205 stramineus (Wlsm., 1880)
6207 paleaceus (Zell., 1873)
6212 kellicottii (Fish, 1881)
6213 lacteodactylus (Cham., 1873)
- Emmelina
6234 monodactyla (L., 1758)

Chicago Joins New York in Battle with the Asian Longhorned Beetle

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The Asian longhorned beetle, *Anoplophora glabripennis* (Motschulsky), was positively identified on 13 July 1998 attacking trees in an area of northern Chicago known as Ravenswood. Previously, the only known North American occurrence of this Asian cerambycid beetle was in the Amityville area and the Brooklyn area of Long Island, New York, where it was discovered in August 1996 (Haack et al. 1996, Cavey et al. 1998). In New York, this woodborer has attacked species of maple (*Acer*), horsechestnut (*Aesculus hippocastanum*), birch (*Betula*), poplar (*Populus*), willow (*Salix*), and elm (*Ulmus*) (Haack et al. 1997). Because of the potential for longterm ecological and economic damage an aggressive eradication program that involves locating, removing, chipping and burning of all infested trees was implemented in New York in February 1997. To date, over 2000 infested trees have been cut and over \$ 4.2 million has been spent or obligated on tree removal and replanting programs (Haack 1998). Now Chicago has joined New York in the battle against the Asian longhorned beetle.

On 10 July 1998 a Chicago-area parks employee discovered a striking beetle emerging from some locally-cut firewood. He initiated an investigation into its identity and three days later the beetle was confirmed as the Asian longhorned beetle. Evidence suggests that, like in New York, the beetle arrived from China in wooden packing material such as pallets and crating and then became established in nearby host trees. The extent of attack and damage from the Asian longhorned beetle in the Ravenswood area of Chicago indicates that the beetle had been present prior to its detection for approximately 5 to 7 years. The city of Chicago reacted quickly to the discovery. City employees met with officials of the USDA Animal and Plant Health Inspection Service (APHIS), the Illinois Department of Agriculture and the USDA Forest Service on 15 July to devise an action plan. Chicago Mayor Daley announced the next day that Chicago



would follow New York's lead and that infested trees would be cut, chipped, burned and replaced by new trees at the city's expense.

The city of Chicago benefited greatly from New York's experience in implementing its eradication program. With an excellent leadership team and organization, the city of Chicago obtained public cooperation and support for the eradication program from the outset. The media provided excellent, factual and accurate information through extensive television, newspaper, and radio coverage. As a result of heightened public awareness about the Asian longhorned beetle, two additional infestations in the Chicago area were discovered and reported by private citizens by August 1998. One infestation was found in a non-incorporated area near Addison, approximately 5 miles southeast of O'Hare International Airport. The other infestation was found in the suburb of Summit, approximately 15 miles Southwest of downtown Chicago. Because the three areas are widely separated and warehouses importing products from China are located in each of the infested areas, the three infestations are thought to be independent of each other and not the result of spread from the initial infestation in Ravenswood.

Surveys were initiated as quickly as possible to determine the outer limits of the infested areas and to set boundaries for the quarantine zones. On 28 July, the Illinois Asian Longhorned Beetle Quarantine was implemented. Under the authority of the quarantine, the movement of all potential host material out of the quarantine areas was prohibited and all tree trimming businesses were trained and placed under Compliance Agreements by the State of Illinois. Currently, the quarantine covers 19 square miles in the Ravenswood area, as

well as 1 square mile each in Addison and in Summit. Extensive surveys were conducted out to 1 ¼ miles past the outer boundary of known infested trees at all three locations. Survey crews were composed of APHIS inspectors, federal, state and city employees as well as APHIS trained volunteers. Assistance in conducting the survey was requested at a National Plant Board Meeting and 25 states volunteered 75 people. In addition, volunteers participated from the Nature Conservancy Volunteer Stewardship Network (with over 5000 members in the city of Chicago), the Treekeepers, and the Illinois Arborists Association (composed of 700 organizations). Employees from the USDA Forest Service were also temporarily assigned to survey crews for 2 to 5 week periods. The training obtained by employees and volunteers from other states will be applied for detection and surveys in their home states.

As a result of the surveys, 465 infested trees have so far been located and marked for removal in Chicago. Of these, 425 trees (275 city trees between the road and sidewalk and 150 private trees) are in the Ravenswood area, 35 in Addison, and 5 in Summit. As in New York, mostly maples were found to be infested in Chicago; however, in Chicago many elms were also attacked. In addition, three new hosts were recorded for the first time in the US including apple (*Malus*), white ash (*Fraxinus americana*) and green ash (*Fraxinus pennsylvanica*). With the inclusion of green ash as a suitable host, the percent of Chicago's public

Table 1. Growth of US imports and insect interceptions on wood from China. Source: Haack et al. (1997).

Year	Percent of total US imports that came from China	Percent of total insect interceptions on solid wood packing materials that came from China
1985	1.1 %	1.2%
1986	1.3	1.2
1987	1.6	0.7
1988	1.9	1.5
1989	2.5	0.6
1990	3.1	1.2
1991	3.9	0.6
1992	4.8	4.4
1993	5.4	7.3
1994	5.8	8.3
1995	6.1	11.2
1996	6.4	21.2

trees that could potentially be affected by Asian longhorned beetle increased from 25% to 75%. All infested trees are scheduled to be cut, chipped and burned this winter while the beetle is overwintering. In addition, where space allows, all roots will be removed to a depth of 12 inches within a 3 foot radius of each infested tree. This is being done because larvae can occur from the upper branches down to the base of the trunk and along exposed roots (Haack et al. 1997). The tree removal program is currently scheduled to begin in late January and it is expected to take 1-2 weeks. However, tree removal may be postponed if heavy snowfall occurs. City trees will be removed by the City of Chicago Bureau of Forestry. Removal of private trees will begin later and will be completed by City-approved private contractors. Homeowners will **not** be billed for removal of their trees.

Plans are underway for a replanting and beautification project in Chicago. The US Forest Service has donated \$480,000 towards replanting in Chicago and fund-raising has been initiated to supplement and match this contribution. Commonwealth Edison, the power company servicing northern Illinois has donated \$100,000, WXRT expects to donate \$100,000 from the sale of one of their CDs, and the Counsel General of The Netherlands donated 10,000 tulip bulbs which were planted in the fall of 1998 to aid in the beautification program. Homeowners in the infested areas have been very supportive of the eradication and replanting program. Many participated in public meetings to learn more about tree

species and planting stock selection for replanting, choosing quality nurseries, and building temporary homes for displaced birds and squirrels.

New infestations by the Asian longhorned beetle and other exotic insects are likely to be detected in the future given the large quantity of imports that arrive in solid wood packing material from China (Haack et al. 1997, Cavey 1998, Tables 1-3). It is likely that several other ALB infestations already exist in the US, but so far have not been detected. Many insect pests are associated with unprocessed wood packing materials (Haack and Cavey 1997). As a result of this latest Asian longhorned beetle infestation in Chicago, a new interim rule for shipments from China was implemented on 17 December 1998 by USDA APHIS (1998). The new rule requires that all imports from China with solid wood packing materials must be certified that the wood has been heat treated, fumigated or treated with preservatives prior to export. Compliance with the new rule should dramatically reduce the risk of new infestations by exotic wood-boring insects from China. Plans are for NAPPO (North American Plant Protection Organization) to expand this ruling to imports from the entire world within the next few years.

Although some research has been done on the Asian longhorned beetle, primarily in China, there are many data gaps that must be filled in order for an effective management program to be implemented in North America. A greater understanding of the beetle's biology in North America is required. It is also critical to develop improved means for detecting the beetle's presence, controlling it, and preventing it from becoming established. A few federal and university entomologists are already conducting research on the Asian longhorned beetle while many others are planning research projects in 1999. These studies run the gamut from pheromones and systemic insecticides to biocontrol agents and flight capacity to genetics and cold-hardiness.

Data are also being gathered throughout the eradication program in Chicago. A study is being conducted to evaluate the effectiveness of the ground survey technique within sample plots in the Ravenswood infested area. Within each plot, all city trees have been re-surveyed using bucket trucks to compare the results of close-up inspections to the visual survey from the ground. In addition, within each sample plot several trees with no evidence of attack from the ground or bucket-truck surveys will

be cut during the tree removal program and examined in detail for attack. The dynamics of the infestation are being studied by mapping all city and yard trees within each plot using GPS technology. The position of all infested and uninfested hardwood trees was recorded along with the species, diameter, and condition. The database will be updated annually and used to follow the infestation as new trees are detected. During the tree removal process, a percentage will be split and inspected to determine the location of all stages of Asian longhorned beetle within different species of host trees. This information will be used to determine within-tree distribution, host preferences, and beetle development within different host trees. In addition, some infested material from Chicago will be taken to secure quarantine facilities so that beetles can be reared and studied. Still other studies are occurring now in China, where there are abundant numbers of infested poplars, willows, and elms. Various systemic insecticides are now being tested. These insecticides are aimed at killing larvae while they feed in the outer sapwood as well as the adults while they conduct maturation feeding on twigs and foliage upon emergence.

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Table 2. Number of interceptions of Cerambycidae (longhorned beetles) found with wood packing material in imports from China during the period 1985–August 1998. Data presented at the genus level. Source (Cavey 1998).

Genus	No.	Genus	No.
<i>Anoplophora</i>	23	<i>Monochamus</i>	153
<i>Apriona</i>	1	<i>Phymatodes</i>	1
<i>Asemum</i>	2	<i>Plagionotus</i>	1
<i>Batocera</i>	2	<i>Pterolophia</i>	1
<i>Callidiellum</i>	1	<i>Purpuricenus</i>	1
<i>Callidium</i>	1	<i>Stromatium</i>	2
<i>Ceresium</i>	94	<i>Trichoferus</i>	1
<i>Chlorophorus</i>	1	<i>Xylotrechus</i>	18
<i>Dere</i>	1	Cerambycinae, sp. of	17
<i>Elaphidion</i>	1	Lamiinae, sp. of	9
<i>Glenea</i>	1	Cerambycidae, sp. of	16
<i>Hesperophanes</i>	6	Sum	354

Table 3. Number of interceptions of insects other than Cerambycidae found with wood packing material in imports from China during the period 1985 – August 1998. Source (Cavey 1998).

Pest	No.	Pest	No.	Pest	No.
COLEOPTERA, sp. of	2	Scolytidae , sp. of	55	<i>Pityogenes chalcographus</i> L.	1
Buprestidae , sp. of	2	<i>Cryphalus</i> sp.	40	<i>Scolytus</i> sp.	12
<i>Buprestis</i> sp.	1	<i>Cyrtogenius</i> sp.	2	<i>Xyleborinus</i> sp.	1
<i>Chalcophora</i> sp.	1	<i>Dryocoetes</i> sp.	40	<i>Xyleborus</i> sp.	7
<i>Chrysobothris</i> sp.	2	<i>Euwallacea validus</i>	1	<i>Xyleborus validus</i> Eichoff	2
Curculionidae , sp. of	7	<i>Hypocryphalus</i> sp.	3	Platypodidae , sp. of	1
Curculionoidea, sp. of	3	<i>Hypothenemus</i> sp.	5	Platypus sp. Platypodidae	1
Cryptorhynchinae, sp.	2	<i>Ips</i> sp.	3	HYMENOPTERA	
Cryptorhynchus sp.	2	<i>Ips acuminatus</i> Gyllenhal	1	Siricidae , sp. of	3
<i>Hylobius</i> sp.	1	<i>Ips cembrae</i> Heer	2	ISOPTERA	
<i>Niphades</i> sp.	4	<i>Ips erosus</i> Wollaston	25	<i>Coptotermes</i> sp.	1
<i>Pissodes</i> sp.	3	<i>Ips typographus</i> L.	2	<i>Cryptotermes</i> sp.	1
<i>Shirahoshizo</i> sp.	14	<i>Orthotomicus</i> sp.	13	<i>Reticulitermes</i> sp.	1
<i>Sipalinus</i> sp.	2	<i>Phloeosinus</i> sp.	2	Sum	245
		<i>Polygraphus</i> sp.	3		
		<i>Polygraphus poligraphus</i> L.	1		

Asian Longhorned Beetle on the Web

There are several excellent internet sites with information on the Asian longhorned beetle. The webpages contain downloadable photographs of all life stages of the insect and its damage, information on the infestations in New York and Chicago and eradication programs, news releases and newspaper articles, information on the beetle's biology and damage, maps of the infested areas, quarantine regulations, pest risk assessments and import regulations, links to other websites and information on who to contact with questions or concerns.

<http://willow.ncfes.umn.edu/asianbeetle/beetle.htm>

<http://www.aphis.usda.gov/oa/alb/alb.html>

<http://www.aphis.usda.gov/ppq/longhorn.html>

<http://www.agr.state.il.us/asianbeetleinfo.html>

<http://ceris.purdue.edu/napis/pests/alb/>

http://www.aces.uiuc.edu/longhorned_beetle/

Pine Bark Beetles on the Heels of Hurricane Georges

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The Dominican Republic occupies the eastern two-thirds of the island of Hispaniola (see map). It has a mountainous terrain and a maritime tropical climate. On 22 September 1998, Hurricane Georges passed over the Dominican Republic, causing significant damage to buildings, bridges, power lines, crops, and forests. The hurricane cut a 33-mile-wide swath across the country, entering from the east and exiting to the north, but its strong winds and heavy rains affected a much wider area.

In December 1998, I was asked to visit the Dominican Republic to evaluate the potential for bark beetle (Scolytidae) outbreaks in the pine forests that had been damaged by Hurricane Georges. The invitation was made on behalf of the Dominican Mission of the US Agency for International Development and the Dominican Forest Service ("Dirección General Forestal" or "Foresta"). I gladly accepted the invitation and traveled to the Dominican Republic during 9-15 December 1998.

This was my second visit to the Dominican Republic. I had traveled there once before, in 1987, to assess an outbreak of the pine bark beetle *Ips calligraphus* (Germar) that occurred following a severe drought (Haack et al. 1989). This time, however, a hurricane had set the stage for a bark beetle outbreak.

During my visit, I traveled primarily within the southern and central pine growing regions of the Dominican Republic. From the capital, Santo Domingo, on the southern coast, I traveled as far north as Jarabacoa, and as far west as San José de Ocoa (top photo, p. 18). Two species of pine trees were encountered: Caribbean pine, *Pinus caribaea* Morelet, at lower elevations; and West Indian pine, *Pinus occidentalis* Sw., at higher elevations.

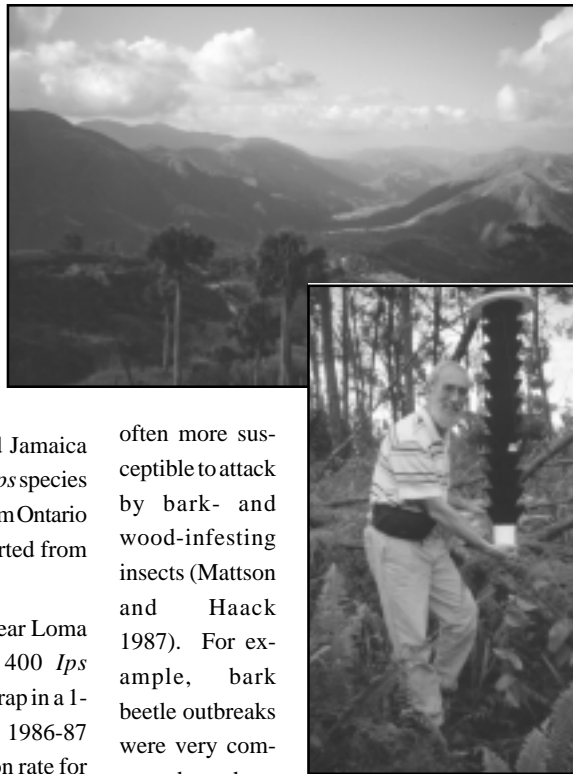
I took six multiple-funnel traps to the Dominican Republic to help assess the bark beetle situation. I placed the traps at four different sites and baited them with pheromone lures that consisted of a 50%(+):50%(-) blend of ipsdienol. I used this formulation of ipsdienol because it was the most

effective blend in attracting *Ips* bark beetles during my 1987 visit to the Dominican Republic (Haack et al. 1989).

Again, as in 1987, *Ips calligraphus* was the principal pine bark beetle collected in 1998. In fact, *Ips calligraphus* was the only species of *Ips* that I collected in both 1987 and 1998. I had anticipated collecting *Ips grandicollis* (Eichhoff) because it has been reported from the Dominican Republic and also nearby in Cuba and Jamaica (Wood and Bright 1992). Both of these *Ips* species have large geographic ranges that span from Ontario to Nicaragua, and both have been reported from Michigan (Wood and Bright 1992).

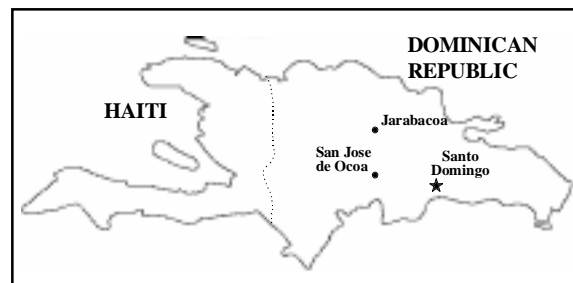
At one of the 1998 trapping sites near Loma Novillero (photos, p. 19), nearly 400 *Ips calligraphus* were collected in a single trap in a 1-day period. In comparison, during the 1986-87 Dominican outbreak, the peak collection rate for a single trap (N=18 traps) was 205 *Ips calligraphus* per day; collection rates were calculated at monthly intervals over a 1-year period (Richter 1987). The Loma Novillero site consisted of 1400 ha (1 ha = 2.47 acres) of Caribbean pine plantations. Foresta personnel inventoried these stands following Hurricane Georges and estimated that 50-80% of the trees were blown over or snapped off (see photos). *Ips* were breeding in the fallen and broken pines, but there was little evidence at the time of my visit that they had moved into the standing pines that had survived the hurricane. Temperatures are warm enough in the Dominican Republic to allow *Ips calligraphus* to complete one generation every 4 to 5 weeks (Haack 1985, Haack et al. 1989). Thus, by the time I visited the Dominican Republic in December, *Ips calligraphus* had likely completed two generations since Hurricane Georges had arrived earlier in September.

Future prospects. The *Ips calligraphus* populations are very high and will continue to increase given the large number of storm-damaged pines that had not yet been completely colonized. (In general, once bark beetles have colonized a given area of bark, they do not re-attack the same area.) Another factor that will favor *Ips* is that the Dominican dry season usually starts in December and continues for at least 3 to 4 months. Drought-stressed trees are



often more susceptible to attack by bark- and wood-infesting insects (Mattson and Haack 1987). For example, bark beetle outbreaks were very common throughout the US in 1988,

which was a year of severe drought nationwide (Haack and Mattson 1989). Drought was also linked to outbreaks of pine bark beetles in Guatemala (Haack and Paiz-Schwartz 1997) and Honduras (Wilkinson and Haack 1987). So in the Dominican Republic, as the hurricane-damaged pines become completely colonized during early 1999, future *Ips* generations will likely attack the pines that survived Hurricane Georges. These pines should be susceptible to *Ips* attack in early 1999 because they will be stressed by drought and by the fact that the strong winds associated with Hurricane Georges removed much of their foliage and likely caused root damage as the trees were rocked back and forth. So my prediction for 1999 is that the Dominican Republic will experience widespread *Ips* outbreaks in the areas impacted by Hurricane Georges, and that the severity of the outbreak will largely depend on the intensity of the upcoming dry season.





usefulness of *A. mangium* in the Dominican Republic as well as elsewhere in the Americas where this beetle occurs.

The identity of this platypodid is *Teloplatypus ustulatus* (Chapuis) (Wood 1993). Up through 1992, this beetle had been known as *Platypus ustulatus* Chapuis (Wood and Bright 1992). In a 1997 study by A.M. Richter (personal comm.) in the Dominican Republic, *T. ustulatus* heavily attacked the trunks of

Natural enemies. In the US, pine bark beetles have many natural enemies, including both predators and parasitoids. In the southern US, the two principal predators are *Thanasimus dubius* (F.) (Cleridae) and *Temnochila virescens* (F.) (Trogositidae). Both of these beetles are readily collected in funnel traps that are baited with ipsdienol lures (Billings and Cameron 1984). However, during two field studies in the Dominican Republic in 1987 and 1988, only a single *T. dubius* adult was ever collected (Haack et al. 1989). Moreover, during my 1998 visit, I did not see or collect any predators. It is not clear why there are so few bark-beetle natural enemies in the Dominican Republic, but whatever the reason it appears that *Ips* populations rise and fall primarily in relation to availability of susceptible host trees and not due to pressure from natural enemies. The Dominicans may want to consider importing and releasing some natural enemies of *Ips* bark beetles.

Salvage attempts. The Dominican Republic is attempting to salvage as much timber as possible, but the country has very few sawmills and all are now running at full capacity. Debarking pine trees that are currently infested is one way to lower the *Ips* population, but this is a very labor intensive option and is seldom used unless the number of infested trees is relatively small.

Other insect pests. Hurricane Georges also caused widespread damage to many plantations of black wattle, *Acacia mangium* Willd., an exotic tree that is native to Australia. *Acacia mangium* is widely planted throughout the tropics because of its rapid height growth, often exceeding 3 meters per year. In the Dominican Republic, *A. mangium* is now the dominant tree species being produced in the Dominican nurseries and is the current tree of choice for most reforestation projects, especially on private land. Nevertheless, a native trunk-boring platypodid beetle may limit the

A. mangium trees, especially during the dry season, resulting in tree mortality within 2 months of initial attack. Platypodids carry symbiotic microorganisms that grow in the woody tissues surrounding their galleries and serve as food for the developing larvae. These microbes stain the wood and can assist in killing the host tree (Cibrián-Tovar et al. 1995, Solomon 1995). Given what is known about this platypodid's biology in the Dominican Republic, it seems likely that *T. ustulatus* populations will increase greatly in 1999 given the large number of susceptible trees available to attack and the fact that the dry season has now started.

Many scolytid and platypodid beetles attack weakened and dying trees, and in so doing serve to maintain healthy forest ecosystems over the long-term. However, when natural disasters such as hurricanes occur, the rate of change is so dramatic that local ecosystems and economies can be impacted for many years.

I left the six funnel traps in the Dominican Republic with Mr. Eli Martinez, director of Foresta's Research Division. The plan is to use the traps to monitor *Ips* populations in four pine forests and platypodid populations in two *A. mangium* plantations over the next several months. We will use ipsdienol lures to attract *Ips calligraphus* and high-release ethanol lures for *T. ustulatus*. It will be interesting to follow the population trends of these two Dominican forest insects and record their impacts in the wake of Hurricane Georges.



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45TH ANNUAL MEETING OF THE MICHIGAN ENTOMOLOGICAL SOCIETY

“Insect & Ecosystem Diversity in the Great Lakes Region”
4 June 1999.

This year's meeting will be held at the Ralph A. MacMullan (RAM) Conference Center. It's just off US-27 and eleven miles south of Grayling. The theme of this year's meeting will be “Insect & Ecosystem Diversity in the Great Lakes Region.”

Many more details will be in the spring 1999 issue of the MES Newsletter.

Breaking Diapause March 1999

This year our spring informal get together is scheduled for 20 March. It will again be held from 9 AM until mid-afternoon in Room 244 of the Natural Science Building at MSU. Bring along your unidentified insects and get some ideas for this year's projects. Look for the map and more information in the next newsletter.

MICHIGAN ENTOMOLOGICAL SOCIETY



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