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CAPS Exotic Pest Pheromone-trap Survey 2003 / Specimen Backlog Identifications

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Background

Cooperative Agricultural Pest Surveys (CAPS) conducted in Washington State in the last ten years have employed pheromone-lure baited sticky traps to detect or delimit a wide range of exotic pest species. While pheromone-lures are formulated to attract a single “target” pest species, they also commonly attract a variety of “non-target” species, which may include other significant exotic pests new to the region. Since identification of “non-target” captures has been a secondary objective in previous surveys, a backlog of unknown specimens has been compiled, the processing and identification of which is the primary objective of this project.

2003 Project Objectives

Prepare unknown pheromone-trap and other survey “non-target” specimens for identification.

- Remove specimens from pheromone-traps and prepare micro-mounts and dissections as needed.
- Create digital images of specimens, including genitalia and other morphology as needed for identification.

Identify specimens to species when possible.

- Evaluate and identify specimens using WSDA reference materials and voucher specimens.
- Submit specimens and/or digital graphics to collaborating taxonomic experts for identification.

Project Methods and Materials

Over 260 specimens were prepared for identification in the course of this project, most of which had abdomens removed, cleared (in 10% KOH), and arranged in temporary (glycerine) slide mounts. After this preparation, specimens and slide mounts were examined and genitalia and other diagnostic characters evaluated using WSDA diagnostic resources and voucher specimens. If prepared specimens were identifiable to species, they were recorded and either discarded or curated into the WSDA reference collection, depending on condition and reference value. Unidentifiable specimens and associated diagnostic slide mounts were photographed with a Nikon Coolpix 5400 digital camera, handheld or through a Leica MS5 Dissecting Microscope, and the high-resolution digital graphics were compiled onto CD for submission to collaborating lepidoptera systematists and identifiers. Lepidoptera taxonomists and identifier specialists, to whom digital diagnostic graphic CDs were sent for this project, included; Dr. Ron Hodges - USDA ARS Systematic Entomology Lab (Ret.), Dr. William Miller – University of Minnesota, Drs. John Brown and David Adamski – USDA ARS Systematic Entomology Lab, and Dr. Steven Passoa – USDA APHIS National Lepidoptera Identifier.

Project Results

A total of 210 specimens have been identified in the WSDA Olympia Entomology Lab, comprised of 56 species, ten of which were new to the WSDA Reference Collection (see Table 1). **No pest species new to the state were among the 56 species identified.** Digital graphic resources for unidentified specimens, submitted to lepidoptera specialists on CD, included over 50 (apparent) species. As of this report date, no identifications or other feedback has been received for those specimens. A selection of digital diagnostic graphics sent to identifiers is included (in reduced file size format) as Appendix 1 in this project report, and pending identification results will be reported as an addendum. (Please contact the author via the information below with questions or to request the identification addendum when issued.)

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Table 1. Non-target CAPS Pheromone-trap Survey Specimens Identified at WSDA Olympia Entomology Lab.

	Species	# Specimens	WSDA Record Status
1	<i>Acleris bowmanana</i> (McD., 1934)	3	
2	<i>Acleris britannia</i> Kearfott, 1904	1	
3	<i>Acleris hastiana</i> (Linnaeus, 1758)	1	
4	<i>Acleris maccana</i> (Treitschke, 1835)	1	
5	<i>Acleris maximana</i> (Barnes & Busck, 1920)	3	
6	<i>Acleris</i> sp.	1	
7	<i>Acleris variegana</i> (D. & S., 1775)	3	
8	<i>Aethes smeathmanniana</i> (F., 1781)	4	
9	<i>Amphipyra pyramidoides</i> Gn., 1852	1	New to WSDA Collection
10	<i>Anarsia lineatella</i> Zeller	2	New to WSDA Collection
11	<i>Ancyliis simuloides</i> (McD., 1955)	2	
12	<i>Archips fuscocupreanus</i> Wlsm., 1900	1	
13	<i>Archips rosanus</i> (L., 1758)	1	
14	<i>Argyresthia goedartella</i> (L., 1758)	15	New to WSDA Collection
15	<i>Argyrotaenia franciscana</i> (Wlsm., 1879)	20	
16	<i>Chionodes braunella</i> (Keif., 1931)	3	New to WSDA Collection
17	<i>Choreutis pariana</i> (Clerck, 1759)	2	
18	<i>Choristoneura rosaceana</i> (Harris, 1841)	4	
19	<i>Clepsis fucana</i> (Wlsm., 1879)	1	
20	<i>Croesia holmiana</i> (L., 1758)	6	
21	<i>Depressaria pastinacella</i> (Duponchel, 1838)	8	New to WSDA Collection
22	<i>Endrosis sarcitrella</i> (Linnaeus)	2	
23	<i>Epinotia albangulana</i> (Wlsm., 1879)	7	
24	<i>Epinotia johnsonana</i> (Kft., 1907)	6	
25	<i>Epinotia lindana</i> (Fern., 1892)	4	
26	<i>Epinotia lomonana</i> Kearfott, 1907	3	
27	<i>Epinotia nisella</i> (Cl., 1759)	1	
28	<i>Epinotia pulsatillana</i> (Dyar, 1903)	1	
29	<i>Epinotia radicana</i> (Heinr., 1923)	7	
30	<i>Epinotia solandriana</i> (L., 1758)	1	
31	<i>Epinotia solicitana</i> (Wlk., 1863)	2	New to WSDA Collection
32	<i>Ethmia albistrigella</i> (Walsingham, 1880)	2	New to WSDA Collection
33	<i>Eucosma sonomana</i> Kft., 1907	9	
34	<i>Grapholita imitativa</i> Heinr., 1926	3	
35	<i>Grapholitha prunivora</i> (Walsh, 1868)	1	
36	<i>Gypsonoma adjuncta</i> Heinr, 1924	2	New to WSDA Collection
37	<i>Henricus fuscodorsanus</i> (Kft., 1904)	3	
38	<i>Limnaecia phragmitella</i> Stainton, 1851	1	New to WSDA Collection
39	<i>Martyrhilda ciniflonella</i> (Lienig & Zell., 1846)	4	
40	<i>Oegoconia quadripuncta</i> (Haworth, 1828)	2	
41	<i>Olethreutes deprecatorius</i> Heinr., 1926	20	
42	<i>Olethreutes olivaceana</i> (Fern., 1882)	1	
43	<i>Olethreutes punctana</i> (Walsingham, 1903)	2	
44	<i>Olethreutes quadrifidus</i> (Zell., 1875)	1	
45	<i>Orgyia pseudotsugata</i> (McD., 1921)	3	
46	<i>Orthotaenia undulana</i> (Denis & Schiffmuller, 1904)	9	
47	<i>Pandemis heparana</i> (Denis & Schif., 1775)	4	
48	<i>Pandemis</i> sp.	1	
49	<i>Platynota idaeusalis</i> (Wlk., 1859)	1	
50	<i>Proteoteras aesculana</i> Riley, 1881	1	
51	<i>Rhopobota naevana</i> (Hbn., 1814)	5	
52	<i>Rhyacionia buoliana</i> (D. & S., 1775)	3	
53	<i>Rhyacionia zozana</i>	8	New to WSDA Collection
54	<i>Sparganothis senecionana</i> (Wlsm., 1879)	4	
55	<i>Spilonota ocellana</i> (Denis & Schiff., 1775)	2	
56	<i>Syndemis afflictana</i> (Wlk., 1863)	1	
	New Records (Identifications) Total	210	

Appendix 1. Sample Diagnostic Images Sent to Collaborating Identifiers.

