

Identification of Moth-Type (“Lep”) Insect Pests of Pecan

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Moth-Type (“Lep”) Insect Pests in Pecan

58 total – so far

<i>Strymon melinus</i> Hubner		Cotton square bore
<i>Acrobasis nuxvorella</i> Neunzig		Pecan nut casebearer
<i>Amyelois transitella</i>		Navel orange worm
<i>Cydia caryana</i> (Fitch)		Hickory shuckworm
<i>Hyphantria cunea</i> (Drury)		Fall webworm
<i>Lophocampa caryae</i>		Hickory tussock moth
<i>Eulecanium caryae</i>		Large hickory lecanium
<i>Coleophora laticornella</i> Clemens		Pecan cigar casebearer
<i>Dichomeris georgiella</i> (Walker)		
<i>Dichomeris ventrella</i> (Fitch)		
<i>Cameraria caryaeoliella</i> (Clemens)		Blotch leafminer
<i>Phyllonorycter caryaealbella</i> (Chambers)		leafminer
<i>Phyllonorycter trinotata</i> (Chambers)		leafminer
<i>Coleophora laticornella</i> Clemens		pecan cigar casebearer
<i>Malacosoma americanum</i>		Eastern tent caterpillar
<i>Coptodisca lucifluella</i> Clemens		leafminer
<i>Apoda y-inversum</i> (Packard)		Yellow-collared Slug Moth
<i>Satyrium calanus</i> (Hubner)		
<i>Megalopyge opercularis</i> (J.E. Smith)		
<i>Stigmella juglandifoliella</i> (Clemens)		Serpentine leaf miner
<i>Catocala angusi</i> Grote		Angus' Underwing Moth
<i>Catocala maestosa</i> Hulst		Sad Underwing Moth
<i>Catocala agrippina</i> C. cordiformas only ??		Agrippina Underwing Moth
<i>Catocala judith</i>		Judith's Underwing Moth
<i>Catocala obscura</i>		Obscure Underwing Moth
<i>Catocala paleogama</i>		Old Wife Underwing Moth
<i>Catocala piatrix</i>		Penitent Underwing Moth
<i>Catocala residue</i>		
<i>Catocala sappho</i>		Sappho Underwing Moth
<i>Catocala similis</i>		Similar Underwing Moth
<i>Catocala vidula</i>		Window Underwing Moth

<i>Panopoda rufimargo</i> (Hubner)		Red-lined Panopoda Moth
<i>Diphthera festiva</i>		Heiroglyphic moth
<i>Datana integerrima</i> Grote & Robinson		Walnut caterpillar
<i>Schizura unicornis</i> Smith		
<i>Thyridopteryx ephemeraeformis</i> (Haworth)		
<i>Acrobasis caryivorella</i> Ragonot		Pecan nursery casebearer
<i>Acrobasis cunulae</i>		
<i>Acrobasis evanescentella</i>		
<i>Acrobasis exsuella</i> (Zeller)		
<i>Acrobasis juglandis</i> (LeBaron)		Pecan leaf casebearer
<i>Acrobasis hebescella</i> Hulst		
<i>Acrobasis indigenella</i> (Zeller)		
<i>Acrobasis palliolella</i> Ragonot		
<i>Ephesiodes gilvescentella</i> Ragonot		
<i>Euzophera semifuneralis</i> (Walker)		
<i>Acrobasis caryae</i> Grote		
<i>Gretchena bolliana</i> (Slingerland)		Pecan budmoth
<i>Cydia pomonella</i> (Linnaeus)		
<i>Platynota rostrana</i> (Walker)		Omnivorous Platynota Moth
<i>Citheronia reglis</i>		Hickory horned devil/Regal moth
<i>Actias luna</i> (L.)		Luna moth
<i>Amorpha juglandis</i> Smith		Walnut sphinx moth
<i>Synanthedon scitula</i> (Harris)		
<i>Euzophera semifuneralis</i> (Walker)		American plum borer
<i>Synanthedon scitula</i> (Harris)		Dogwood borer
<i>Acrobasis demotella</i> Grote		Walnut shoot moth
<i>Cossula magnifica</i> (Strecker)		Pecan carpenter worm

Possible Pests for the Southwest

- Pecan nut casebearer
- Hickory shuckworm
- Pecan Bud moth
- Leafminers
- Walnut caterpillar
- Walnut sphinx
- Cotton square borer

Insect Order Lepidoptera or “Leps”

Moths and Butterflies

Complete metamorphosis

- Egg
- Larvae - caterpillars
- Pupae
- Adult

Sucking mouth parts

Wings covered with scales



Insect Orders

- Animals are classified by structure and characteristics
 - All insects belong to the Class Insecta
 - Insects are divided into 26 Orders
 - Species is the most detailed classification

Order	Example	Place Usually Found	Wings	Mouthparts
Coleoptera	Ladybugs	Everywhere	Yes	Chewing
Diptera	Mosquitoes and Flies	On Vegetation	Yes	Sucking
Hymenoptera	Ants and Bees	On Ground or Vegetation	Yes	Chewing and Sucking
Isoptera	Termites	In Ground or Wood	Yes	Chewing
Lepidoptera	Butterflies	On Vegetation	Yes	Sucking
Mallophaga	Chewing Lice	On Mammals	No	Chewing
Odonata	Dragonflies	Near Water	Yes	Chewing
Orthoptera	Crickets	On Ground or Vegetation	Yes	Chewing
Siphonaptera	Fleas	On Birds or Mammals	No	Sucking

Lepidoptera Larvae – 1 to 4 sets of prolegs



Loopers or “inch worms”



Adult Sizes – Large to Small (microlepidoptera)



Walnut Sphinx

Leafminer moth



Larval Sizes – Large to Small



Pecan Catacala

Pecan Leafminers



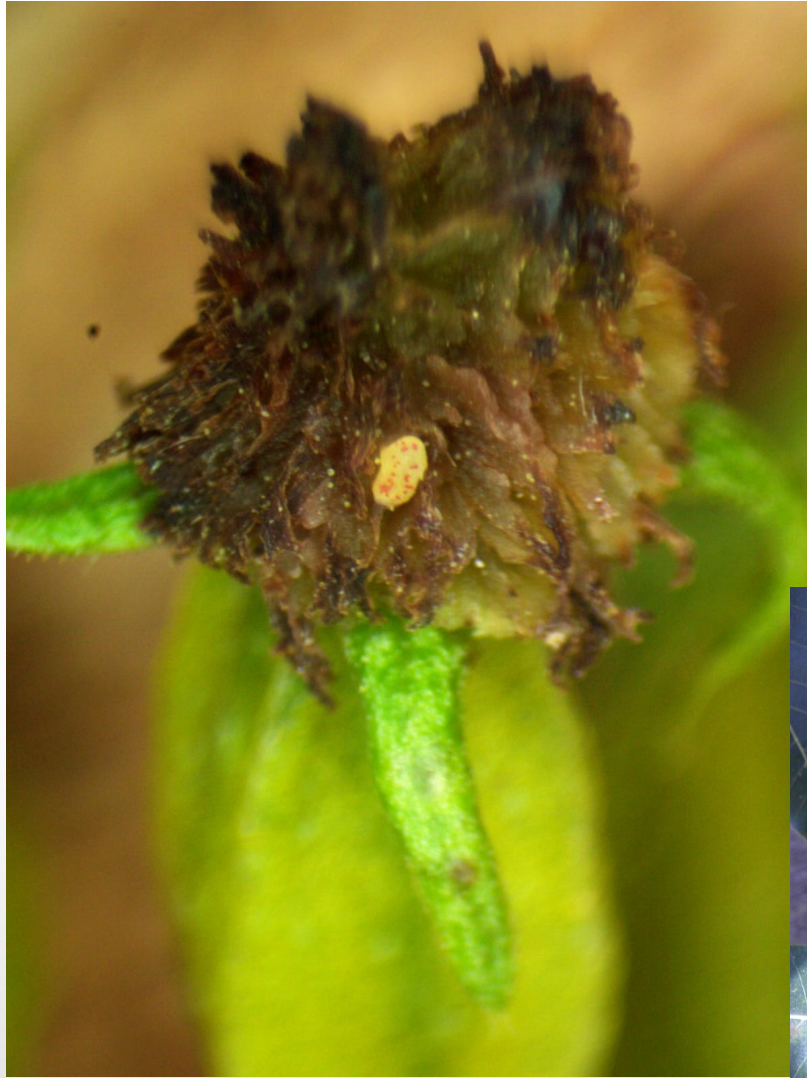
Pecan Sawfly – *Megaxyela major*

Order: Hymenoptera (ants, wasps, bees)



Lepidoptera Eggs

single or in mass



WHY IS CORRECT IDENTIFICATION IMPORTANT?

- Determination of pest status
- Determine thresholds for management decisions
- Management options – if needed
- Selection of proper treatment
- Quarantine issues

Pecan Nut Casebearer vs. Hickory Shuckworm



First Generation PNC Damage

Confirmed in Dona Ana County, NM - 1992



Second Generation PNC Damage



Third Generation PNC Damage



Third Generation PNC Damage

Note presence of
frass and pupae



PNC Adults



Pecan bud moth





PNC



Pecan budmoth





PNC vs HSW

Pecan nut casebearer

- Over winters as partially grown larvae
- Larvae feed in new shoots after budbreak
- 2 to 4 generations/yr

Hickory shuckorm

- Overwinters as mature larvae
- Larve pupae in shuck during spring with adult emergence starting as early as March
- 5 to 6 generations/yr

Flagging or wilting due to PNC



Hickory Shuckworm Damage

Confirmed in Dona Ana County, NM - 1992



HSW Adult



Nut Drop Due to HSW

June, 2018 – Bastrop Co. TX



HSW Shuck Damage





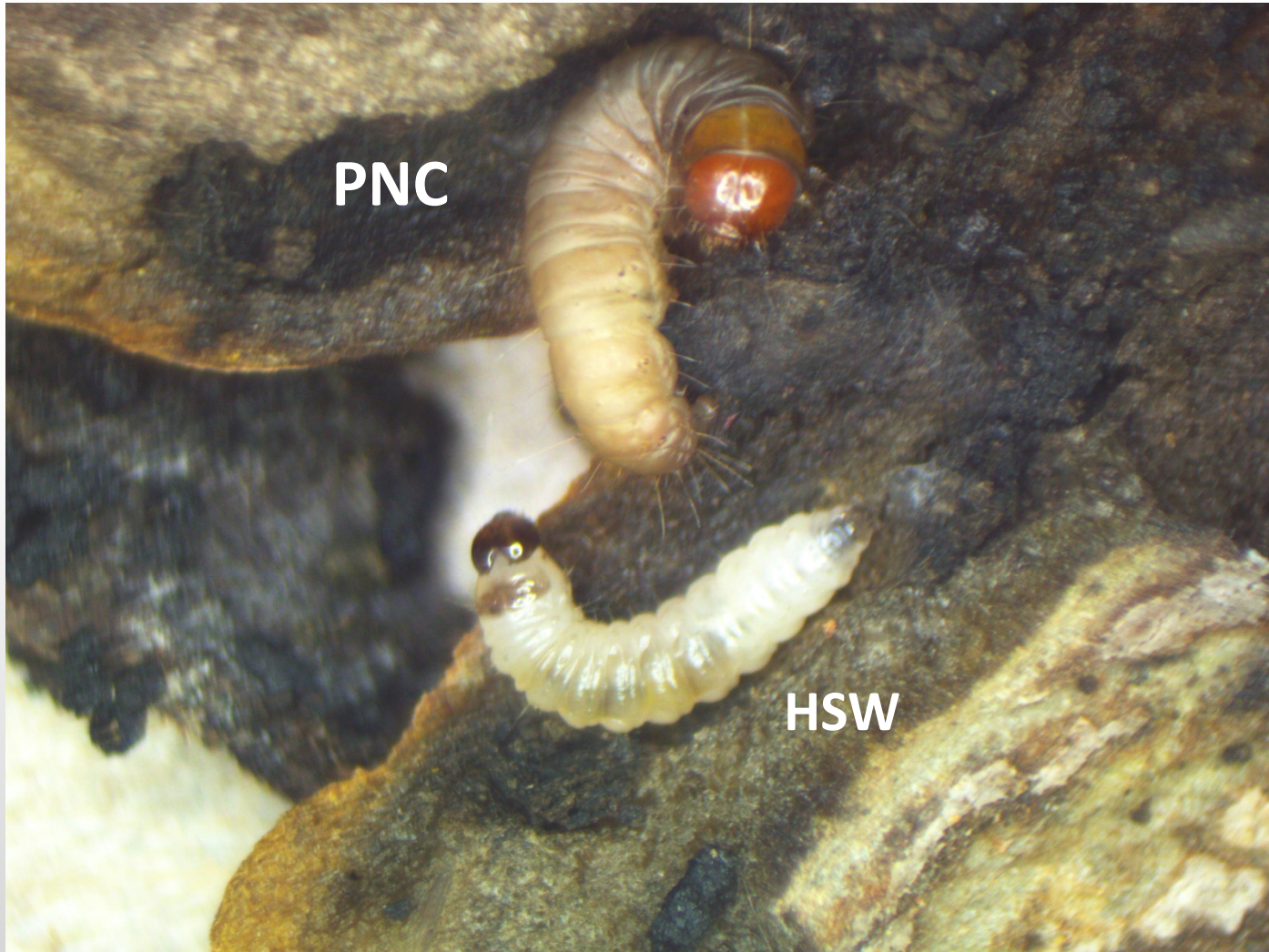
Shell Tracking Due to HSW



HSW larvae



PNC vs HSW



Pecan Budmoth Adults



Damage From Pecan Budmoth



Photo credit – University of Florida, IFAS Extension

Defoliation from Walnut Caterpillar

June 15 – Fort Bend County, TX



Walnut Caterpillar Management

EARLY RECOGNITION OF A POTENTIAL PROBLEM

- Egg masses
- Defoliated terminals
- Colonies on branch terminals
- Cast skins on tree trunk
- Dropping on driveway, sidewalks



Walnut Caterpillar Adult



Walnut Caterpillar Egg Mass

500 – 800 eggs



Colony of 3rd Instar Walnut Caterpillar Larvae





Defoliation from Walnut Caterpillar



Walnut Caterpillar Frass (Droppings) on Driveway





5th Instar Walnut Caterpillar

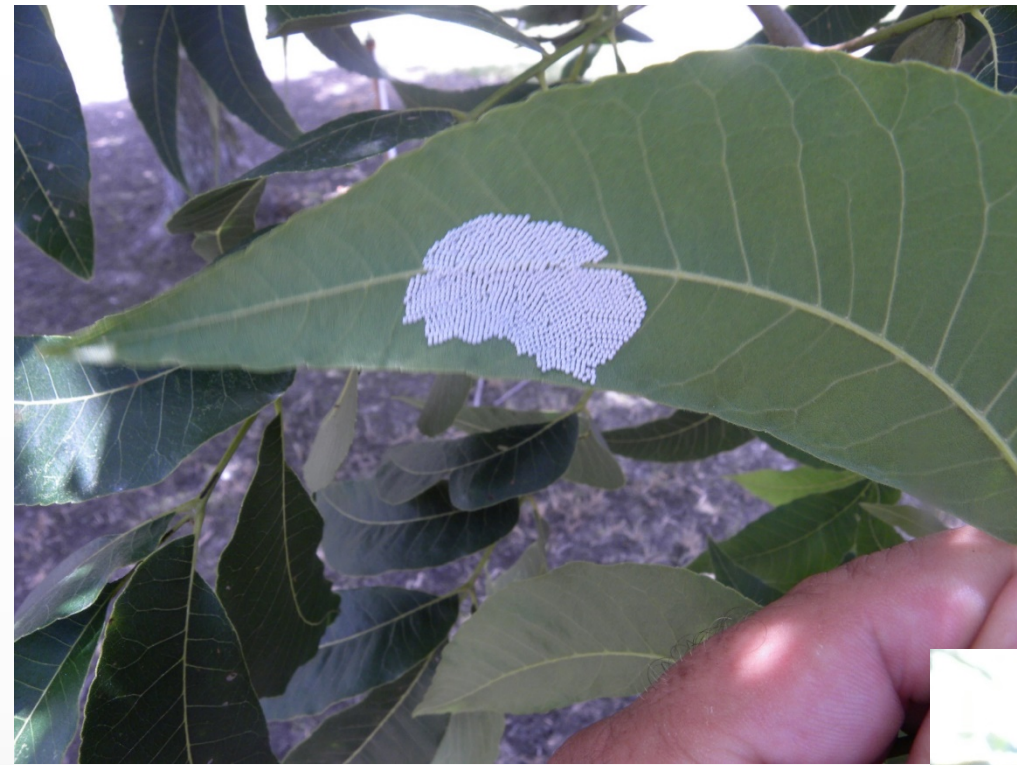


Fall Webworm





Walnut Caterpillar



Fall Webworm



Leafminers

5 Species that feed on pecan





Pecan Catacala – 11 Species on Pecan

Adults – Underwing Moths



Walnut Sphinx Adult – *Amophora juglandis*

Walnut and butternut (*Juglans*), hickory (*Carya*), alder (*Alnus*), beech (*Fagus*), hazelnut (*Corylus*), and hop-hornbeam (*Ostrya*)



Defoliation from Walnut Sphinx Caterpillars



Walnut Sphinx Caterpillar



Walnut Sphinx Pupae at base of Tree



Cotton Square Borer



Indian meal moth



QUESTIONS

