

HOUSEHOLD ARTHROPODS

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2015

OVERVIEW

- ✘ Guidelines & Principles
- ✘ Groups of pests
 - Public health pests
 - Nuisance
 - Household
 - Structural pests

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MANAGEMENT PRINCIPLES

- ✘ Define the problem
 - + Damage?
 - + Critter(s)?
- ✘ ID the critter
 - + Pest?
 - + Dangerous? (people, pets, or structures?)
 - + Did it just stumble indoors?
- ✘ Appropriate management



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DETERMINE MANAGEMENT

Eradicate?
Control?
Manage?
Tolerate?

Verify: *PNW Insect Management Handbook*

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CAPTURE THE CRITTER



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RECOMMENDATIONS

Research-based management

EPA says:
Pest control materials
must be labeled for that purpose

No home remedies

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PUBLIC HEALTH PESTS

Blood feeders

PUBLIC HEALTH: BED BUGS



- ✘ 3/16"
- ✘ Broadly flat, oval
- ✘ Cracks, crevices, & seams
- ✘ Eggs glued in place
- ✘ Bites w/o pain
- ✘ Odor: sweet; acrid
- ✘ *Bed Bugs* (FS070E)



MANAGEMENT: BED BUGS



Key Points

- ✘ Mattress: Encase or heat Rx
- ✘ Launder bedding, clothes – hot!
- ✘ Pest control company



PUBLIC HEALTH: MOSQUITOES



MANAGEMENT: MOSQUITOES

Key Points

- ✘ Source reduction
- ✘ Personal protection
- ✘ Mosquito fish (*Gambusia*), if legal
- ✘ Rx for larvae: *Bti*
(*Bacillus thuringiensis israelensis*)



PUBLIC HEALTH: FLEAS

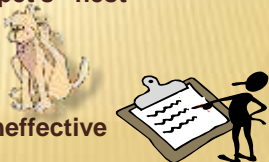


- ✘ Adults on animal
- ✘ Eggs drop off
- ✘ Larvae 1/2" w/tan head
- ✘ Larvae eat debris
- ✘ Pupa "waits"
- ✘ Nest parasites

MANAGEMENT: FLEAS

Key Points

- ✘ 3-step program
 1. Vacuum often
 2. Insect growth regulator (IGR) on carpet & pet's "nest"
 3. Treat the pet
 - Comb
 - Apply IGR
- ✘ Bombs & foggers ineffective



PUBLIC HEALTH: TICKS



Rocky Mountain wood tick



- ✘ *Dermacentor* species
- ✘ East of Cascades
- ✘ Immatures feed mostly on rodents
- ✘ Adults feed on large mammals

PUBLIC HEALTH: TICKS

Western blacklegged tick





- ✘ *Ixodes pacificus*
- ✘ Western WA, OR, CA
- ✘ Woodland margins
- ✘ Only vector of Lyme disease in Oregon
- ✘ Low transmission

MANAGEMENT: TICKS

Key Points

- ✘ Sensible clothes
- ✘ Insect repellent (DEET most effective)
- ✘ Daily inspections
- ✘ Remove ticks ASAP
- ✘ Clean the area (soap & water)
- ✘ No Vaseline; no cigarette



PUBLIC HEALTH PESTS

Potential stinging pests

PUBLIC HEALTH: BALD-FACED HORNET



- ✘ Annual colony
- ✘ Nest: aerial
- ✘ Beneficial insects
- ✘ Pesticides a last resort

PUBLIC HEALTH: YELLOWJACKET



- ✘ Annual colony
- ✘ Nest: ground or aerial or wall/ceiling void
- ✘ Beneficial insects
- ✘ Pesticides a last resort

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PUBLIC HEALTH: YELLOWJACKET



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PUBLIC HEALTH: YELLOWJACKET



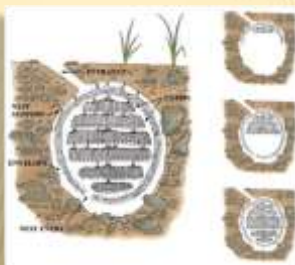
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PUBLIC HEALTH: STINGING WASP



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PUBLIC HEALTH: YELLOWJACKET



<http://cru.cahle.wvu.edu/publications/000543/000543.pdf>

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MANAGEMENT: STINGING WASP

Key Points

- ✘ Tolerate if possible
- ✘ Don't annoy
- ✘ Don't cross flight path
- ✘ Pheromone traps of limited value
- ✘ If control required
 - + Long-distance aerosol at night
 - + Or hire a professional



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SELDOM STING: BUMBLE BEES

Bombus morrisoni



(Ken Gray Photos, OSU)

B. fervidus



(Ken Gray Photos, OSU)

B. melanopygus;
a red tail bee



(Ken Gray Photos, OSU)

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SELDOM STING: PAPER WASPS



(wikipedia: http://commons.wikimedia.org/wiki/File:Schwarzblauer_Farnhals.jpg)



(Assurance Home Inspections)

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PAPER WASP: POLISTES DOMINULA



(Garry Wegner)

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KEY POINTS: WASPS & BEES

- ✗ Yellowjackets
- ✗ Bald-faced hornets
- ✗ Paper wasps
- ✗ Bumble bees
- ✗ Honey bees

annual colony

long-lived colony



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PUBLIC HEALTH PESTS

Spiders

Bites seldom succeed

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PUBLIC HEALTH: SPIDERS

- ✗ Black widow
(*Latrodectus hesperus*)
- ✗ Hobo spider
(*Tegenaria agrestis*)

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PUBLIC HEALTH: SPIDERS

Western black widow



- ✦ About 3/4"
- ✦ Glossy black
- ✦ Red "hourglass"
- ✦ Shy and reclusive
- ✦ Dark places
- ✦ Don't run on ground
- ✦ Uncommon western OR



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PUBLIC HEALTH: SPIDERS

Widow look-a-likes



Steatoda species



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PUBLIC HEALTH: HOBO SPIDER



- ✦ *Tegenaria agrestis*
- ✦ To 1 3/4"
- ✦ "Funnel web" spider
- ✦ Moves rapidly
- ✦ 1st in NW: 1930; Seattle

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PUBLIC HEALTH: FUNNEL WEB

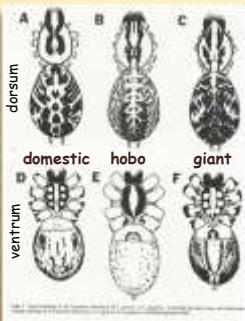


(University of Michigan Museum)



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PUBLIC HEALTH: HOBO SPIDER



Differentiate among look-a-likes

verify ID of sexual characters (PLS 116)



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PUBLIC HEALTH: HOBO SPIDER



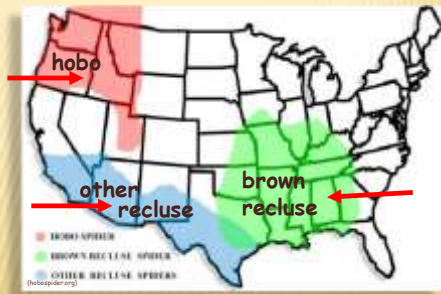
hobo giant domestic



Fig. 8. Left male genitalia showing differences in the male's pedipalps. Right: male genitalia showing differences in the male's pedipalps. (Photo by Dr. V. V. V. V.)

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HOBO SPIDER vs. BROWN RECLUSE



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MANAGEMENT: SPIDERS

Key Points

- ✘ Take care
 - + Look before you reach
 - + Teach children: "Don't touch"
- ✘ Screen & seal
- ✘ Sticky traps
- ✘ Pesticides a last resort
 - If so, Pest Control Operator apply a perimeter spray in late June



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NUISANCE PESTS

- Box elder bugs
- Lady beetles
- BMSB

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NUISANCE: BOX ELDER BUG



- ✘ *Boisea rubrolineata*
- ✘ About 1/2"
- ✘ Gray w/red marks
- ✘ Fall & winter: Cluster on exterior wall
- ✘ Move indoors
- ✘ Don't breed indoors
- ✘ Pesticides of little value

(Duggal/Arnett Barry Growth)

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NUISANCE: ASIAN LADY BEETLES



- ✘ *Harmonia axyridis*
- ✘ On S or W wall
- ✘ Move indoors
- ✘ Might bite
- ✘ Stain
- ✘ Beneficial outdoors, nuisance indoors



(http://www.pestcontrol.com)

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NUISANCE: BMSB




- ✘ Brown marmorated stink bug
- ✘ Antennae: white bands
- ✘ 1st instar: bright color
- ✘ Ventrum "dirty"
- ✘ Emerging pest of fruits, veggies, etc.

(Duggal/Arnett Barry Growth)

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NUISANCE: SPIDERS

crab spider



(Ken Gray Photos, OSU)

giant house spider




(J.R. Natter)

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NUISANCE: BORERS

banded alder borer



(Ken Gray Photos, OSU)

pine sawyer




(Ken Gray Photos, OSU)

- ✗ From downed trees
- ✗ Won't infest structure

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NUISANCE: BORERS

longhorn flower beetle




Leptura
(Ken Gray Photos, OSU)

oak cordwood borer



Xylotrechus sp.
(Ken Gray Photos, OSU)

- ✗ From firewood
- ✗ Visit flowers
- ✗ Won't infest house



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MANAGEMENT: NUISANCE PESTS

Key Points

- ✗ Remove food, if any
- ✗ Block access
Screens; caulk;
copper "wool"
- ✗ Remove them




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POTENTIAL DANGER IN FIREWOOD

Don't spread pests in firewood
Buy it where you burn it!

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HOUSEHOLD PESTS

Pantry pests

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PANTRY PESTS: FLOUR MOTHS

- ✦ Adults about 1/4"
- ✦ Fly daytime
- ✦ Active year-round
- ✦ Indian meal moth most common
 - + Larvae = 1/2" "worms"
 - + Crawl up wall
 - + Pupate at ceiling

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PANTRY PESTS: INDIAN MEAL MOTH



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PANTRY PESTS: DRUGSTORE BEETLE



- ✦ To 1/10"
- ✦ Medium brown
- ✦ Diet: food, spices, wool, leather, books, seeds, dog food, & more



PANTRY PESTS

Key points

- ✦ If it's in food & moving, it's a pantry pest!
- ✦ Management is the same for all kinds: Locate & destroy



MANAGEMENT: PANTRY PESTS

Key Points

- ✦ Locate & destroy
- ✦ Pheromone traps
- ✦ Many potential foods
 - Cereals, seeds, nuts, grains, flour
 - Bulk or packaged
 - Birdseed; pet food
 - Craft stuff & more



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HOUSEHOLD: ANTS



- ✦ Various ant species
- ✦ Visible ants < 10%
- ✦ Nest: indoors or out
- ✦ Enter via cracks, crevices
- ✦ Rx: Pre-formulated baits
- ✦ Be patient

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HOUSEHOLD PESTS

Flies

HOUSEHOLD: FLIES

- ✘ Small flies
 - + Fruit flies
 - + Fungus gnats (several)
- ✘ Larger flies
 - + Filth flies (House flies; flesh flies; blow flies)
 - + Cluster flies


HOUSEHOLD: FRUIT FLIES




- ✘ 1/8"
- ✘ Yellow-brown
- ✘ Large red eyes
- ✘ Decaying veggies & fruit

HOUSEHOLD: FUNGUS GNATS

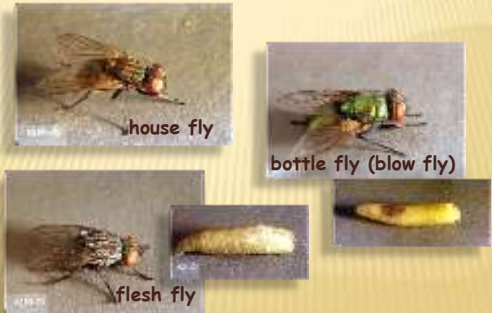
Sciarid fungus gnat
(wet potting mix)



Mycetophilid gnat
(moldy stuff)



HOUSEHOLD: FILTH FLIES



- house fly
- bottle fly (blow fly)
- flesh fly

HOUSEHOLD: FILTH FLIES

- ✘ Indoors & outdoors
- ✘ Foods: trash; carcasses
- ✘ Maggots leave food to pupate
- ✘ Management
 - + Sanitation
 - + Screens



HOUSEHOLD: CLUSTER FLIES



- ✦ 3/8"
- ✦ Thorax: gold hairs
- ✦ Adults
 - + Cluster on ceiling
 - + Fly in center of room
 - + Nuisance
- ✦ Larvae parasitize earthworms

(Ken Gray Photos, CSU)

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MANAGEMENT: CLUSTER FLIES

Key Points

- ✦ Swatter; Fly paper
- ✦ Seal cracks, crevices
- ✦ 24-hour light
- ✦ Repair screens
- ✦ Aerosol or "bomb" little value



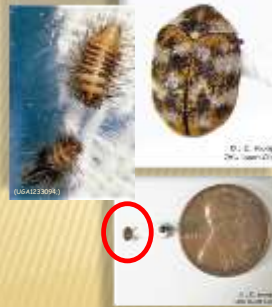
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HOUSEHOLD PESTS

Fabric damagers
(Carpet beetle; Clothes moths)

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HOUSEHOLD: VARIED CARPET BEETLE



- ✦ Most common fabric-damager
- ✦ To 1/8"
- ✦ Larva eats fur, woolens, insects & much more
- ✦ Adult eats pollen

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HOUSEHOLD: CLOTHES MOTHS



Fly at night

clothes moth

larva

pupa



case-making moth



larva

case

(J. R. Natter)

(Kendall Bio-Research)

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MANAGEMENT: FABRIC DAMAGERS

Key Points

- ✦ Clean fabrics before storage
- ✦ Check stored goods
- ✦ Locate & destroy
 - + Discard or clean infested materials
 - + Vacuum thoroughly
- ✦ After clean-up, pheromone traps (moths)
- ✦ Moth balls/crystals ineffective




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STRUCTURAL PESTS

Carpenter ants


Termites

STRUCTURAL: CARPENTER ANT



worker

(Max Gray Photos, OSU)



alate (winged adult)

(Max Gray Photos, OSU)

- ✘ Two species:
 - + *Camponotus modoc*
 - + *C. vicinus*
- ✘ Forage outdoors (honeydew, dead insects)
- ✘ Forage indoors
- ✘ Multiple nests

STRUCTURAL: CARPENTER ANT


- ✘ Workers 1/4 to 1/2"
 - Black, or red & black
- ✘ 10,000 to 20,000/nest
- ✘ Main nest
 - = Queen, eggs, larvae, workers
- ✘ Satellite nests
 - = Pupae, workers

STRUCTURAL: CARPENTER ANT

Signs

- ✘ Fresh sawdust
- ✘ Moist wood, or dry
- ✘ Scraping sounds in the wall
- ✘ 2-way trails (Apr-Oct; 10 pm to 2 am)
- ✘ Alates (winged forms) in the spring


STRUCTURAL: CARPENTER ANT



MANAGEMENT: CARPENTER ANT

Key Points

- ✘ Avoid wood-to-moisture contact
- ✘ Repair leak; replace wood
- ✘ Treatment best left to PCOs
 - + Important: Rx main nest
 - + One Rx + annual inspections
- ✘ Common ant baits don't work



STRUCTURAL: CARPENTER ANT

Locate the main nest



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IDENTIFY: CARPENTER ANT

elbowed antenna rounded thorax
one node on slender "waist"



IDENTIFY: CARPENTER ANT



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Subterranean termites



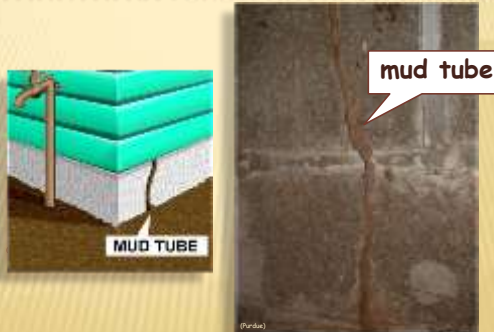
- Fly any time
- Small (3/8")
- Nest in ground
- Sound wood
- Shelter tubes

Dampwood termites *



- Fly in fall (Aug - Oct)
- Large (to 1")
- Nest in wood
- Damp or sound wood

STRUCTURAL: SUBTERRANEAN TERMITES



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STRUCTURAL: DAMPWOOD TERMITES



MANAGEMENT: TERMITES

Key Points

- ✘ Avoid wood-to-soil contact
- ✘ Ventilate under buildings
- ✘ Install moisture barrier
- ✘ Remove wood debris
- ✘ Fix moisture problems
- ✘ Periodic inspection
- ✘ If subterranean termites, hire pest control company



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ANT VS. TERMITE



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STRUCTURAL: BORERS

golden buprestid



- ✘ About 1/2"
- ✘ Air-dried lumber
- ✘ Emerges 10-50 yrs later
- ✘ Doesn't re-infest

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STRUCTURAL: POWDERPOST BEETLES



(Ken Gray Photos ©2012)



- ✘ About 1/8"
- ✘ Hardwoods
- ✘ Powdery frass
- ✘ Exit hole 1/16"
- ✘ Re-infests
- ✘ Rx: Paint; varnish

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SUMMARY

- ✘ Guidelines & Principles
- ✘ Groups of pests
 - Public health pests
 - Nuisance
 - Household
 - Structural pests

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