UF | IFAS Extension
UNIVERSITY of FLORIDA

What is a Bug?

FLORIDA FIRST DETECTOR

Build-a-Bug Activity

- Introduction to some of the pest groups
- Match the insect pieces to the insect body
- Place the completed insects on the correct damage

What is an insect?

- Exoskeleton
- Six Legs
- Three body segments
- Jointed appendages
- One pair of antennae
- Wings (usually)

Scorpion: Pedro Sánchez, Wikimedia under CC 3.0, Lobster: Wikimedia, public domain , Spider: Wikimedia, public domain, Mouthpart: Whitney Cranshaw, Colorado State University, Bugwood UGA5210073

Order Orthoptera: Grasshoppers, mole crickets etc

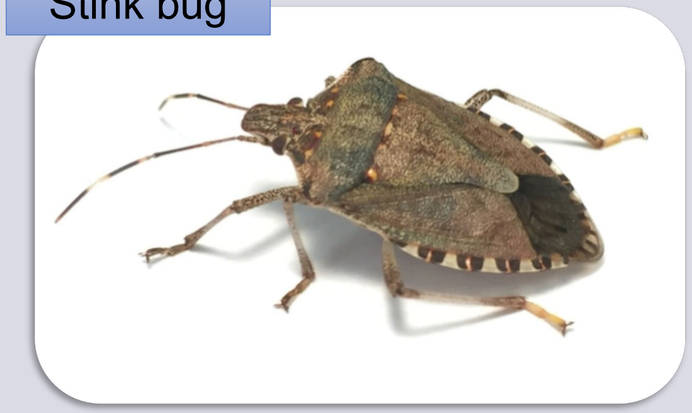
- Grasshoppers + Katydids
  - Membranous wings
  - Saltatorial legs (jumping legs)
  - Long, thread-like antennae
  - Mandibles
- Mole crickets
  - Fossorial (digging legs)

Flying grasshopper: Whitney Cranshaw, Colorado State University, Bugwood.org 5188058, Green grasshopper: Edward L. Manigault, Clemson University Donated Collection, Bugwood 1225086, Black grasshopper: Joseph Berger, Bugwood.org 5386112, Mole cricket: Edward L. Manigault, Clemson University Donated Collection, Bugwood.org 1225074

Order Hemiptera:
Stink bugs, aphids, mealybugs, whiteflies, scales

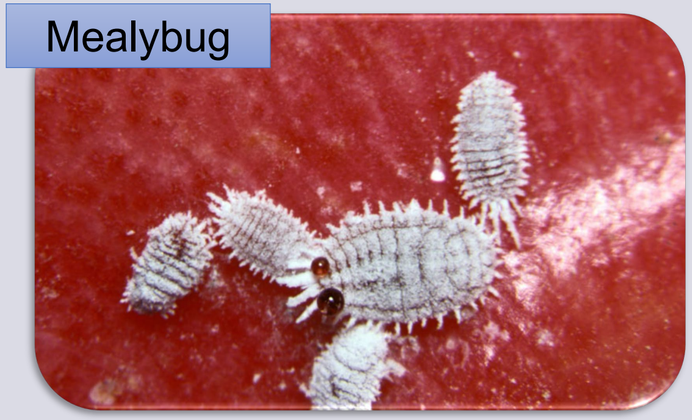
- All have a stylet
- Stink bugs
  - Hemelytra
  - Scutellum (triangle)
  - 5-segmented antennae
- Aphids
  - Cornicles
  - Honeydew
  - Long antennae
- Mealybug
  - Honeydew
  - Covered in white wax
  - Legs, still mobile, unlike scales

Stink bug

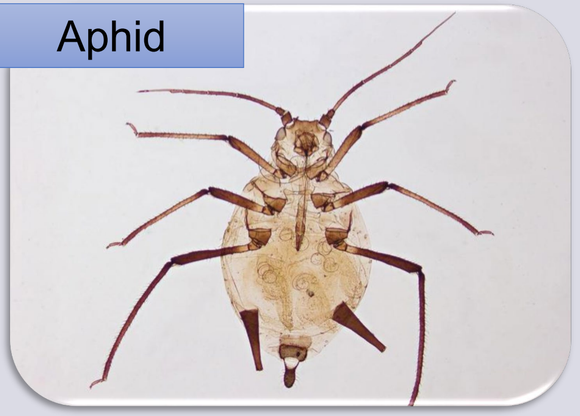


Aphid

Mealybug



Aphid



Mealybug: USDA Agricultural Research Service, Bugwood.org #1265116, Stink bug: Kristie Graham, USDA ARS, Bugwood.org 5549916, Aphid: Jim Baker, North Carolina State University, Bugwood.org 1549263, Pest and Diseases Image Library , Bugwood.org 5466089

Thysanoptera: Thrips

- Thrips
  - “Rasping” Mouthparts
    - Mix of mandibles and stylet
  - Fringed wings
  - Cone-like end with hairs

Photo: (Left) Alton N. Sparks, Jr., University of Georgia, Bugwood.org 1327077, (Right) Jack T. Reed, Mississippi State University, Bugwood.org 5370035

Order Lepidoptera: Moths and Butterflies

- Caterpillars
  - Hard head capsule
  - Mandibles
  - Prolegs
- Hornworms
  - Horn on the end
- Papillionidae (Swallowtail)
  - Osmeterium, antennae-like projections

Armyworm: Frank Peairs, Colorado State University, Bugwood.org 1481002, Hornworm: R.J. Reynolds, Tobacco Company, Bugwood.org 1402126, Swallowtail larva: Susan Ellis, Bugwood.org 1366082

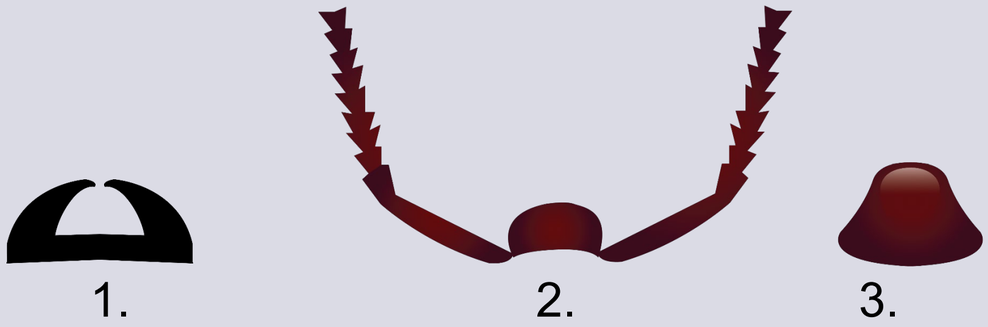
Order Coleoptera: Beetles

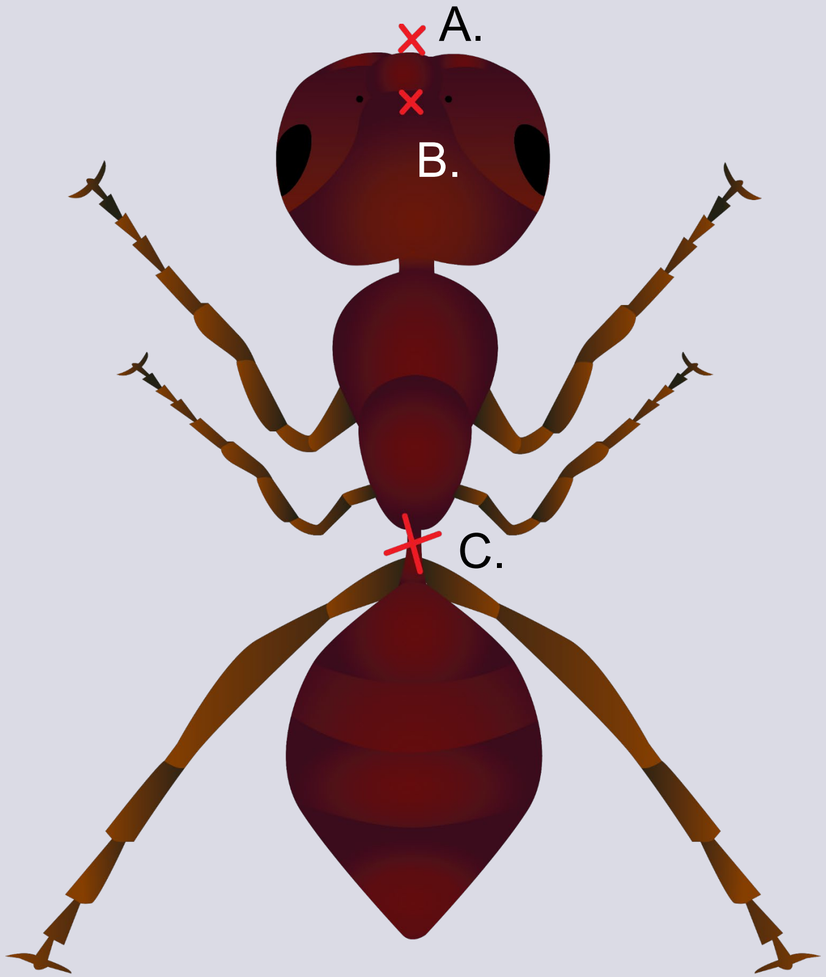
- Beetles
  - Mandibles
  - Elytra
- Weevils
  - Long “snout”
  - Elbowed Antennae

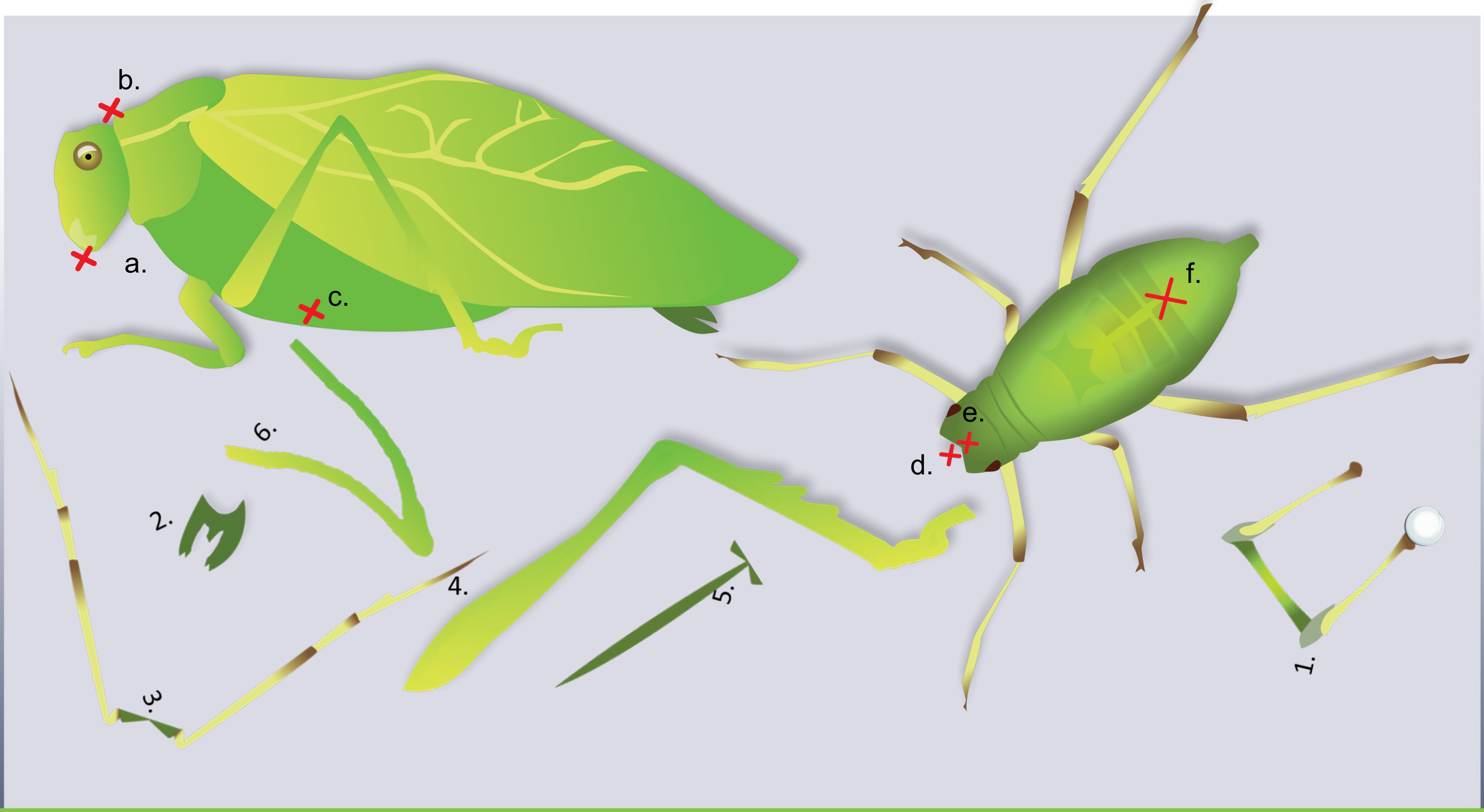
Weevil: Anyi Mazo-Vargas, University of Puerto Rico, Bugwood.org 5411207, Colorado potato beetle: David Cappaert, Bugwood.org 5178040

Demonstration

- You will have 2-3 bugs on screen, and as a team, match the bug parts with the correct bug







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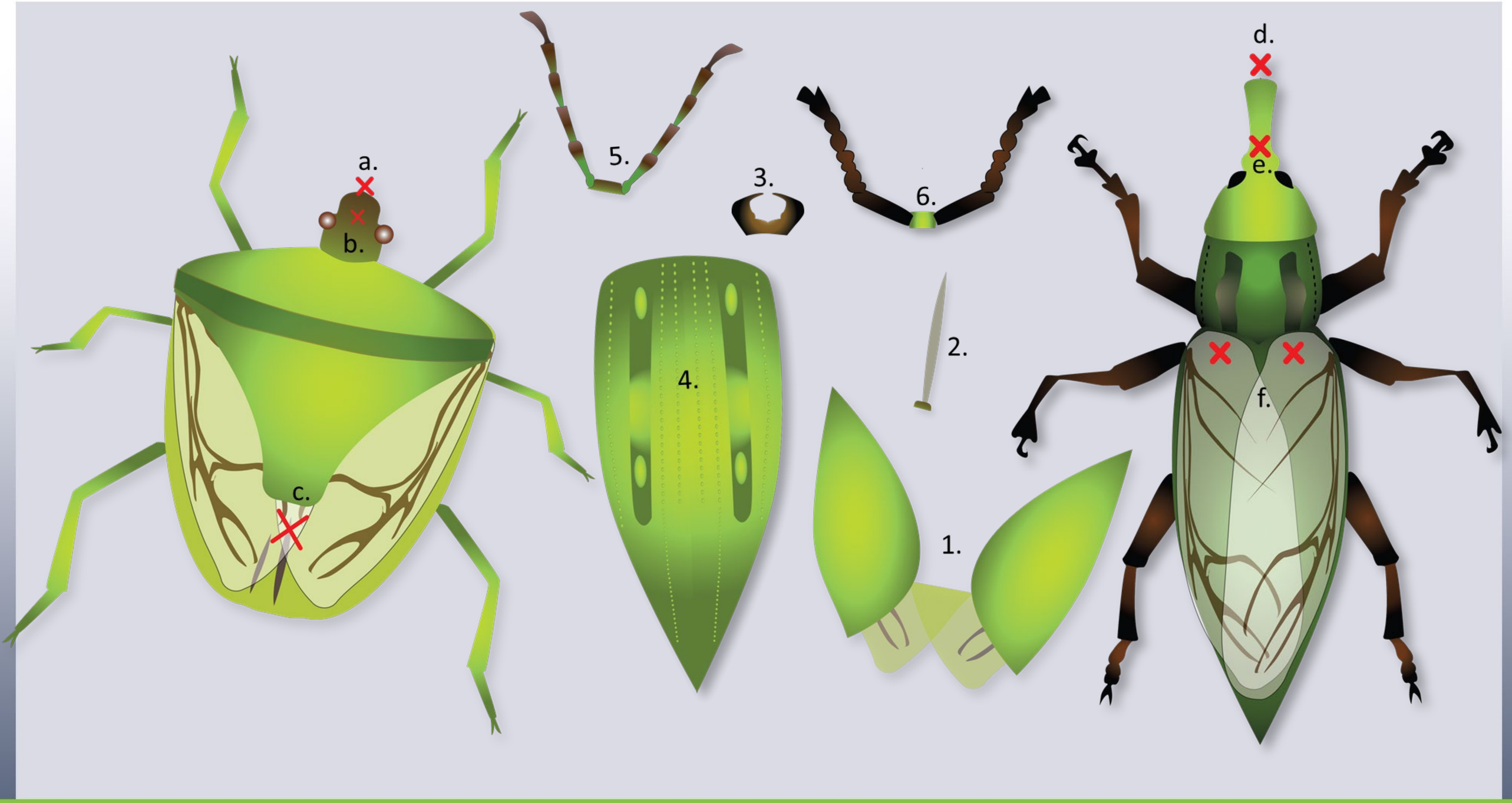

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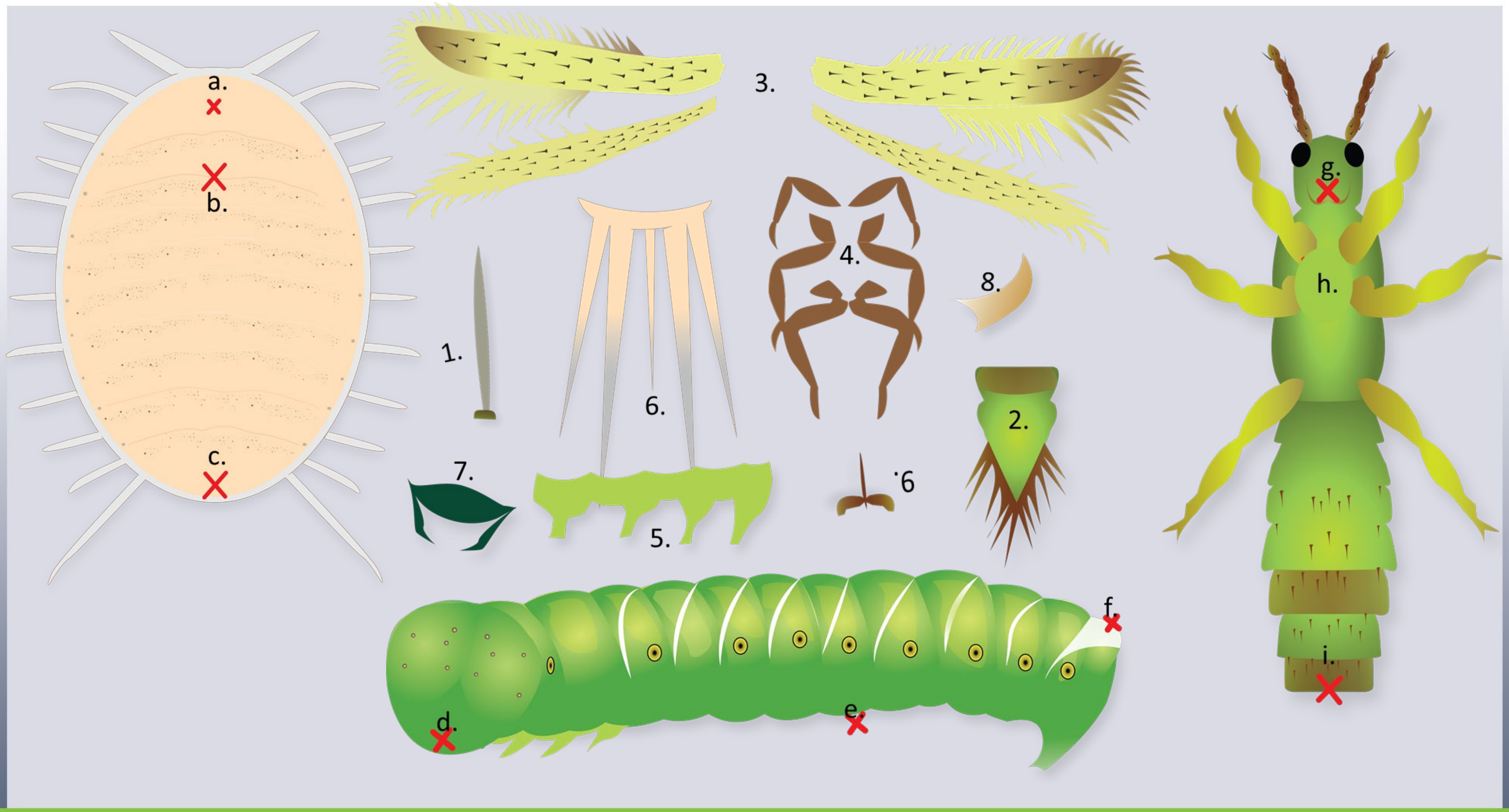

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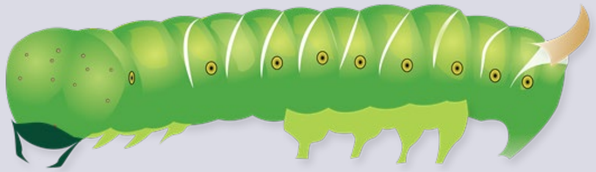
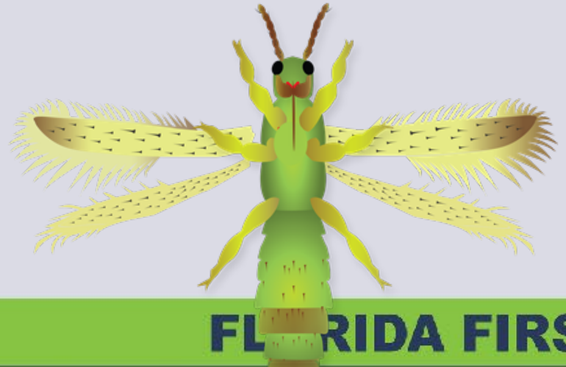
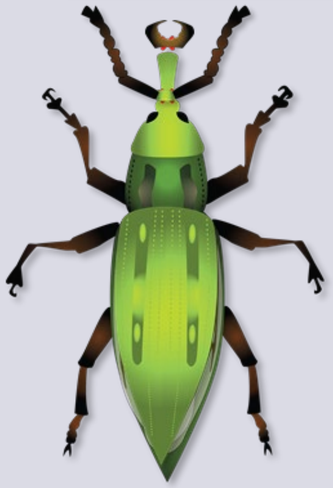
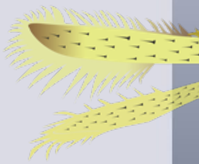
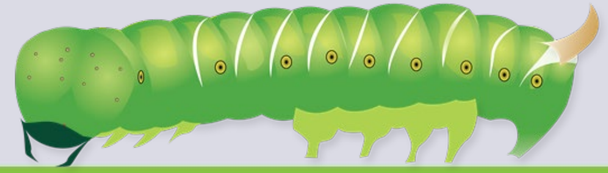










FLORIDA FIRST DETECTOR

Reporting to UF/IFAS Faculty in Florida

- Local county extension office

https://sfyl.ifas.ufl.edu/find-your-local-office/

- Insect ID Lab - Dr. Lyle Buss

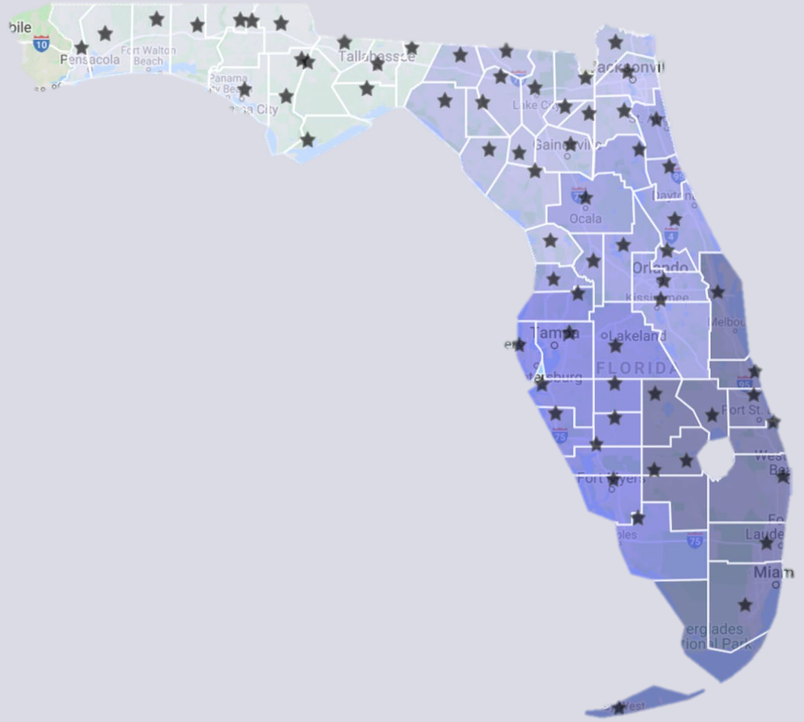
http://entnemdept.ufl.edu/insectid/

- Nematode Diagnostic Lab - Dr. Billy Crow

http://nematology.ifas.ufl.edu/assaylab/index.html

- Plant Diagnostic Center - Dr. Carrie Harmon

https://plantpath.ifas.ufl.edu/extension/plant-diagnostic-center/



Reporting to FDACS-DPI in Florida

Florida Department of Agriculture and Consumer Services (FDACS) - Division of Plant Industry (DPI)

- FDACS, DPI Responsibility
  - Announcing detection or establishment of new invasive species.
  - Reporting is a legal obligation under Florida Statute 581.091.
- Submission Form
  - http://forms.freshfromflorida.com/08400.pdf
  - https://www.fdacs.gov/Agriculture-Industry/Pests-and-Diseases/How-to-Submit-a-Sample-for-Identification

FDACS, DPI Contact

- Dr. Leroy Whilby, Bureau Chief-Entomology, Nematology and Plant Pathology
  - 352-395-4661
  - Leroy.whilby@freshfromflorida.com
- Dr. Paul Skelley, Assistant Chief-Entomology, Nematology and Plant Pathology
  - 352-395-4678
  - Paul.skelley@freshfromflorida.com
- Division of Plant Industry Hotline
  - 1-888-397-1517
  - DPIHelpline@FDACS.gov

Reporting using DDIS in Florida

Digital Diagnostic and Identification System (DDIS)

- Digital Diagnostic Collaboration
  - Extension agents
  - Laboratories
  - Clinics
  - Specialists
- https://ddis.ifas.ufl.edu/

Find More Information At:

https://entnemdept.ufl.edu/ffd/

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Collaborating Agencies

- U.S. Department of Agriculture Animal and Plant Health Inspection Service (USDA-APHIS)
- Cooperative Agricultural Pest Survey Program (CAPS)
- Florida Department of Agriculture and Consumer Services (FDACS)
- National Plant Diagnostic Network (NPDN)
- Sentinel Plant Network (SPN)
- University of Florida Institute of Food and Agricultural Sciences (UF-IFAS)
- Protect U.S.

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