

# Basic Insect Identification

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Insekto ba  
ako?



Ako?





Eh ako?



Photos by Rivera 2008

# Arthropods

- Invertebrate animals
- Exoskeleton (external skeleton)
- Segmented body
- Jointed appendages

Arthron + podos = Joint + leg (or foot)

# Insects differ from other arthropods by:

## **BODY REGIONS**

Insects: divided into 3

- Head
- Thorax
- Abdomen

Others: divided into 2 (or more than 3)

- Cephalothorax
- Abdomen

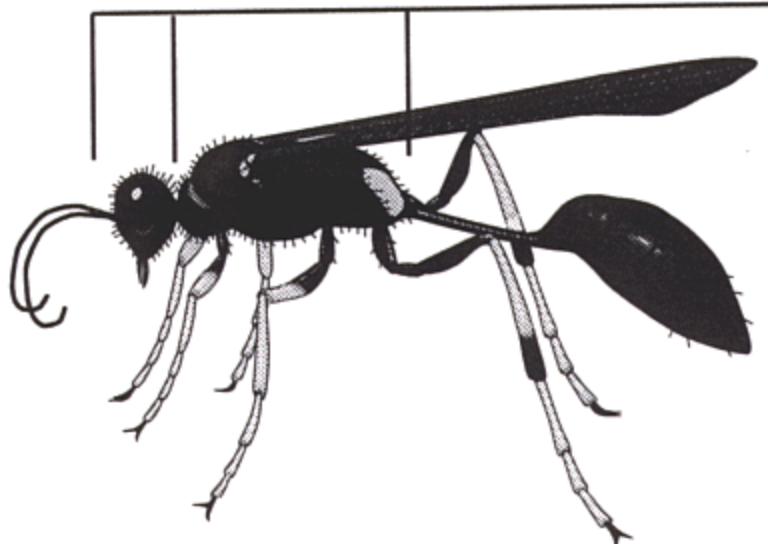
Insects differ from other arthropods by:

### **NUMBER OF LEGS**

Insects: 3 pairs

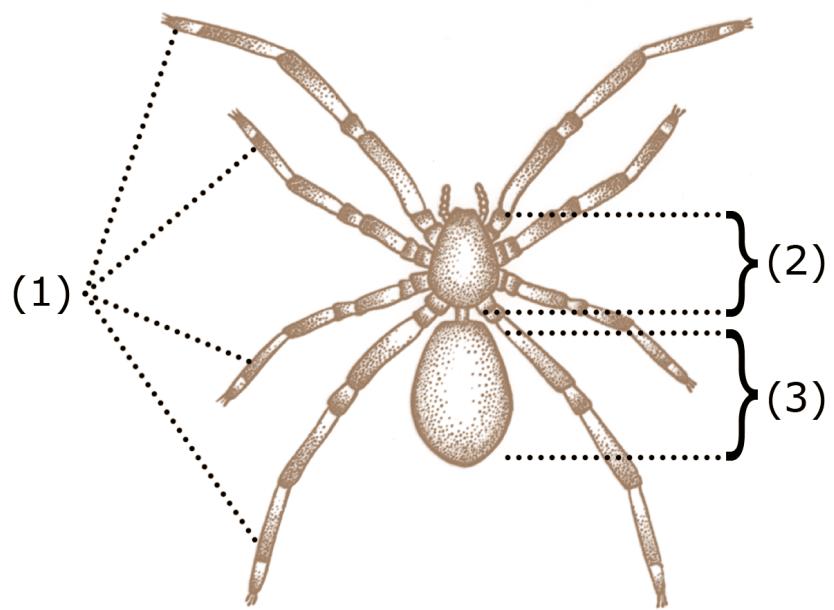
Others: 4 pairs or moooooore

head      thorax      abdomen



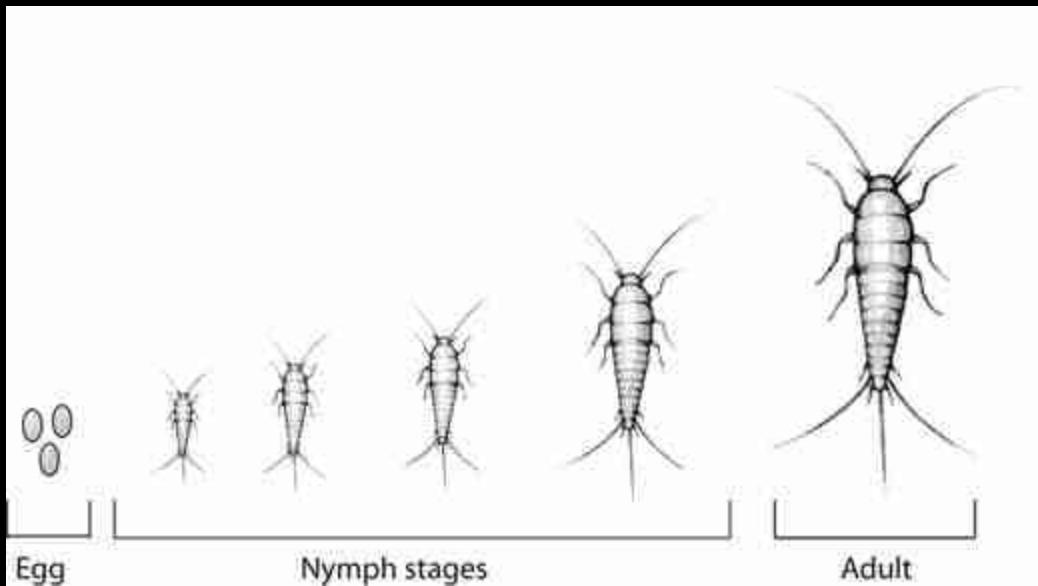
insect

arachnid



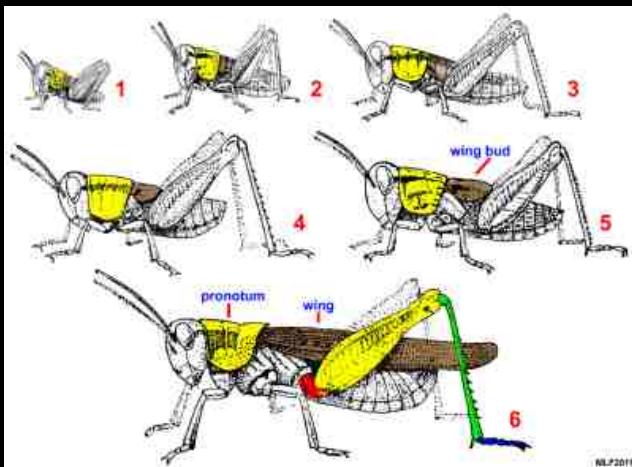
# Insect Life Cycle Models

- Ametabolous (no- metamorphosis)
  - immature forms resemble adults



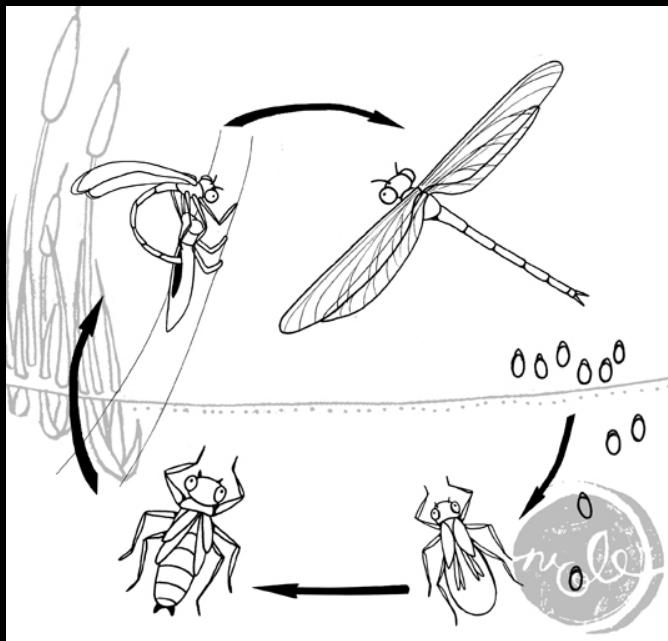
# Insect Life Cycle Models

- Paurometabolous (incomplete metamorphosis)
  - 3 major stages: egg>nymph>adult
  - immature forms resemble adults
  - immature has wing pads



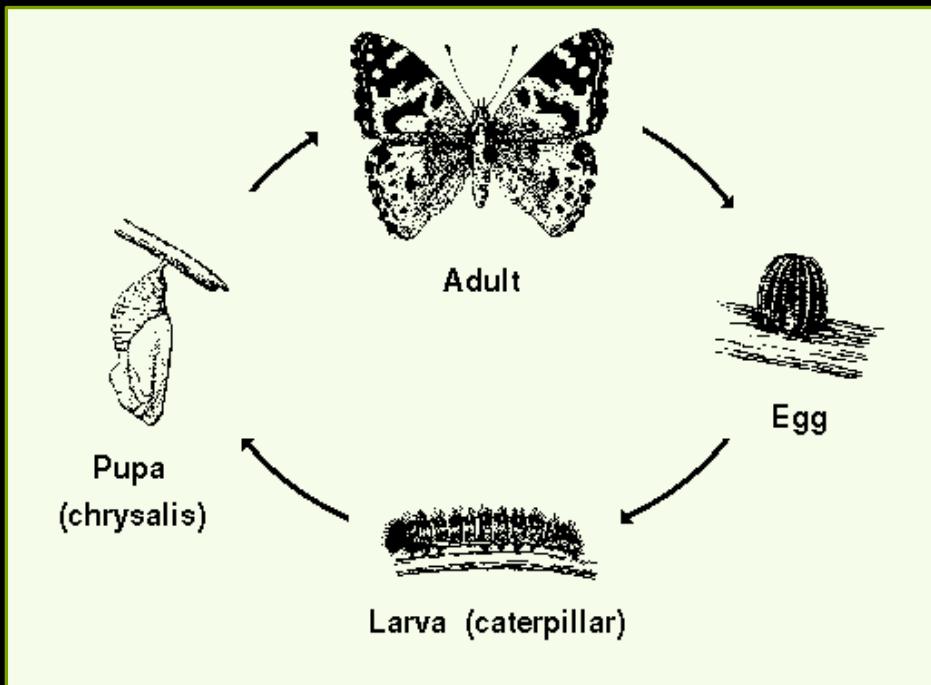
# Insect Life Cycle Models

- Hemimetabolous (Gradual metamorphosis)
  - immature forms do not resemble adult

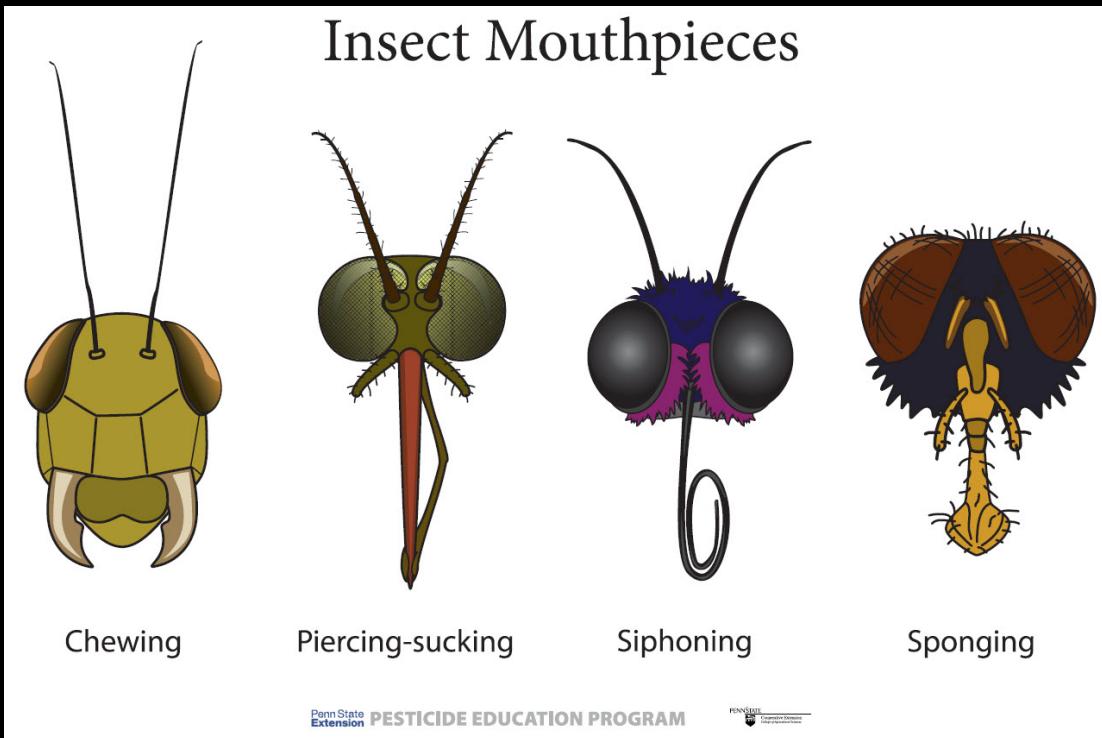


# Insect Life Cycle Models

- Holometabolous (Complete metamorphosis)  
-4 distinct life stages: egg>larva>pupa>adult

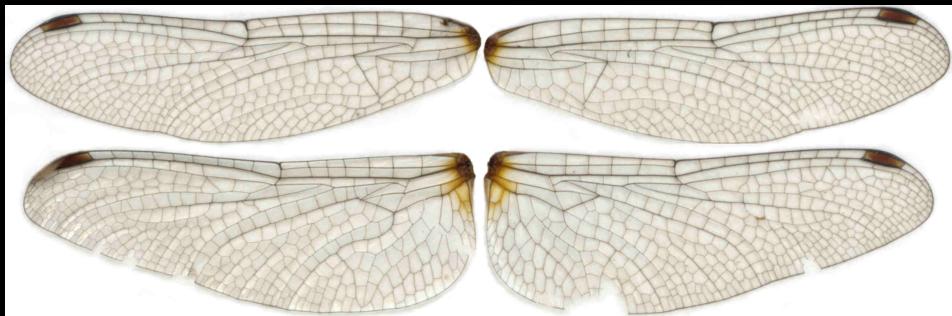


# Types of mouthparts



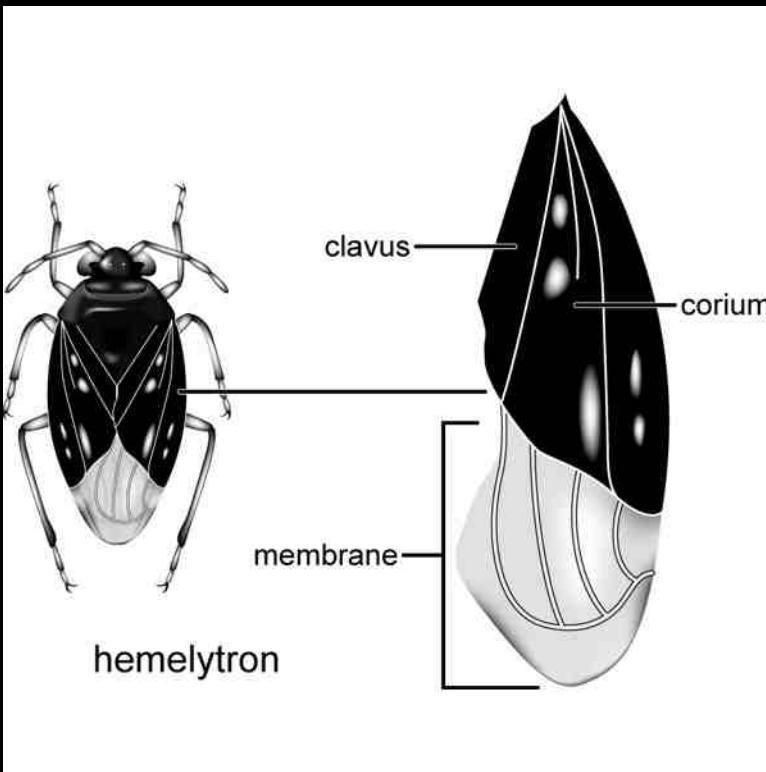
# Types of wings

1. Membranous – light membrane covering



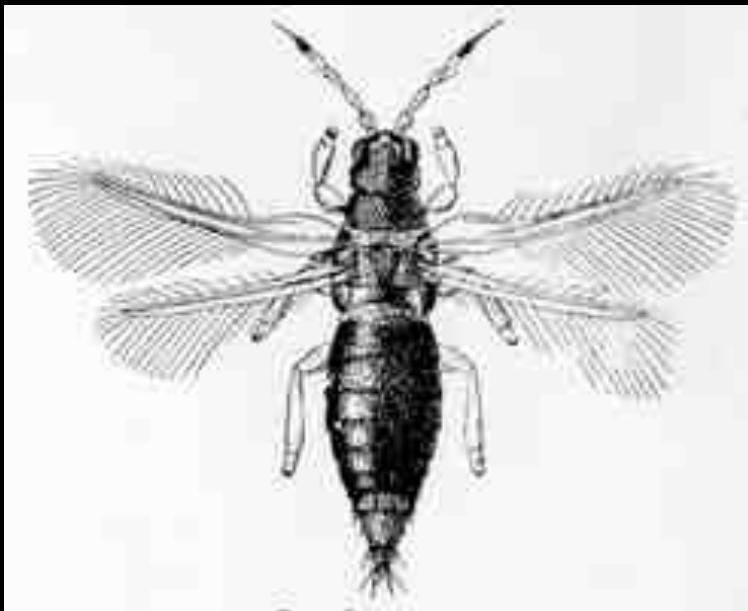
# Types of wings

2. Hemelytra – half membranous, half leathery



# Types of wings

3. Fringed wing – hairy fringes



# Types of wings

4. Leathery – thicker than membranous wings

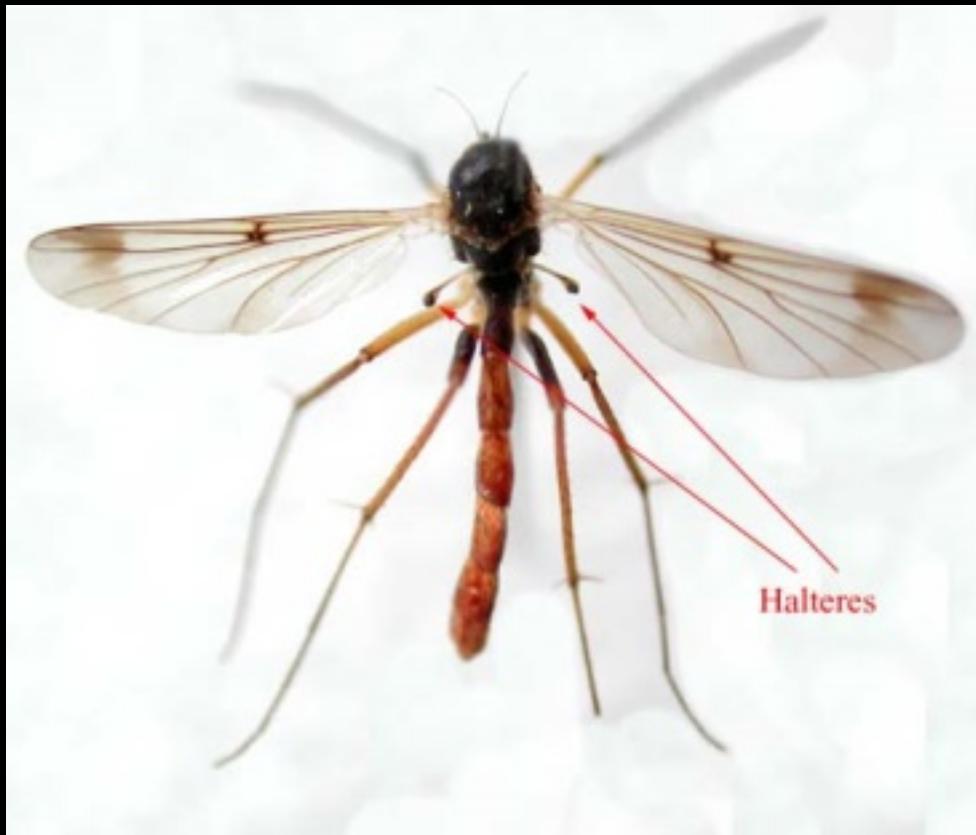


# Types of wings

5. Elytra – hard covering



# Specialized hind wing -Haltere



# **Economically Important Insects**

# Order Orthoptera

(grasshoppers, locusts)

Distinguishing characteristics:

- Paurometabolous life cycle
- Chewing mouthparts
- Leathery fore wings and membranous hind wings
- Specialized hind femur for jumping

# Oriental migratory locust



# Order Thysanoptera

(Thrips)

## Distinguishing Characteristics

- Complete metamorphosis
- Fringed wing
- Raspingsucking mouthpart

*Thrips biformis*



Yu Yan-Fen

# Order Hemiptera

(true bugs)

- Paurometabolous
- Sucking mouthparts
- Forewing: hemelytra, Hindwing membranous

Black bug



Rice bug



# Suborder Homoptera

(leafhoppers, planthoppers, mealybugs,  
aphids, scale insects)

- Paurometabolous
- Piercing-sucking mouthparts
- Forewing and hind wing membranous



# Lepidoptera

(moths and butterflies. Larval stage is destructive)

- Holometabolous
- Large membranous wings covered with scales
- Scales give rigidity and color
- Siphoning mouthparts (adult)
- Chewing mouthparts (larva)

# Stemborers



yellow



white



pink



# Cutworms



[http://idtools.org/id/citrus/pests/images/fs\\_image](http://idtools.org/id/citrus/pests/images/fs_image)

*Mythimna separata*



<https://news.uns.purdue.edu/images/2012/obermeyer-armyworm.jpg>



Georg Goerge

*Spodoptera exempta*



UF

# Order Coleoptera

(beetles and weevils)

- Holometabolous
- Forewings are elytron, hind wings are membranous
- Chewing mouthparts

Beetle



Weevil



**Coccinelid**



**Scarab**



UGA1435165

