



Tema 2. Fauna  
entomológica involucrada.  
Características  
morfoanatómicas. Apuntes  
bionómicos.





# FAUNA ENTOMOLÓGICA DE INTERÉS FORENSE



Fuente: Catts & Haskell (1990)

## GRUPOS DE INTERÉS

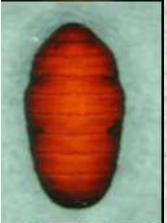
### QUELICERADOS:

Ácaros (Orden Acarida)

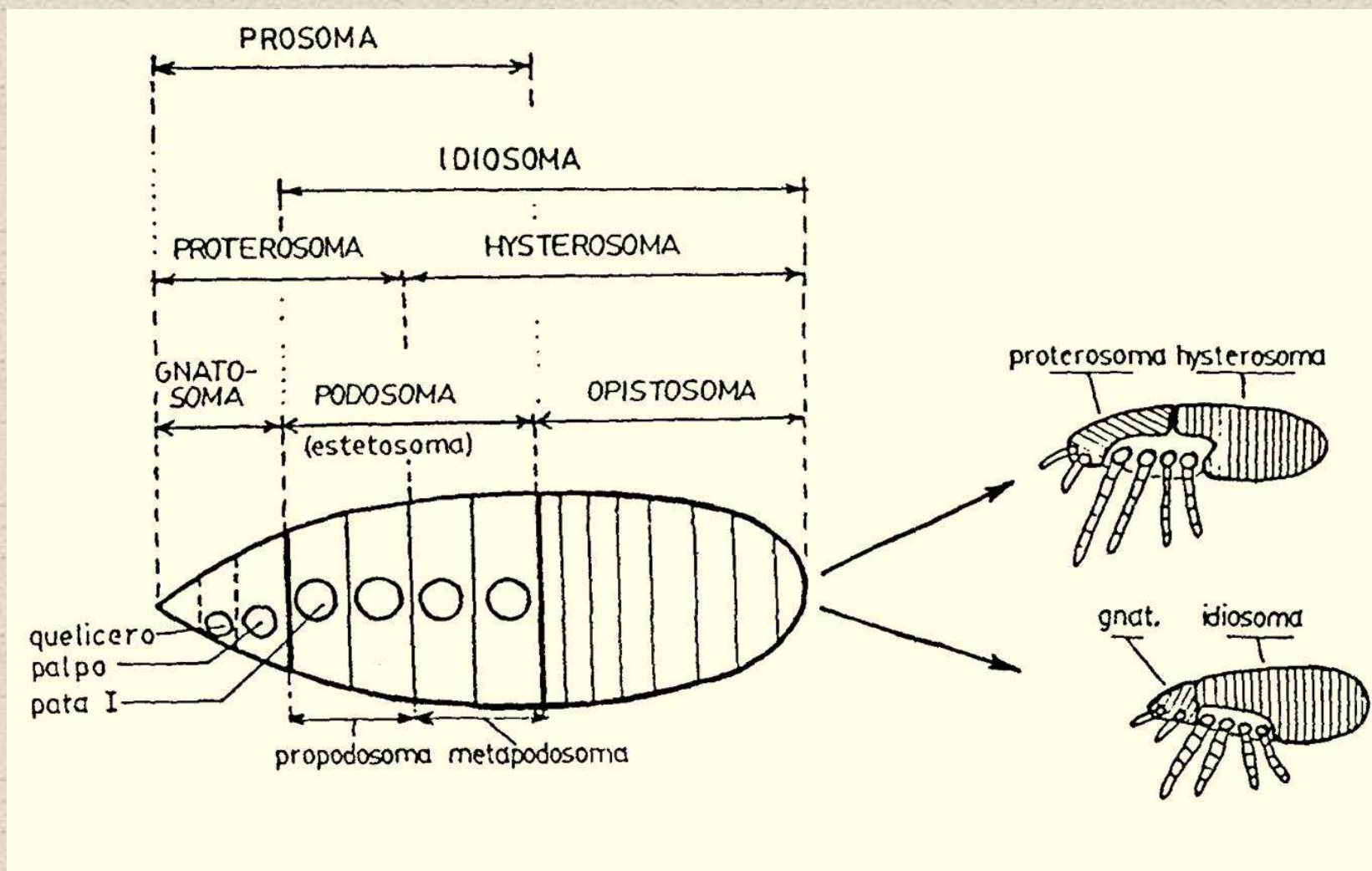
Arañas (Orden Araneida)

Pseudoescorpiones (Orden Pseudoscorpionida)

Escorpiones (Orden Scorpionida)



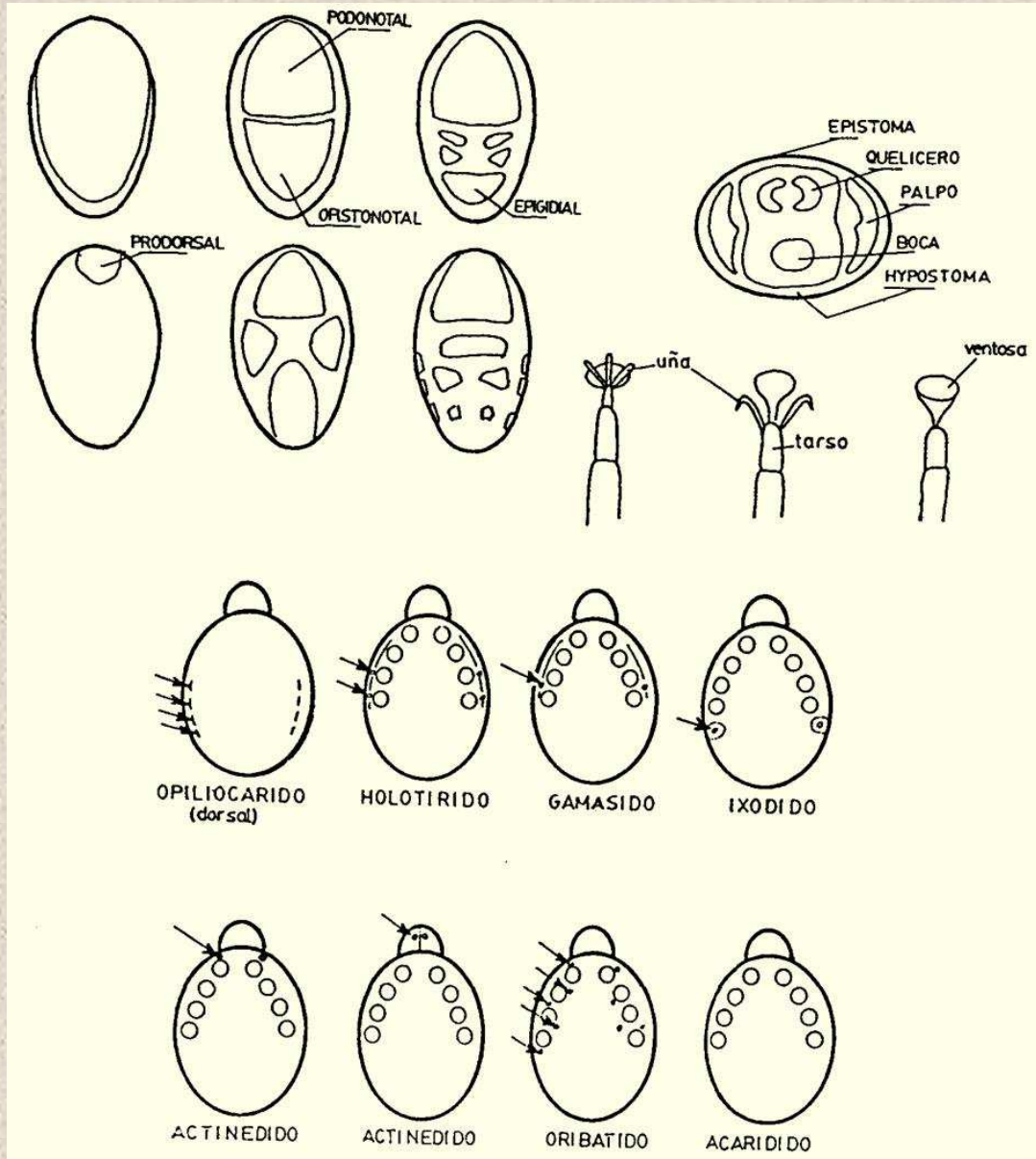
# Ácaros (Orden Acarida)



Fuente: Barrientos (1988)



# Ácaros



Fuente: Barrientos (1988)

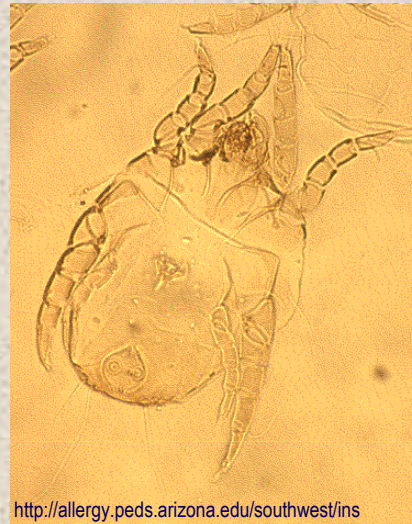


## Tema 2. Fauna entomológica involucrada. Caracteres morfoanatómicos. Apuntes bionómicos.

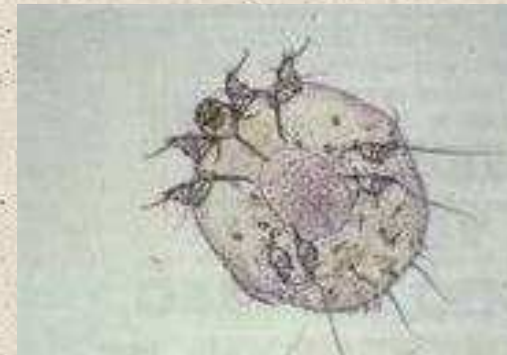
### Ácaros



© Clouds Hill Imaging/www.lastrefuge.co.uk



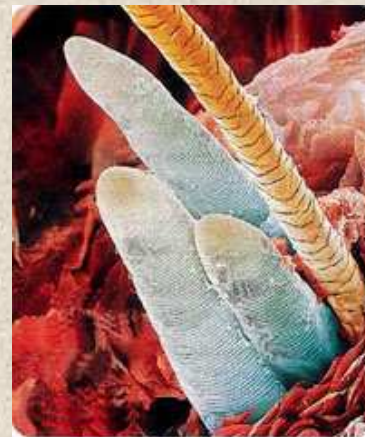
<http://allergy.peds.arizona.edu/southwest/inspects/images/dptero1.gif>



[http://1.bp.blogspot.com/\\_MAEEXK4WoHg/SdNDJixhUzI/AAAAAAAAAM8/Mb0nsciBRBE/s200/sama+1.jpg](http://1.bp.blogspot.com/_MAEEXK4WoHg/SdNDJixhUzI/AAAAAAAAAM8/Mb0nsciBRBE/s200/sama+1.jpg)



Fuente: [http://www.jashbotanicals.com/images/demodex\\_folliculorum\\_1.jpg](http://www.jashbotanicals.com/images/demodex_folliculorum_1.jpg)

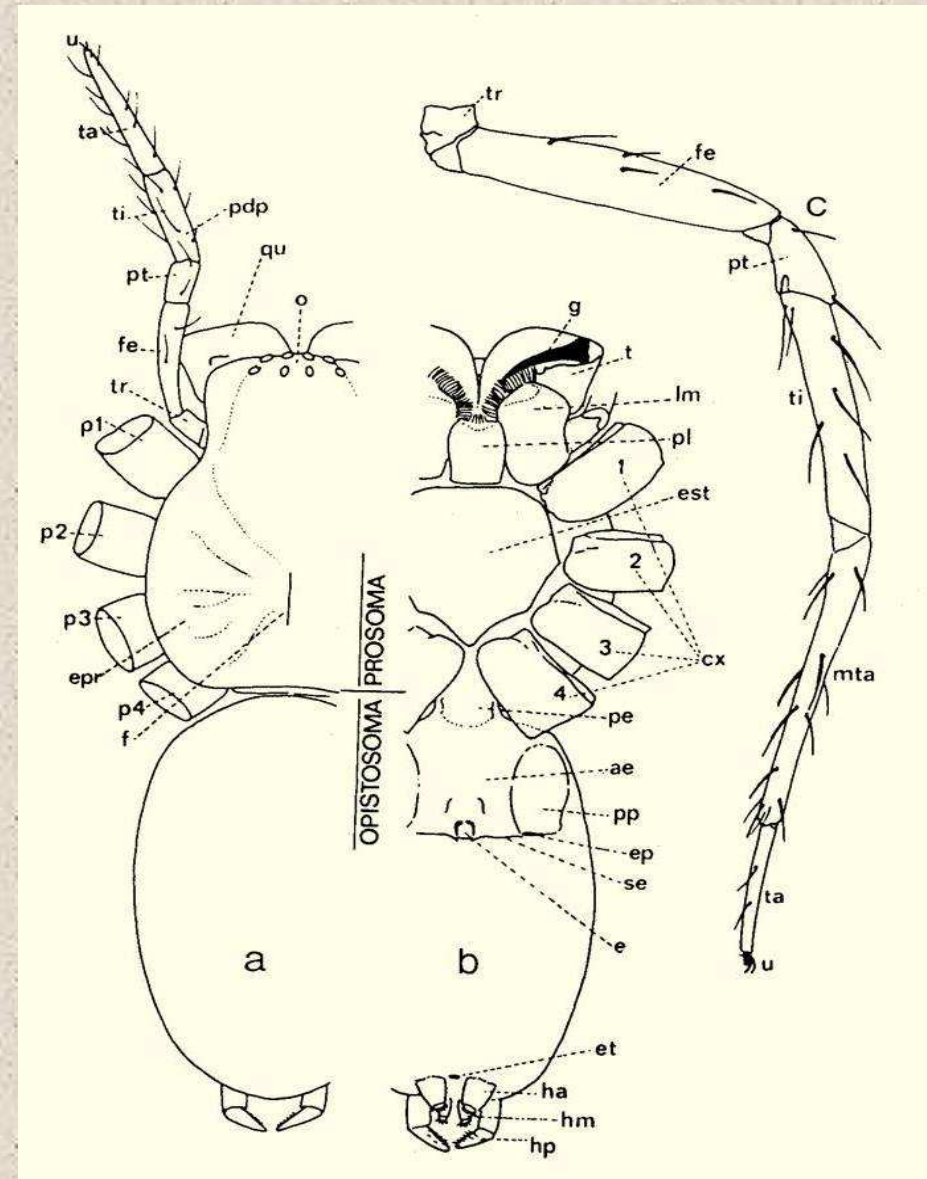


<http://www.mascotas.org/wp-content/uploads/garrapata.jpg>

## Arañas (Orden Araneida)

### Caracteres:

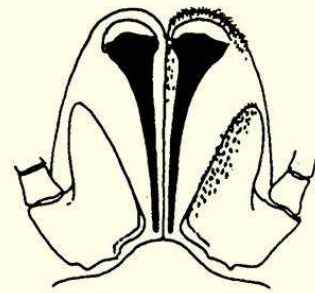
- \* Disposición de los quelíceros
- \* Ojos (disposición, número)
- \* Hileras, cribelo, calamistro
- \* Pilosidad, espinulación
- \* Uñas tarsales
- \* Orificios respiratorios
- \* Genitalia



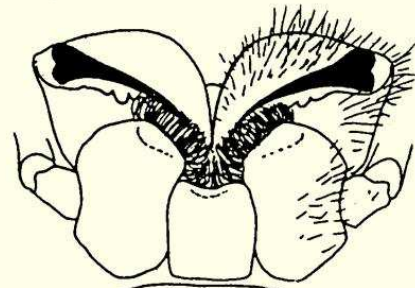
Fuente: Barrientos (1988)



**Arañas**

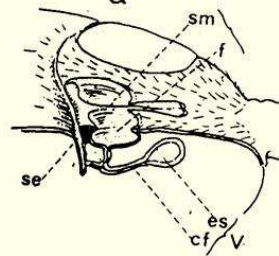


**Ortognata**

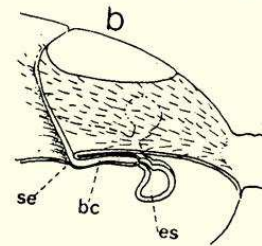


**Labidognata**

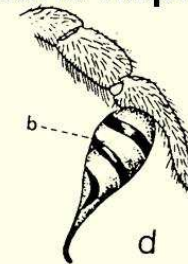
**hembra Entelegina**



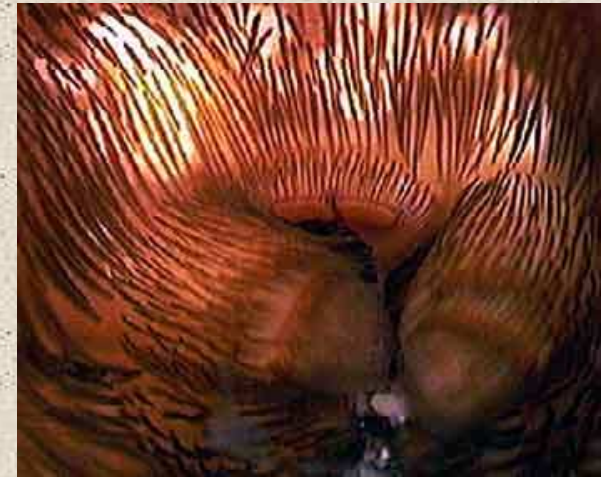
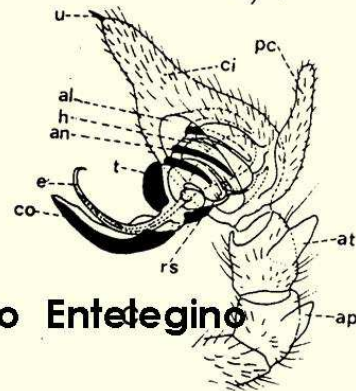
**hembra Haplogina**



**macho Haplogino**

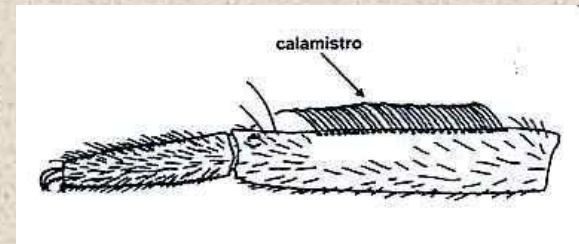


**macho Entelegino**



Fuente: <http://www.portalsaofrancisco.com.br/alfa/filo-artropodes/imagenes/aranhas-16.jpg>

**Cribelo**



Fuente: <http://www.larruecadedearacne.es/morfologia.htm>

**Calamistro**

Fuente: Adaptado de Barrientos (1988)



## Tema 2. Fauna entomológica involucrada. Caracteres morfoanatómicos. Apuntes bionómicos.

### Arañas



Fuente: [http://www.afpmb.org/pubs/Field\\_Guide/Images/originals/Fig.%2019.jpg](http://www.afpmb.org/pubs/Field_Guide/Images/originals/Fig.%2019.jpg)

### *Tegenaria*



Fuente: [http://www.afpmb.org/pubs/Field\\_Guide/Images/originals/Fig.%2011.JPG](http://www.afpmb.org/pubs/Field_Guide/Images/originals/Fig.%2011.JPG)

### *Loxosceles*



Fuente: [http://www.afpmb.org/pubs/Field\\_Guide/Images/originals/Fig.%2028.jpg](http://www.afpmb.org/pubs/Field_Guide/Images/originals/Fig.%2028.jpg)

### *Argiopidae*



Fuente: [http://www.afpmb.org/pubs/Field\\_Guide/Images/originals/Fig.%202.jpg](http://www.afpmb.org/pubs/Field_Guide/Images/originals/Fig.%202.jpg)

### *Latrodectes*



### *Lycosidae*

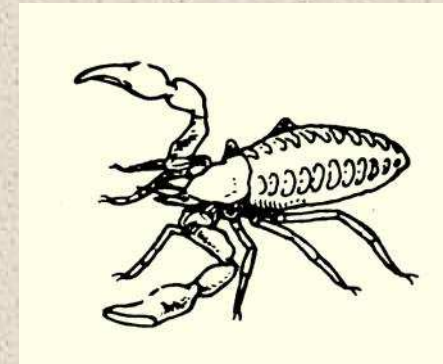
Fuente: [http://www.afpmb.org/pubs/Field\\_Guide/Images/originals/Fig.%2030.jpg](http://www.afpmb.org/pubs/Field_Guide/Images/originals/Fig.%2030.jpg)



## Pseudoescorpiones (Orden Pseudoscorpionida)

**Caracteres:**

- \* Forma del escudo prosómico
- \* Ojos (presencia, número)
- \* Pinzas pedipalpos: tricobotrios, dientes y glándulas de veneno



Fuente: Catts & Haskell (1990)



## Escorpiones (Orden Scorpionida)

### Caracteres:

- \* Dedo móvil de los pedipalpos
- \* Forma del esternón y opérculo genital
- \* Peines (número de láminas,...)
- \* Tricobotrios, ornamentación



*Buthus*

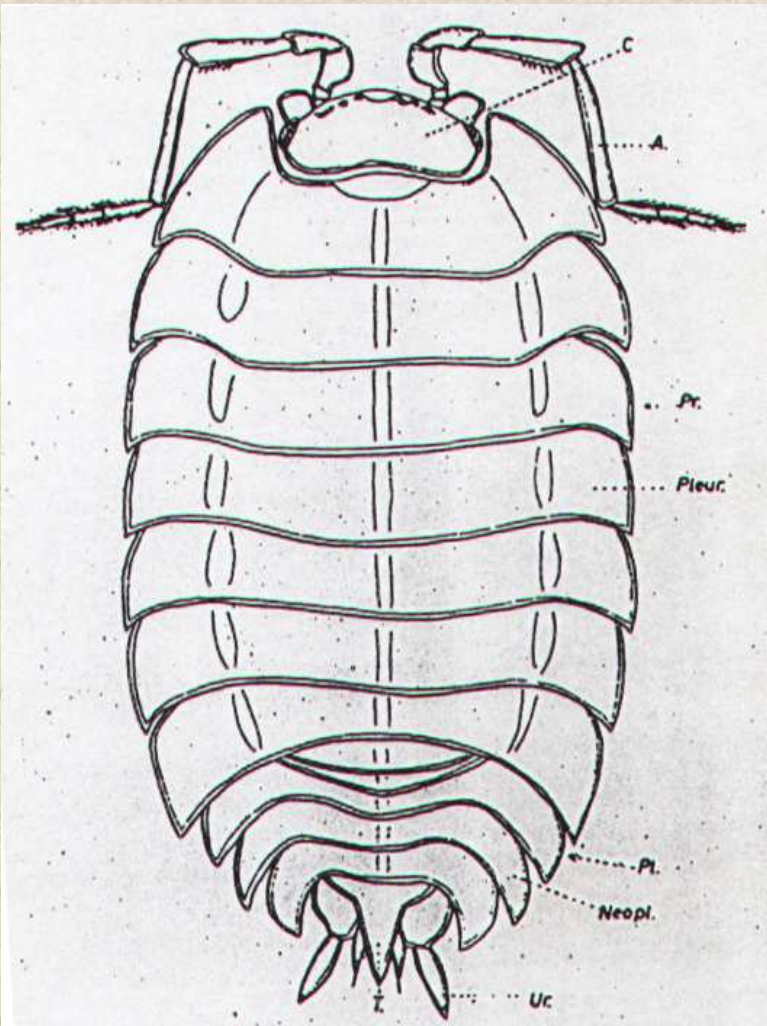


Fuente: [http://www.afpmb.org/pubs/Field\\_Guide/Images/originals/Fig.%2044.jpg](http://www.afpmb.org/pubs/Field_Guide/Images/originals/Fig.%2044.jpg)

*Euscorpilus*

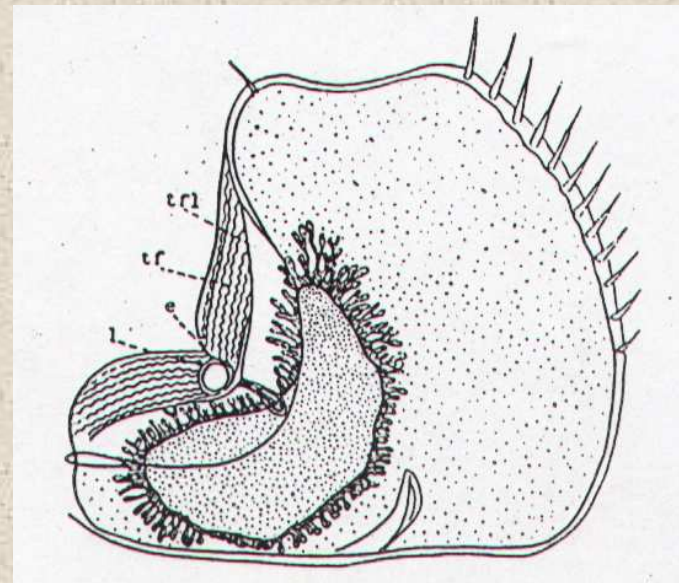


## Isópodos terrestres (Orden Isopoda)



### Caracteres:

- \* Morfología segmentos pereopodales
- \* Segmentos del pleon
- \* Forma del pleotelson
- \* Urópodos
- \* Pseudotráqueas,...

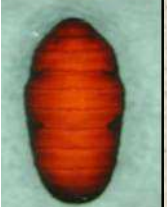


## GRUPOS DE INTERÉS

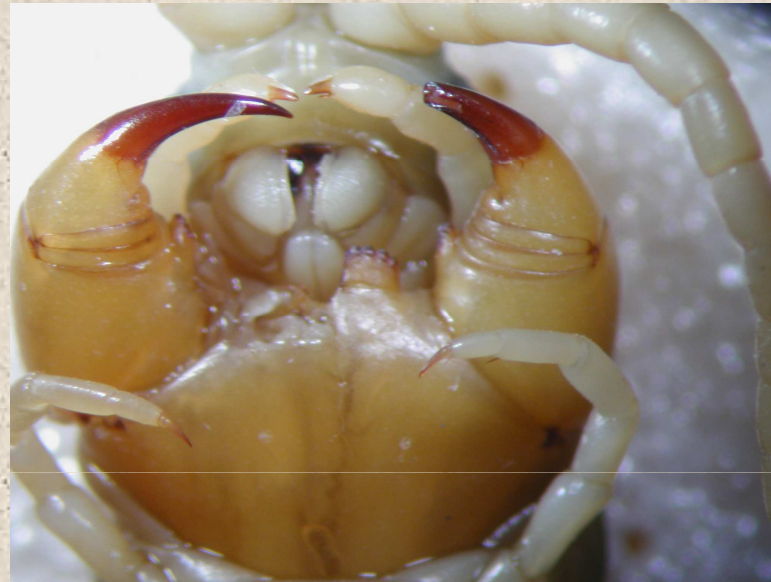
### MIRIÁPODOS:

Ciempíes (Chilopoda)

Milpiés (Diplopoda)



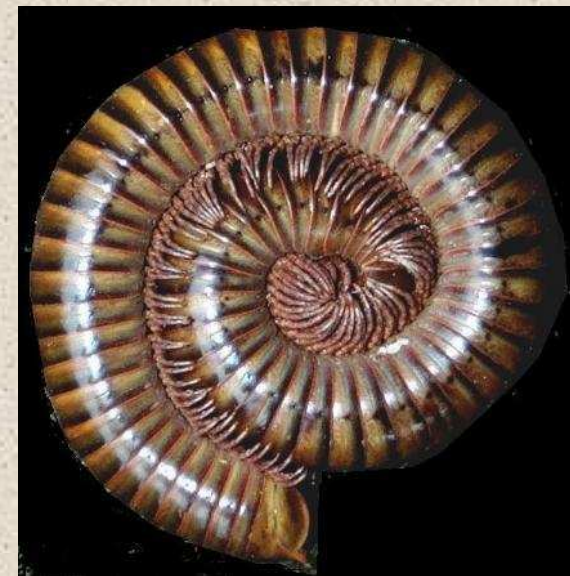
## Ciempíes (Chilopoda)



## Milpiés (Diplopoda)



Fuente: [http://www.afpmb.org/pubs/Field\\_Guide/Images/originals/Fig.%20224.jpg](http://www.afpmb.org/pubs/Field_Guide/Images/originals/Fig.%20224.jpg)



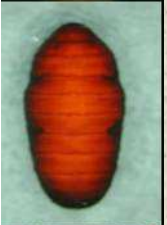
Fuente: [http://www.afpmb.org/pubs/Field\\_Guide/Images/originals/Fig.%20223.jpg](http://www.afpmb.org/pubs/Field_Guide/Images/originals/Fig.%20223.jpg)

GRUPOS DE INTERÉS

INSECTOS







# INSECTOS

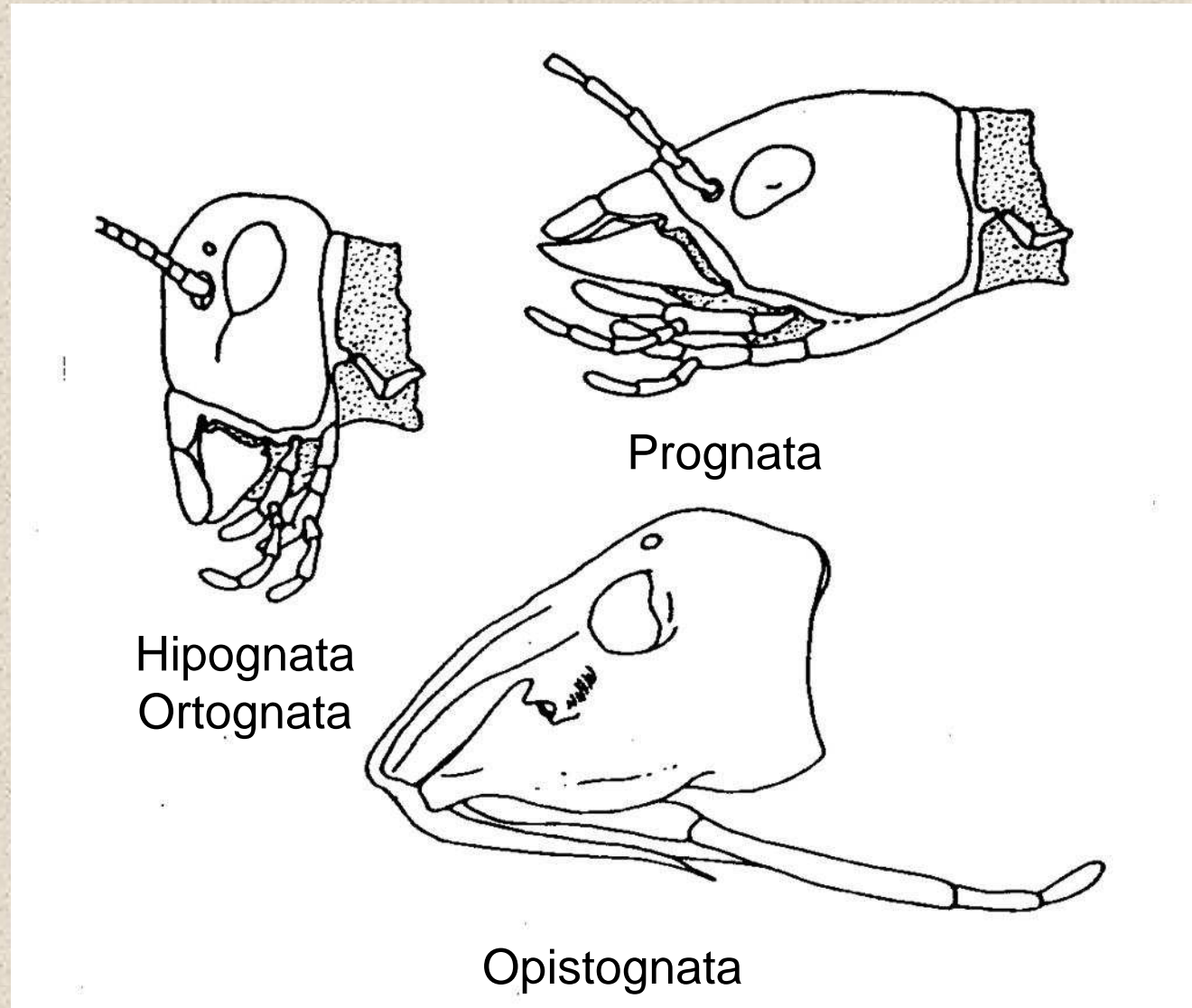
## Generalidades

3 Tagmas corporales:

- \* Cabeza
- \* Tórax
- \* Abdomen

# INSECTOS

## Cabeza



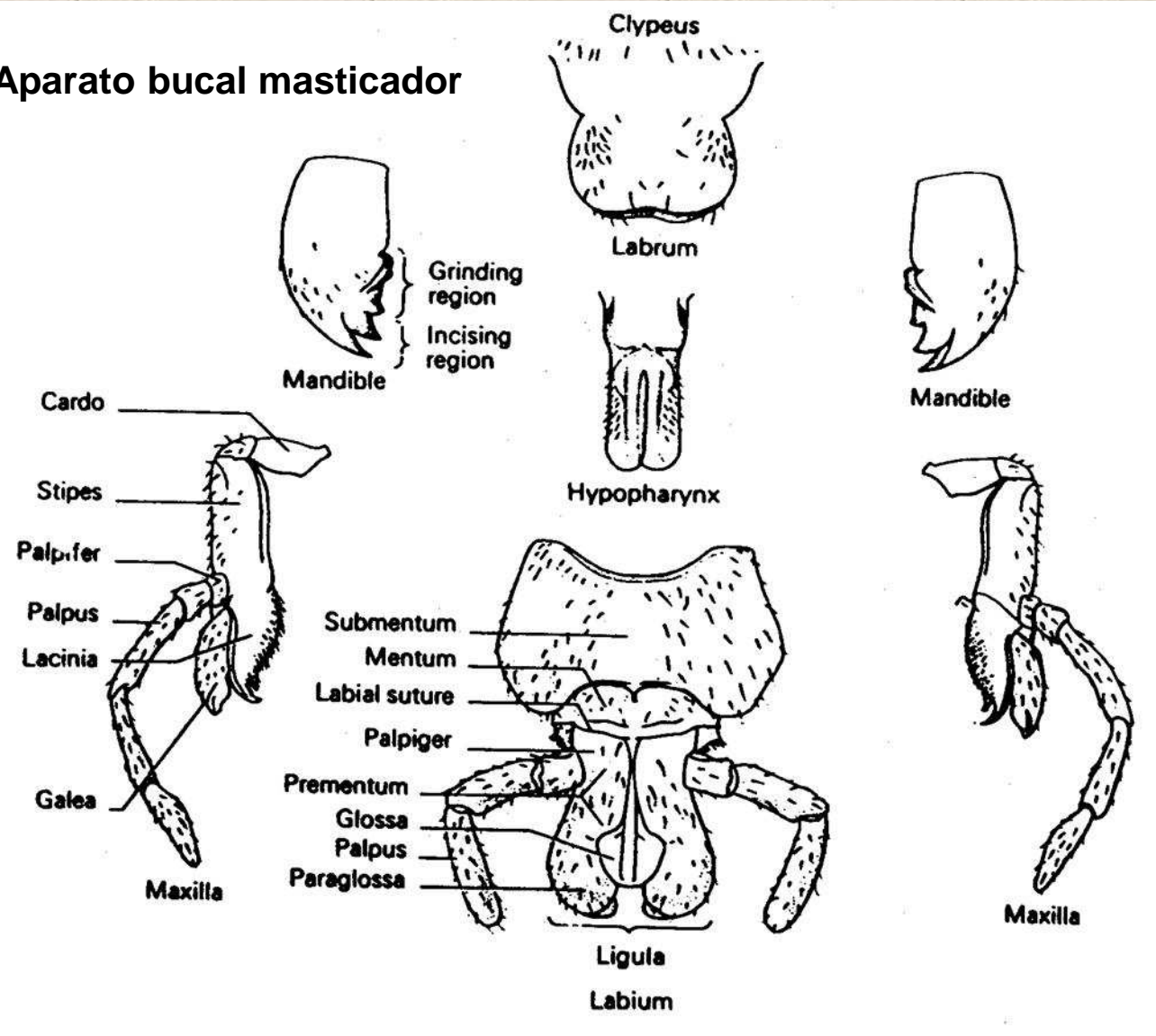
Fuente: De la Fuente (1994)



# INSECTOS

## Cabeza

### Aparato bucal masticador

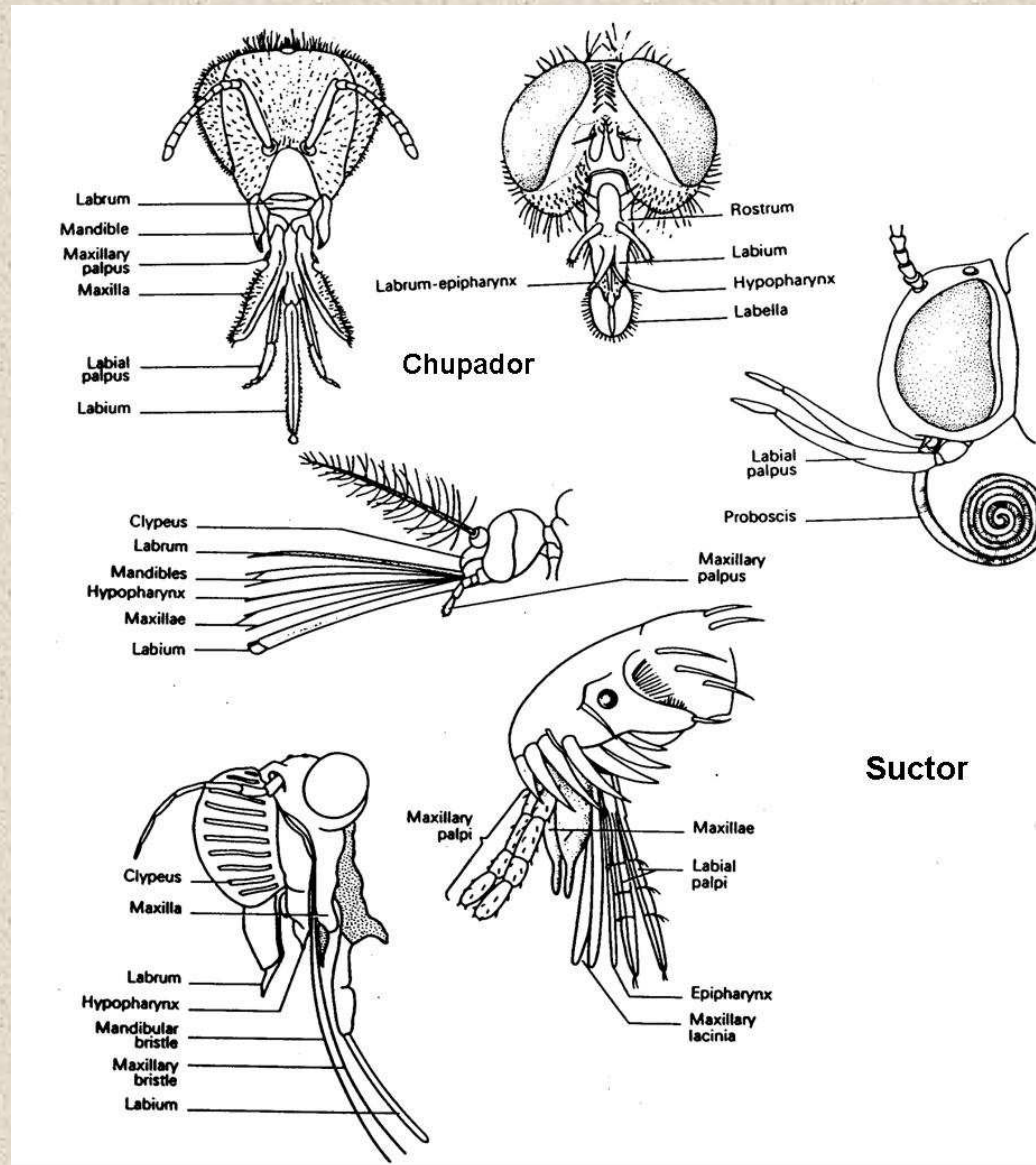


Fuente: Romoser (1973)



# INSECTOS

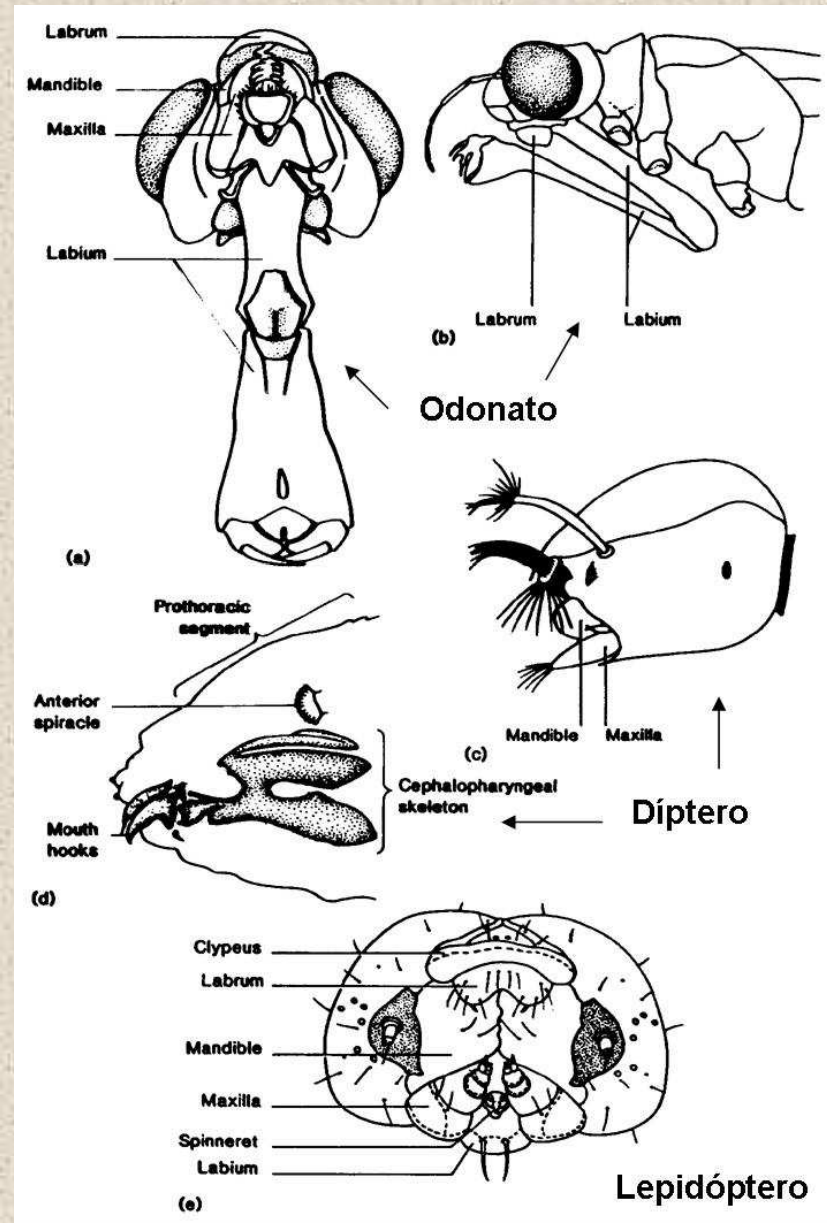
## Cabeza



Fuente: Adaptado de Romoser (1973)

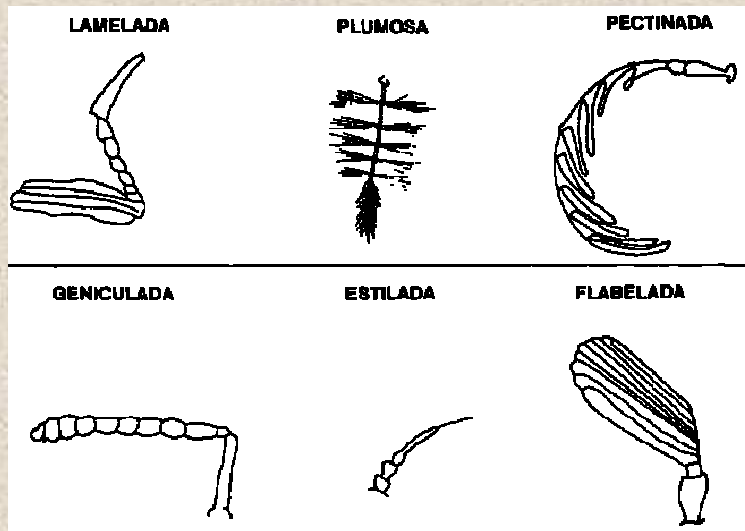
# INSECTOS

## Cabeza

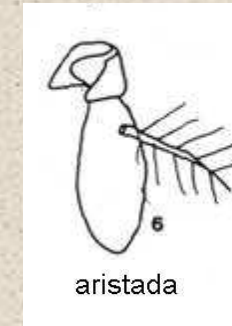


# INSECTOS

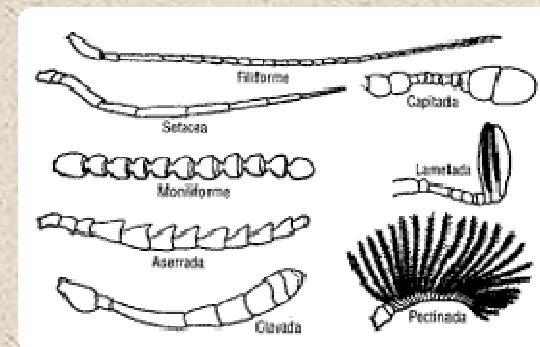
## Cabeza



Fuente: [http://www.fastonline.org/CD3WD\\_40/INPHO/VLIBRARY/X0053S/GIF/X0053S04.GIF](http://www.fastonline.org/CD3WD_40/INPHO/VLIBRARY/X0053S/GIF/X0053S04.GIF)



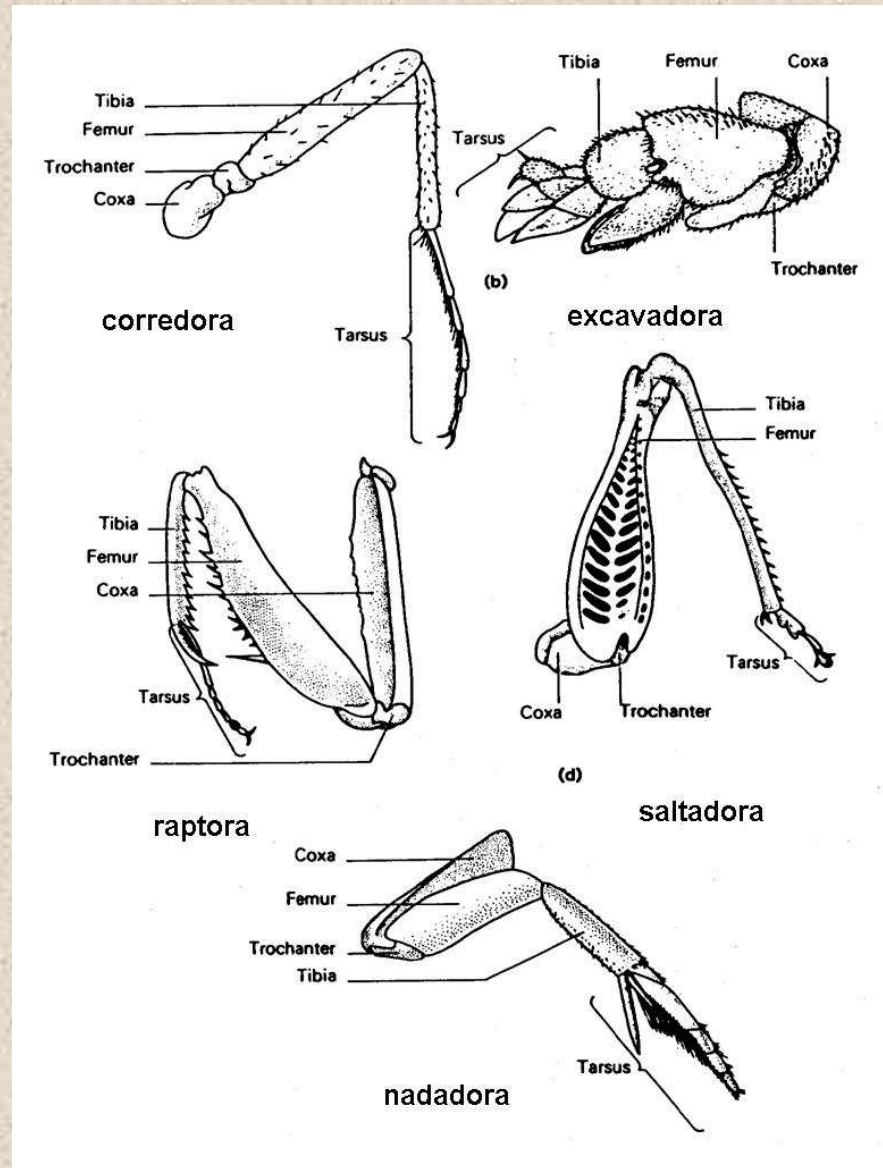
Fuente: [http://ocwus.us.es/produccion-vegetal/sanidad-vegetal/Sanidad\\_vegetal/Tema%202\\_HTML/images/pic011.jpg](http://ocwus.us.es/produccion-vegetal/sanidad-vegetal/Sanidad_vegetal/Tema%202_HTML/images/pic011.jpg)



Fuente: <http://www.bioticanet.com/guia/comercios/bioticanet/infotecnica/imagenes/figura1d.gif>

# INSECTOS

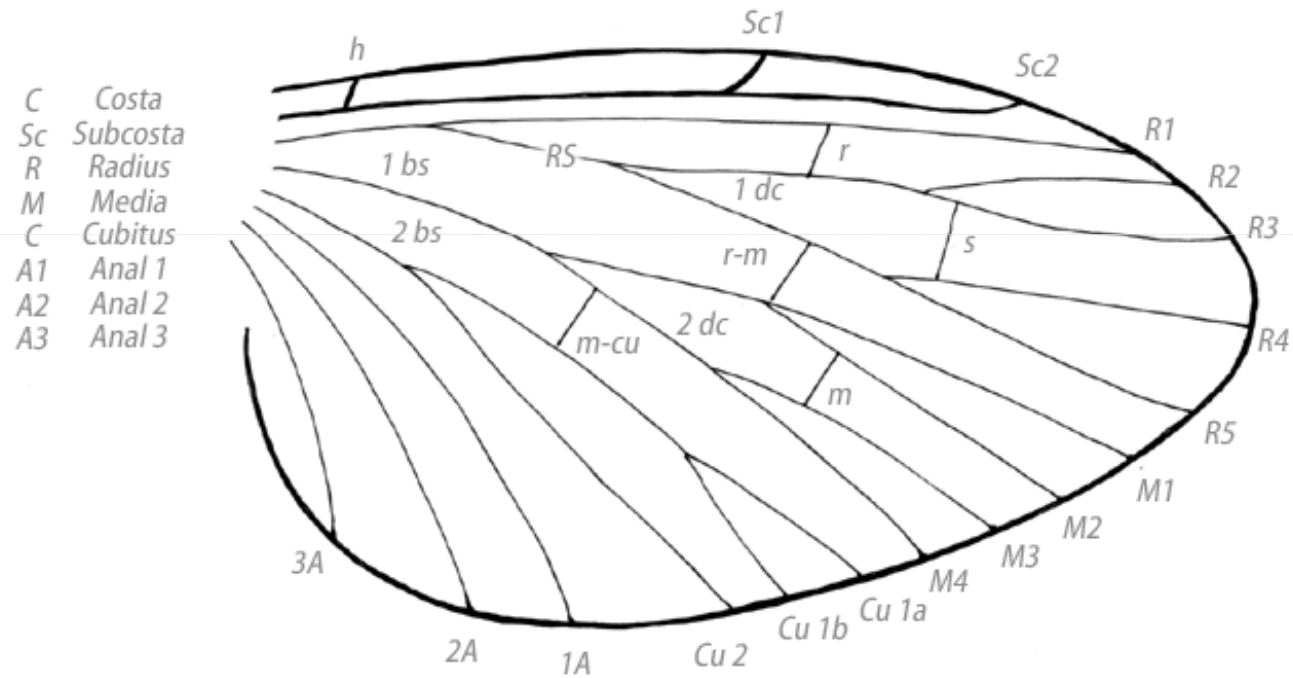
## Tórax



Fuente: Adaptado de Romoser (1973)

# INSECTOS

## Tórax



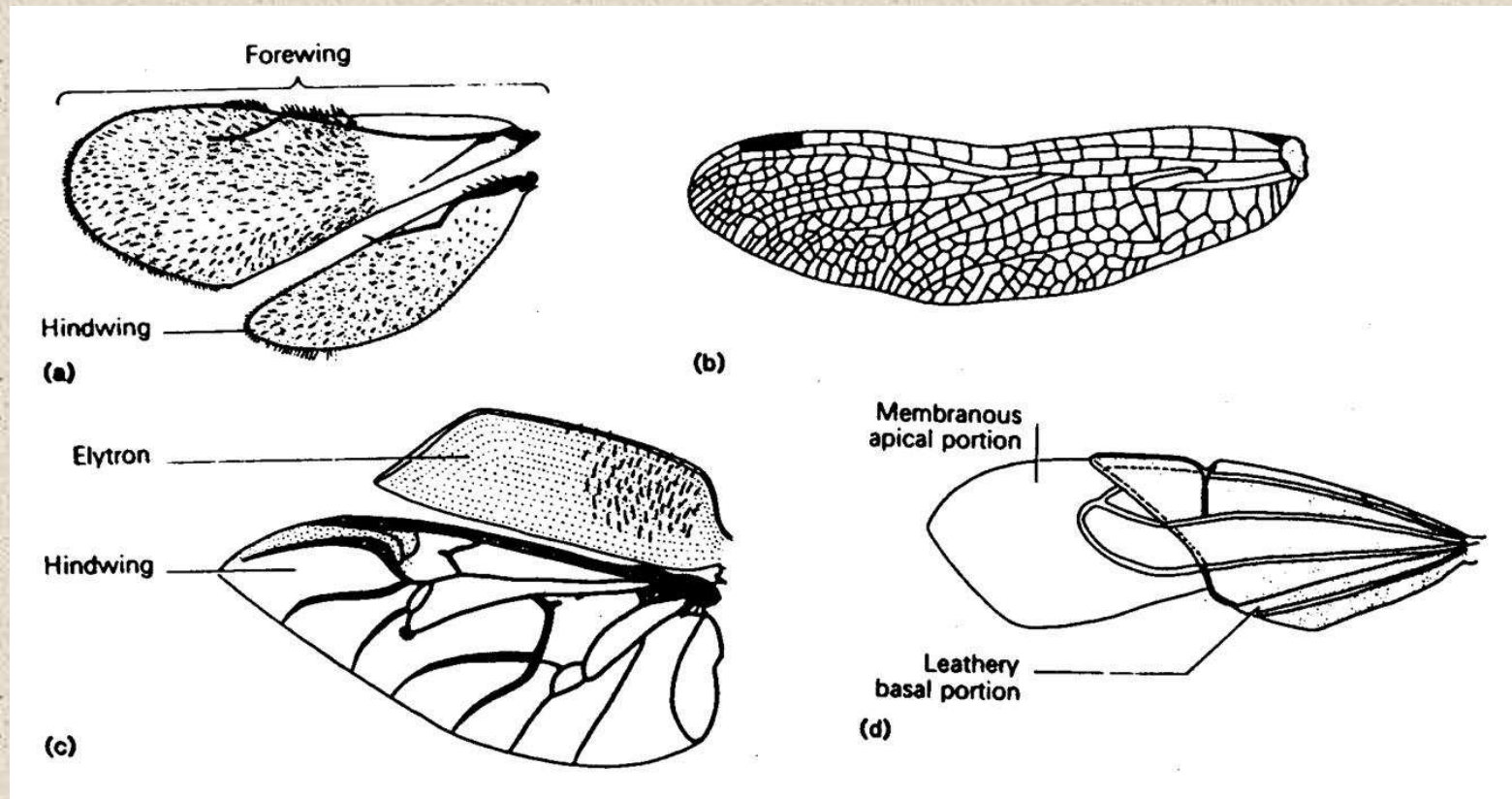
Fuente: <http://upload.wikimedia.org/wikipedia/commons/c/c0/Wing-insect.png>





# INSECTOS

## Tórax



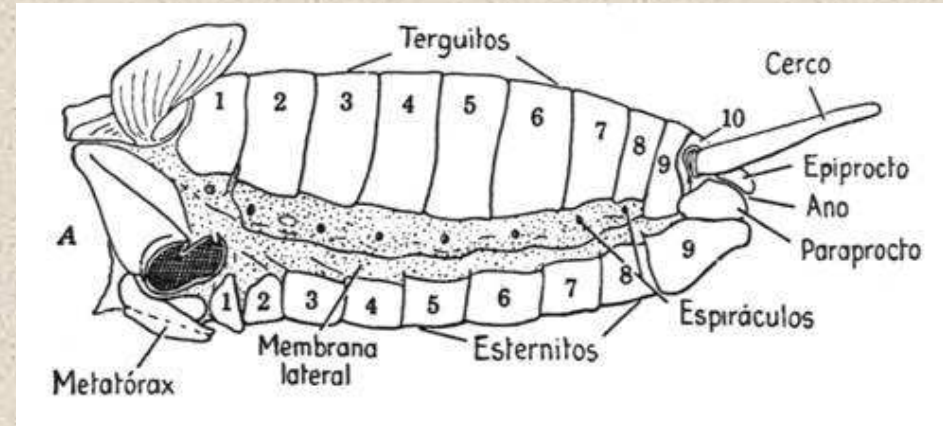
Fuente: Adaptado de Romoser (1973)



# INSECTOS

## Abdomen

Formado por 11 segmentos  
Espiráculos en los 8 primeros  
Variabilidad

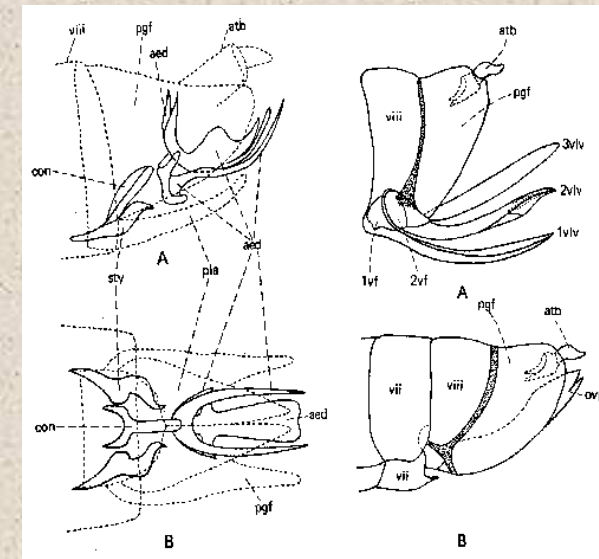


Fuente: [http://ocwus.us.es/produccion-vegetal/sanidad-vegetal/Sanidad\\_vegetal/Tema%202\\_HTML/images/pic018.jpg](http://ocwus.us.es/produccion-vegetal/sanidad-vegetal/Sanidad_vegetal/Tema%202_HTML/images/pic018.jpg)

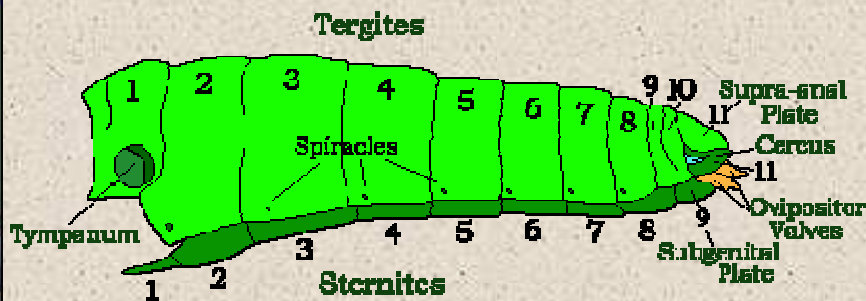
3 zonas:

- Región pregenital (7 segmentos)
- Región genital (8º y 9º segmentos)
- Región postgenital

## Genitalia



Fuente: [http://www.mun.ca/biology/scarr/Lock-and-Key\\_genitalia.gif](http://www.mun.ca/biology/scarr/Lock-and-Key_genitalia.gif)



Fuente: <http://www.earthlife.net/insects/images/anatomy/gh-abdomen.gif>

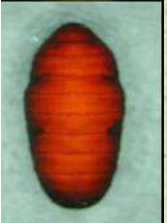


## GRUPOS DE INTERÉS

INSECTOS:

Apterigotos

Pterigotos



## Tema 2. Fauna entomológica involucrada. Caracteres morfoanatómicos. Apuntes bionómicos.



Apterigotos

O. Collembola



Arthropleona



Symphyleona

Fuente: [http://www.afpmb.org/pubs/Field\\_Guide/Images/originals/Fig.%2072.jpg](http://www.afpmb.org/pubs/Field_Guide/Images/originals/Fig.%2072.jpg)



## Tema 2. Fauna entomológica involucrada. Caracteres morfoanatónicos. Apuntes bionómicos.

Apterigotos

O. Diplura



Fuente: <http://www.cals.ncsu.edu/course/ent525/soil/soilpix/images/diplura.jpg>



Fuente: <http://www.uoguelph.ca/debu/STEVWeb/images/Japygidae.jpg>



## Tema 2. Fauna entomológica involucrada. Caracteres morfoanatónicos. Apuntes bionómicos.

Apterigotos

O. Zygentoma o Thysanura *sensu stricto*



Fuente: <http://www.delattinia.de/Zygentoma.jpg>



Fuente: <http://fai.unne.edu.ar/biologia/ecologia/images/pez%20de%20plata.jpg>

*Lepisma*

Caracteres:

- \* Ojos
- \* Escamas corporales
- \* Último artejo del palpo labial
- \* Sensilios de antenas y palpos
- \* Último terguito abdominal
- \* ...

## Tema 2. Fauna entomológica involucrada. Caracteres morfoanatónicos. Apuntes bionómicos.



Pterigotos

O. Diptera



**Grupos comprendidos:**

\* Nematóceros (larvas eucéfalas)

\* Braquíceros



Ortorrafos (Braquíceros s,s.)  
(antenas con arista terminal; larvas hemicéfalas)



Ciclorrafos (antenas con arista lateral)  
Esquizóforos (con sutura ptilinal)  
Caliptrados  
Acaliptrados  
Asquizos (sin sutura ptilinal)



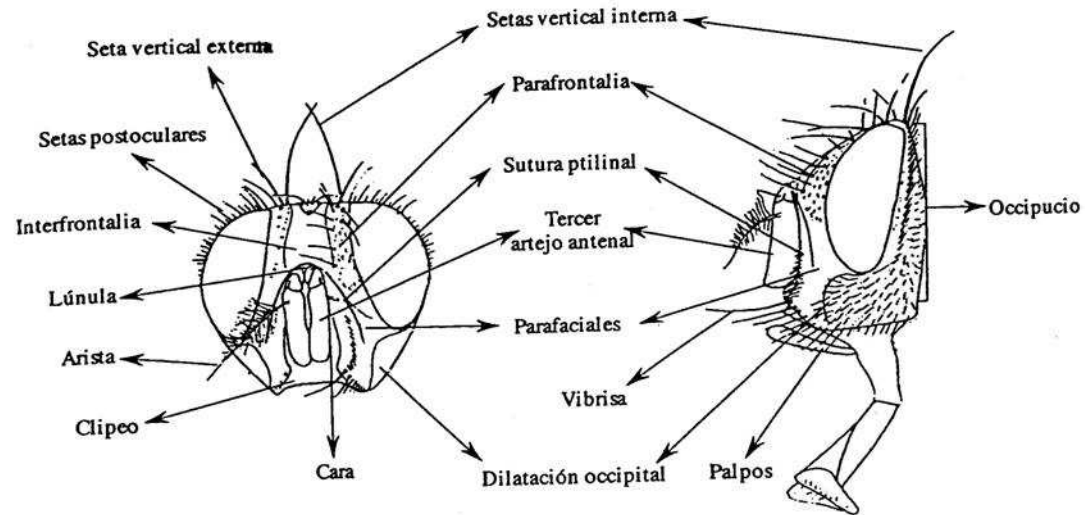
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Pterigotos

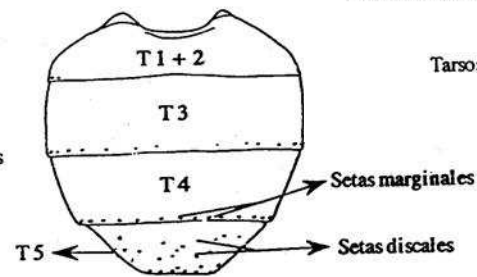
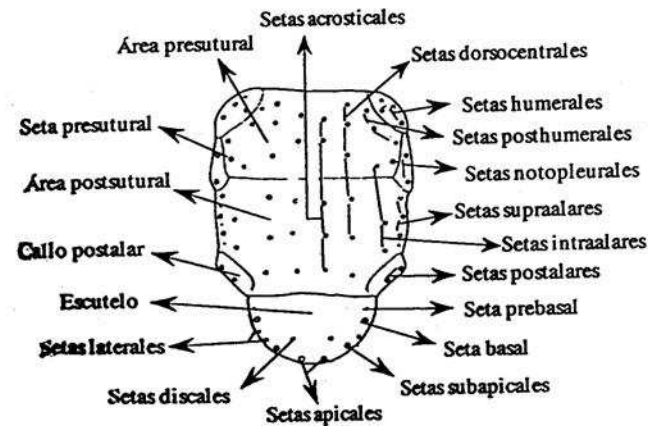
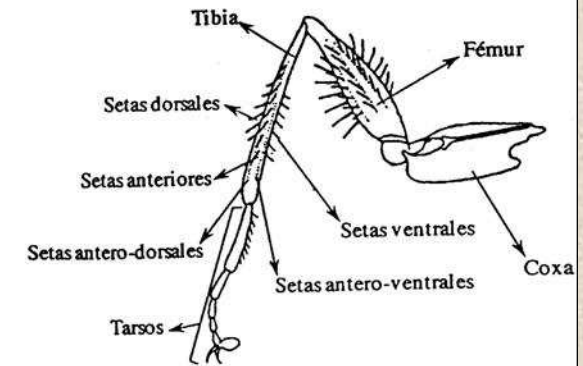
O. Diptera

Caracteres:

- \* Vértex
- \* Sutura ptilinal
- \* Ojos
- \* Antenas
- \* Quetotaxia
- \* Notos y pleuras
- \* Venación alar
- \* Caliptras
- \* Genitalia
- \* ...



Fuente: ROGNES (1991) y SÉGUY (1923)





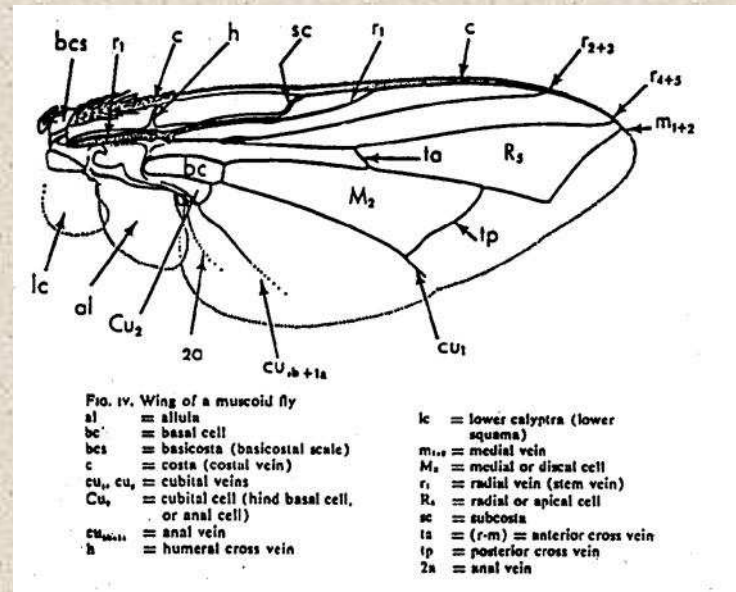
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Pterigotos

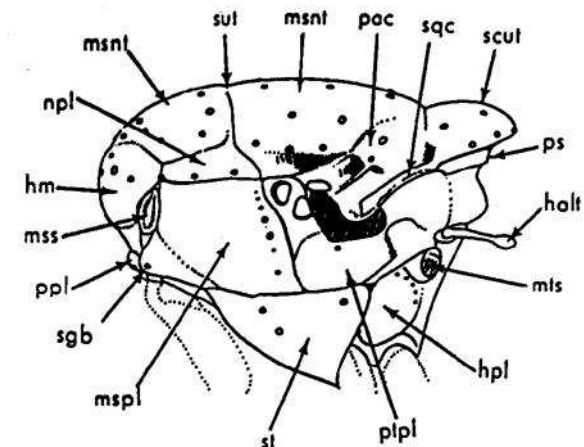
O. Diptera

Caracteres:

- \* Vértex
- \* Sutura ptilinal
- \* Ojos
- \* Antenas
- \* Quetotaxia
- \* Notos y pleuras
- \* Venación alar
- \* Caliptras
- \* Genitalia
- \* ...



Fuente: Greenberg (1971)



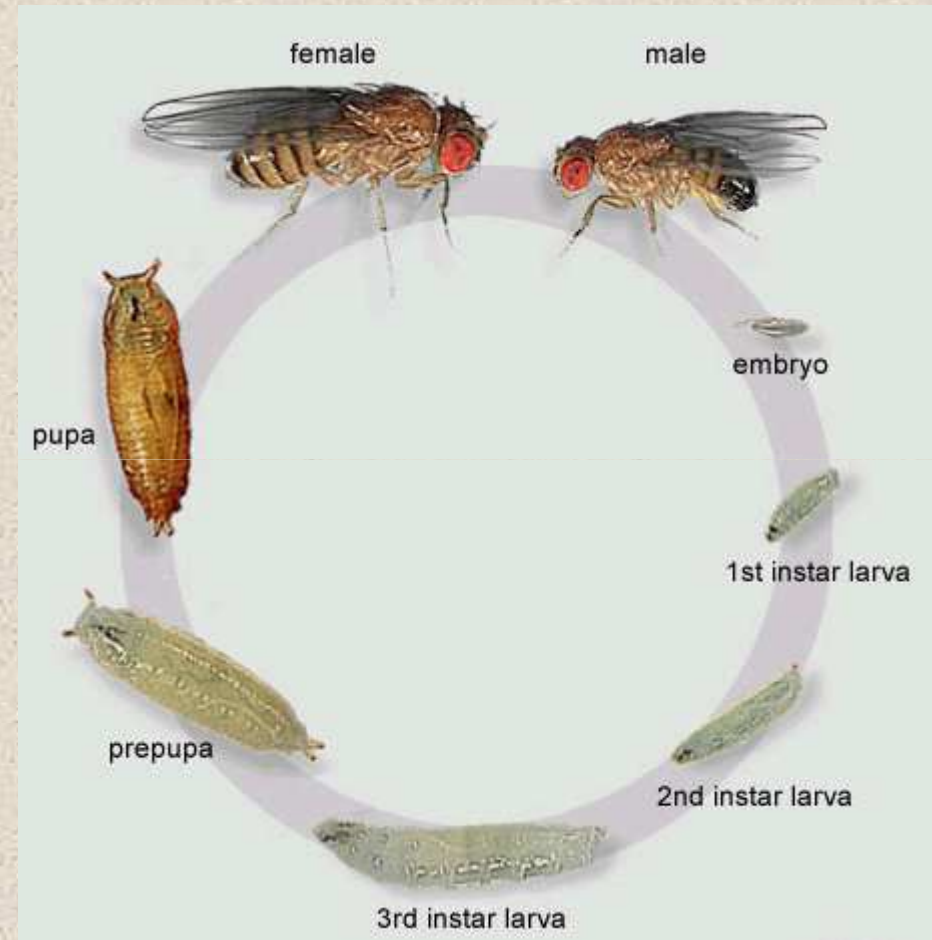
## Tema 2. Fauna entomológica involucrada. Caracteres morfoanatónicos. Apuntes bionómicos.

Pterigotos

O. Diptera



Fuente: [http://www.afpmb.org/pubs/Field\\_Guide/Images/originals/Fig.%20166.jpg](http://www.afpmb.org/pubs/Field_Guide/Images/originals/Fig.%20166.jpg)



Fuente: <http://html.rincondelvago.com/000659130.png>

# Tema 2. Fauna entomológica involucrada. Caracteres morfoanatónicos. Apuntes bionómicos.

Pterigotos

O. Diptera



Fuente: <http://www.smlc.asso.fr/smlc/dmla/entomologie/diaporama/images/08.jpg>



Fuente: <http://www.no-pest.com/Blowfly%20Larvae2.jpg>

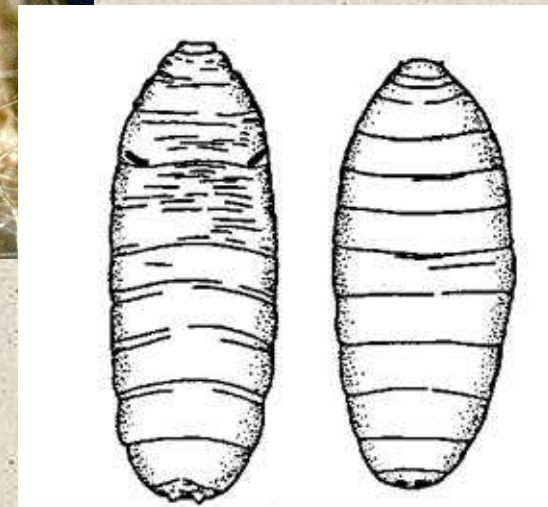


Fuente: [http://www.afpmb.org/pubs/Field\\_Guide/Images/originals/Fig.%20178.jpg](http://www.afpmb.org/pubs/Field_Guide/Images/originals/Fig.%20178.jpg)



Poder Judicial, Republica de Costa Rica

Fuente: [http://www.miu.cr/ucr.ac.cr/images/index/imagenes\\_ad/Pupario.jpg](http://www.miu.cr/ucr.ac.cr/images/index/imagenes_ad/Pupario.jpg)



Fuente: Smith (198)

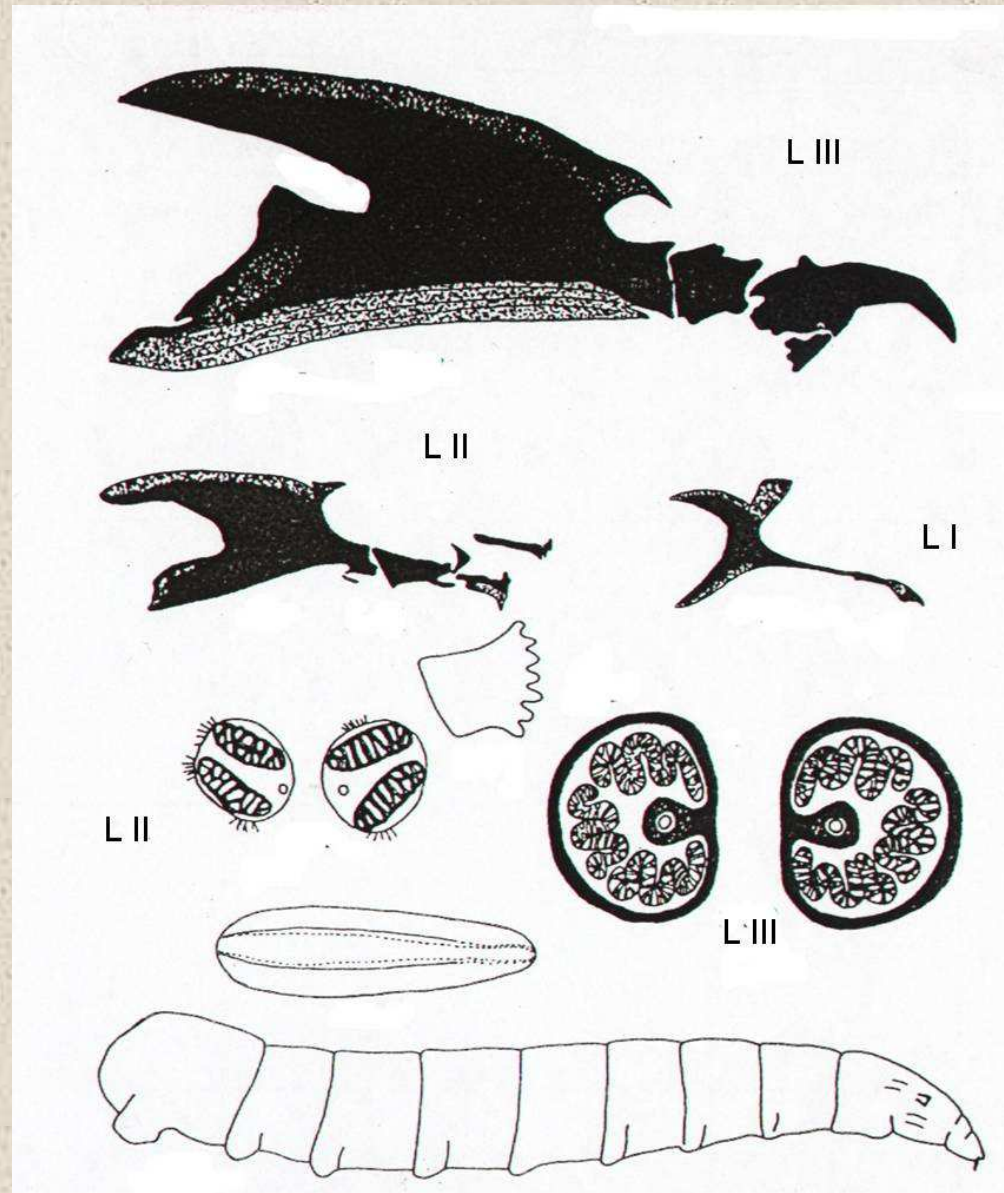
## Estados preimaginales



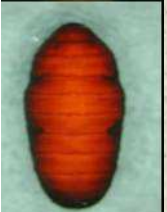
## Tema 2. Fauna entomológica involucrada. Caracteres morfoanatónicos. Apuntes bionómicos.

Pterigotos

O. Diptera



Fuente: Smith (198)



## Tema 2. Fauna entomológica involucrada. Caracteres morfoanatómicos. Apuntes bionómicos.

Pterigotos

O. Diptera



**Muscidae**

Fuente:  
[http://www.afpmb.org/pubs/Field\\_Guide/Images/originals/Fig.%20200.jpg](http://www.afpmb.org/pubs/Field_Guide/Images/originals/Fig.%20200.jpg)



**Fannidae**

Fuente: [http://3.bp.blogspot.com/\\_j--tam5RsdI/RyYtmFha88I/AAAAAAAAAx8/pX7nxuRmwIA/s400/DSC\\_8364.jpg](http://3.bp.blogspot.com/_j--tam5RsdI/RyYtmFha88I/AAAAAAAAAx8/pX7nxuRmwIA/s400/DSC_8364.jpg)



**Calliphoridae**

Fuente:  
[http://www.afpmb.org/pubs/Field\\_Guide/Images/originals/Fig.%20171.jpg](http://www.afpmb.org/pubs/Field_Guide/Images/originals/Fig.%20171.jpg)



**Piophilidae**

Fuente:  
<http://www.mauroyberra.cl/contenido/biografia/atares/fotos/Piophila%20casei.jpg>



**Drosophilidae**

Fuente:  
[http://farm1.static.flickr.com/31/54275159\\_1a756047cf.jpg](http://farm1.static.flickr.com/31/54275159_1a756047cf.jpg)



**Phoridae**

Fuente:  
[http://www.afpmb.org/pubs/Field\\_Guide/Images/originals/Fig.%20175.jpg](http://www.afpmb.org/pubs/Field_Guide/Images/originals/Fig.%20175.jpg)



**Psychodidae**

Fuente:  
[http://www.afpmb.org/pubs/Field\\_Guide/Images/originals/Fig.%20194.jpg](http://www.afpmb.org/pubs/Field_Guide/Images/originals/Fig.%20194.jpg)



**Sarcophagidae**



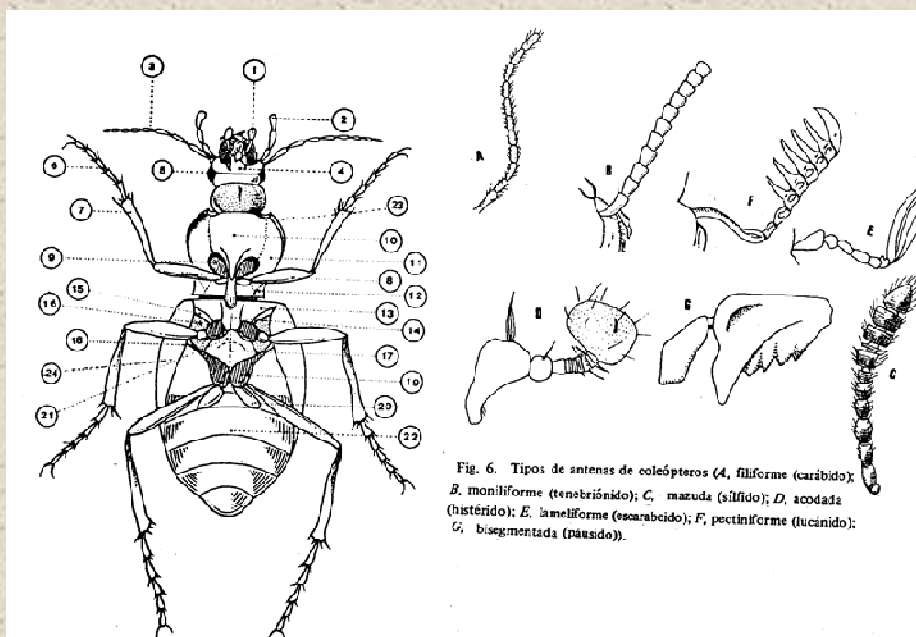
## Tema 2. Fauna entomológica involucrada. Caracteres morfoanatómicos. Apuntes bionómicos.

Pterigotos

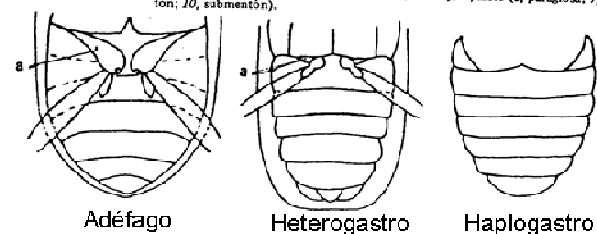
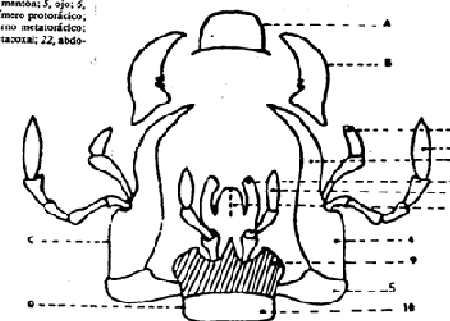
O. Coleoptera

Caracteres:

- \* Antenas
- \* Patas y artejos tarsales
- \* Élitros y alas
- \* Esternos
- \* Genitalia
- \* ...



Visa ventral de *Cambus* sp. 11, palpo labial; 2, palpo maxilar; 3, antena; 4, monoá; 5, ojo; 6, 7, tibia; 8, fémur; 9, coxa; 10, prosterno; 11, episterno protorácico; 12, episterno protorácico; 13, esternito mesotorácico; 14, mesosterno; 15, episterno mesotorácico; 16, episterno mesotorácico; 17, esternito mesotorácico; 18, episterno mesotorácico; 19, coxa; 20, urocoxa; 21, placa genital; 22, abdomen; 23, surco holopleural; 24, epipleura.



Fuente: Adaptado de Barrientos (1988)



## Tema 2. Fauna entomológica involucrada. Caracteres morfoanatómicos. Apuntes bionómicos.

Pterigotos

O. Coleoptera



*Lytta vesicatoria*

Fuente:  
[http://www.afpmb.org/pubs/Field\\_Guide/Images/originals/Fig.%20160.jpg](http://www.afpmb.org/pubs/Field_Guide/Images/originals/Fig.%20160.jpg)

**Meloidae**



Fuente:  
[http://www.afpmb.org/pubs/Field\\_Guide/Images/originals/Fig.%20163.jpg](http://www.afpmb.org/pubs/Field_Guide/Images/originals/Fig.%20163.jpg)

**Staphylinidae**



Rittner oz 2003

Fuente:  
[http://www.afpmb.org/pubs/Field\\_Guide/Images/originals/Fig.%20161.jpg](http://www.afpmb.org/pubs/Field_Guide/Images/originals/Fig.%20161.jpg)



**Cleridae**



**Tenebrionidae**



Larva

Photo: Stephanie Boucher

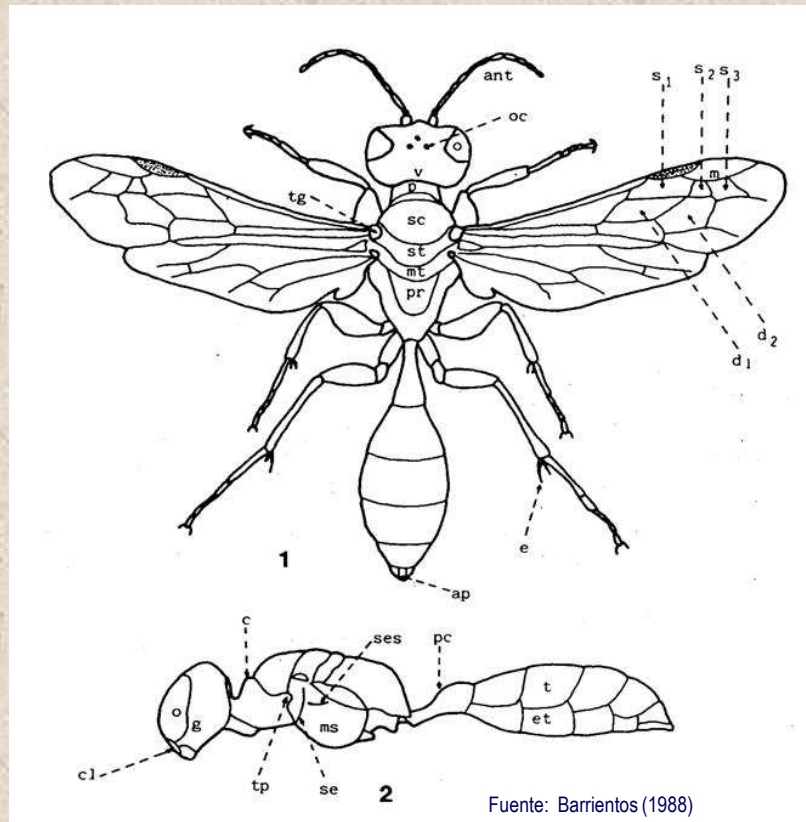
Fuente: <http://canadianbiodiversity.mcgill.ca/data/sppphotos/insects/dermestidae.jpg>

**Dermestidae**

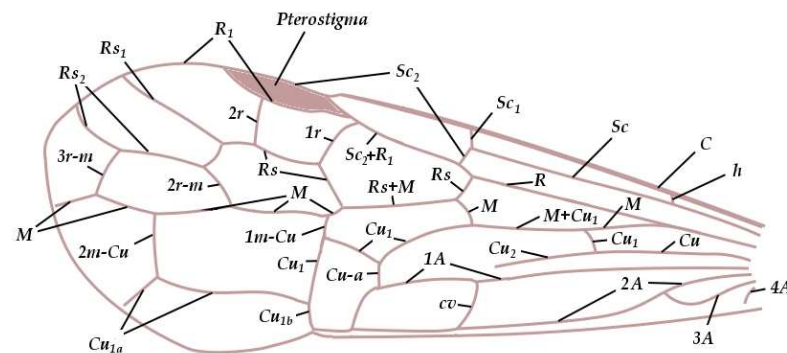
# Tema 2. Fauna entomológica involucrada. Caracteres morfoanatómicos. Apuntes bionómicos.

Pterigotos

O. Hymenoptera



Fuente: Barrientos (1988)



Fuente: [http://upload.wikimedia.org/wikipedia/commons/6/6b/Hymenoptera-wing-Ross\\_g1.jpg](http://upload.wikimedia.org/wikipedia/commons/6/6b/Hymenoptera-wing-Ross_g1.jpg)

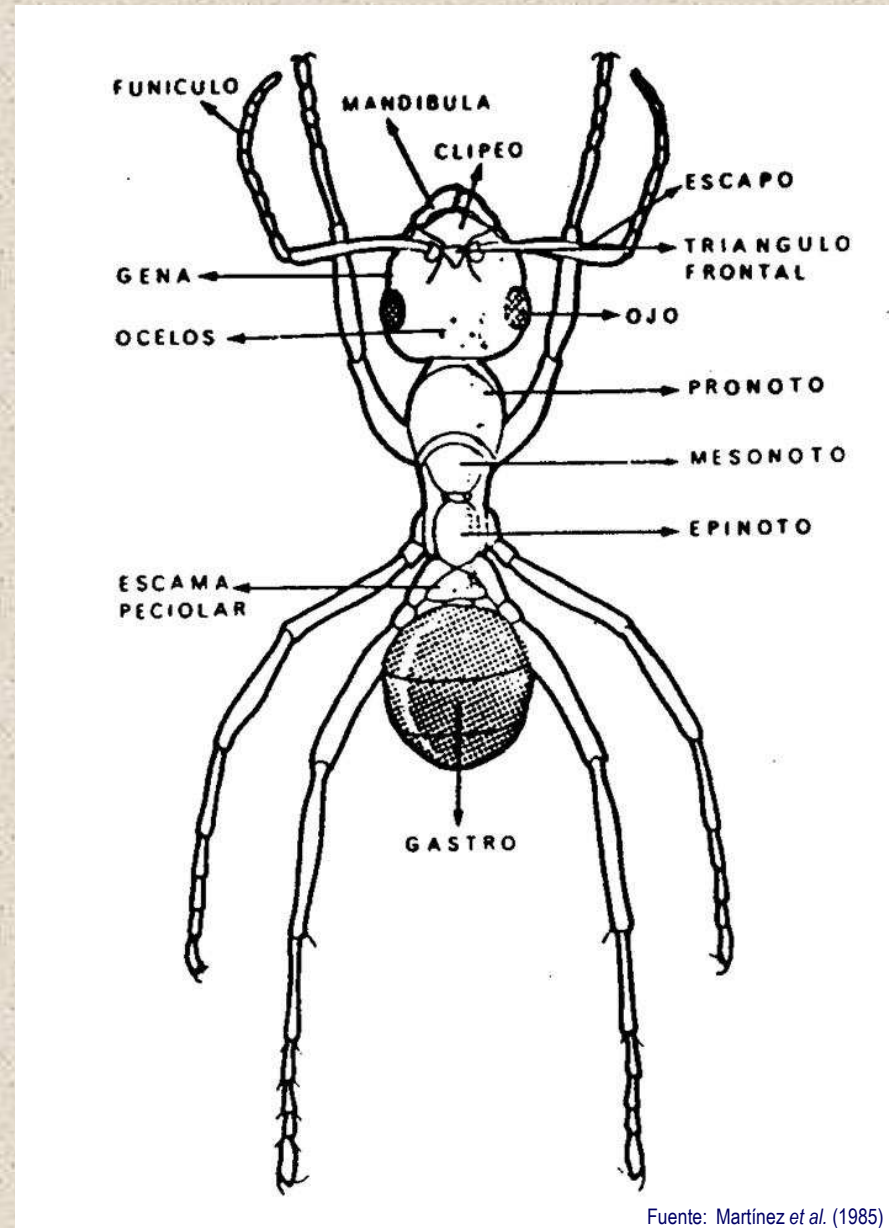




## Tema 2. Fauna entomológica involucrada. Caracteres morfoanatómicos. Apuntes bionómicos.

Pterigotos

O. Hymenoptera



Fuente: Martínez et al. (1985)



## Tema 2. Fauna entomológica involucrada. Caracteres morfoanatónicos. Apuntes bionómicos.

Pterigotos

O. Hymenoptera



Fuente:  
[http://www.afpmb.org/pubs/Field\\_Guide/Images/originals/Fig.%2099.jpg](http://www.afpmb.org/pubs/Field_Guide/Images/originals/Fig.%2099.jpg)



Fuente:  
[http://www.afpmb.org/pubs/Field\\_Guide/Images/originals/Fig.%20117.jpg](http://www.afpmb.org/pubs/Field_Guide/Images/originals/Fig.%20117.jpg)

*Solenopsis (Formicidae)*



Fuente:  
[http://www.afpmb.org/pubs/Field\\_Guide/Images/originals/Fig.%20125.jpg](http://www.afpmb.org/pubs/Field_Guide/Images/originals/Fig.%20125.jpg)



Fuente:  
[http://www.afpmb.org/pubs/Field\\_Guide/Images/originals/Fig.%20127.jpg](http://www.afpmb.org/pubs/Field_Guide/Images/originals/Fig.%20127.jpg)

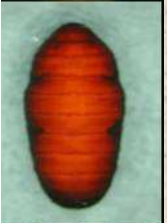


Fuente:  
[http://www.afpmb.org/pubs/Field\\_Guide/Images/originals/Fig.%20109.jpg](http://www.afpmb.org/pubs/Field_Guide/Images/originals/Fig.%20109.jpg)

## Tema 2. Fauna entomológica involucrada. Caracteres morfoanatónicos. Apuntes bionómicos.

Pterigotos

O. Dictyoptera



Fuente: [http://www.afpmb.org/pubs/Field\\_Guide/Images/originals/Fig.%2079.jpg](http://www.afpmb.org/pubs/Field_Guide/Images/originals/Fig.%2079.jpg)



Fuente: [http://www.afpmb.org/pubs/Field\\_Guide/Images/originals/Fig.%2080.jpg](http://www.afpmb.org/pubs/Field_Guide/Images/originals/Fig.%2080.jpg)



Fuente: [http://www.afpmb.org/pubs/Field\\_Guide/Images/originals/Fig.%2082.jpg](http://www.afpmb.org/pubs/Field_Guide/Images/originals/Fig.%2082.jpg)

## Tema 2. Fauna entomológica involucrada. Caracteres morfoanatómicos. Apuntes bionómicos.

Pterigotos

O. Dermaptera



Fuente: [http://newnaturalist.com/wp-content/uploads/dscn4828\\_medium.jpg](http://newnaturalist.com/wp-content/uploads/dscn4828_medium.jpg)



University of Nebraska  
Department of Entomology

Fuente: [http://entomology.unl.edu/images/earwigs/euro\\_earwigs.jpg](http://entomology.unl.edu/images/earwigs/euro_earwigs.jpg)



*Labidura riparia* (Pallas, 1773)  
© Marcella Romina

*Labidura*

Fuente:  
[http://www.naturamediterraneo.com/Public/data3/Velvet%20ant/Labidura%20riparia%2004,%20Foce%20Jato,%205%20marzo%202006,%20copia%20per%20web.jpg\\_200635195752\\_Labidura%20riparia%204,%20Foce%20Jato,%205%20marzo%202006,%20copia%20per%20web.jpg](http://www.naturamediterraneo.com/Public/data3/Velvet%20ant/Labidura%20riparia%2004,%20Foce%20Jato,%205%20marzo%202006,%20copia%20per%20web.jpg_200635195752_Labidura%20riparia%204,%20Foce%20Jato,%205%20marzo%202006,%20copia%20per%20web.jpg)

## Tema 2. Fauna entomológica involucrada. Caracteres morfoanatónicos. Apuntes bionómicos.

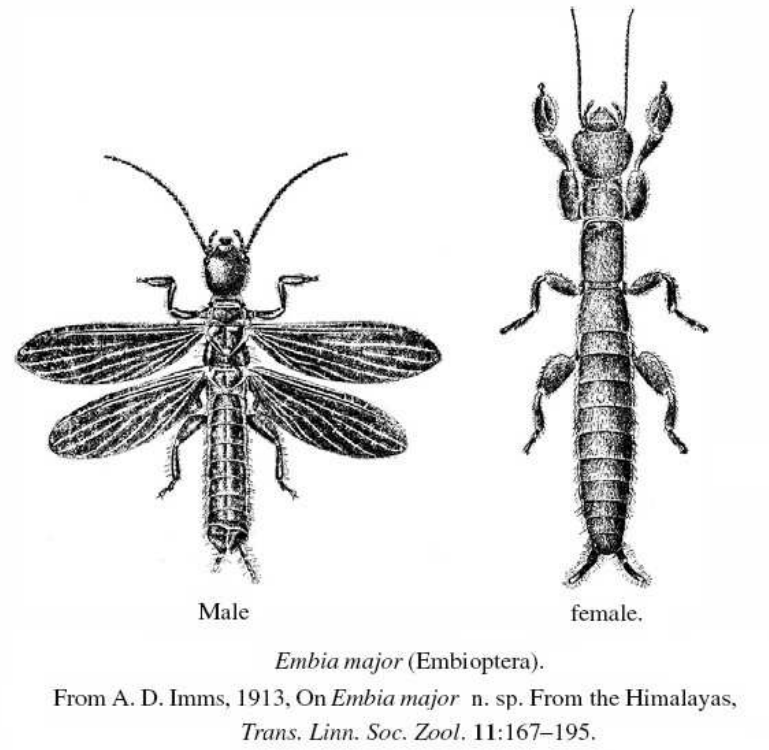
Pterigotos

O. Embioptera



Female embiid spinning silk

Fuente: <http://catalogue-of-organisms.blogspot.com/2007/11/seclusion-of-embioptera.html>



Male

female.

*Embia major* (Embioptera).

From A. D. Imms, 1913, On *Embia major* n. sp. From the Himalayas, *Trans. Linn. Soc. Zool.* 11:167-195.

Fuente: [http://upload.wikimedia.org/wikipedia/commons/3/3c/Embia\\_major.jpg](http://upload.wikimedia.org/wikipedia/commons/3/3c/Embia_major.jpg)



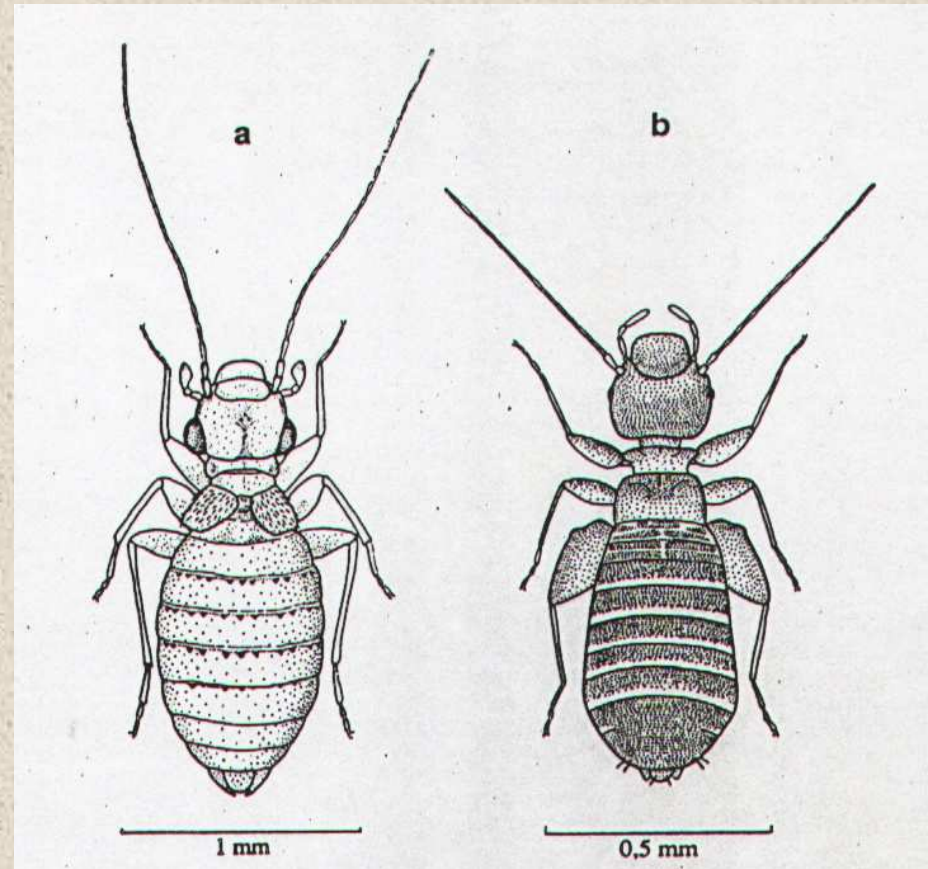
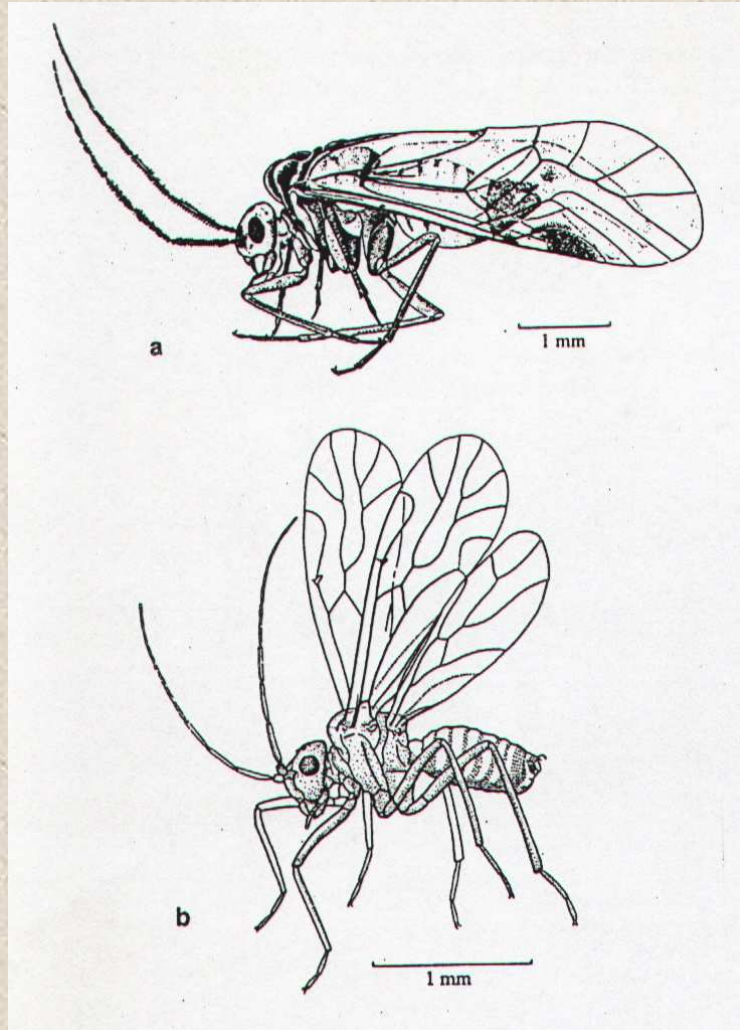
Fuente: [http://farm4.static.flickr.com/3003/2664612795\\_6559d98c7b.jpg?v=0](http://farm4.static.flickr.com/3003/2664612795_6559d98c7b.jpg?v=0)



## Tema 2. Fauna entomológica involucrada. Caracteres morfoanatónicos. Apuntes bionómicos.

Pterigotos

O. Psocoptera



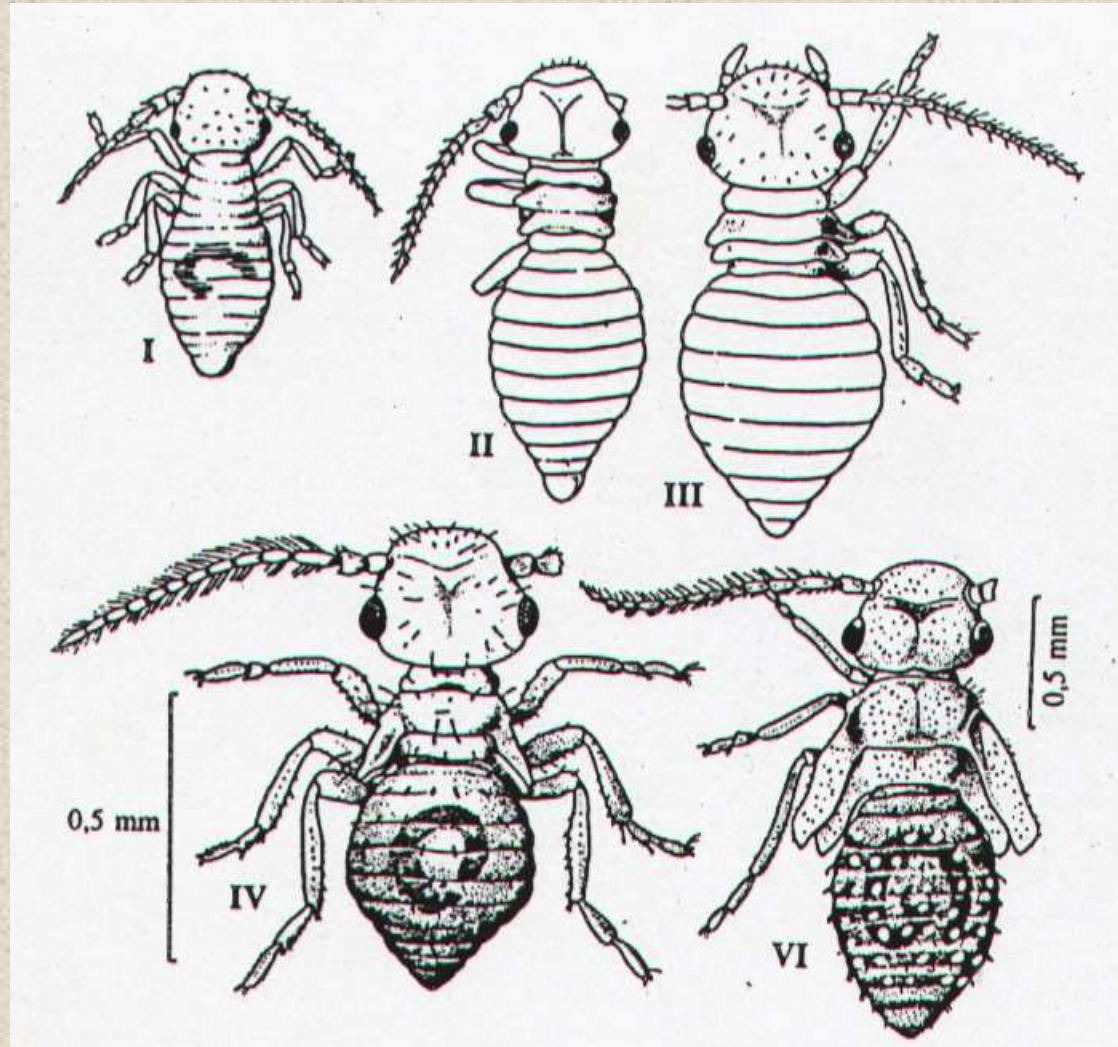
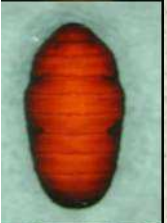
Fuente: Lienhard (1998)



## Tema 2. Fauna entomológica involucrada. Caracteres morfoanatónicos. Apuntes bionómicos.

Pterigotos

O. Psocoptera



Fuente: Lienhard (1998)

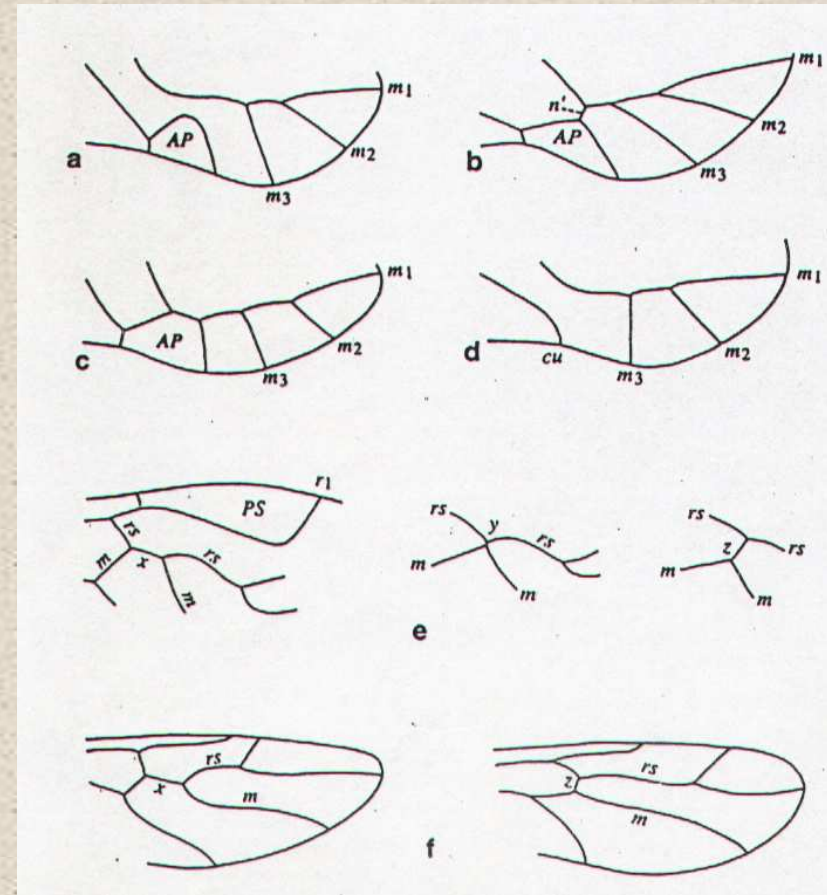
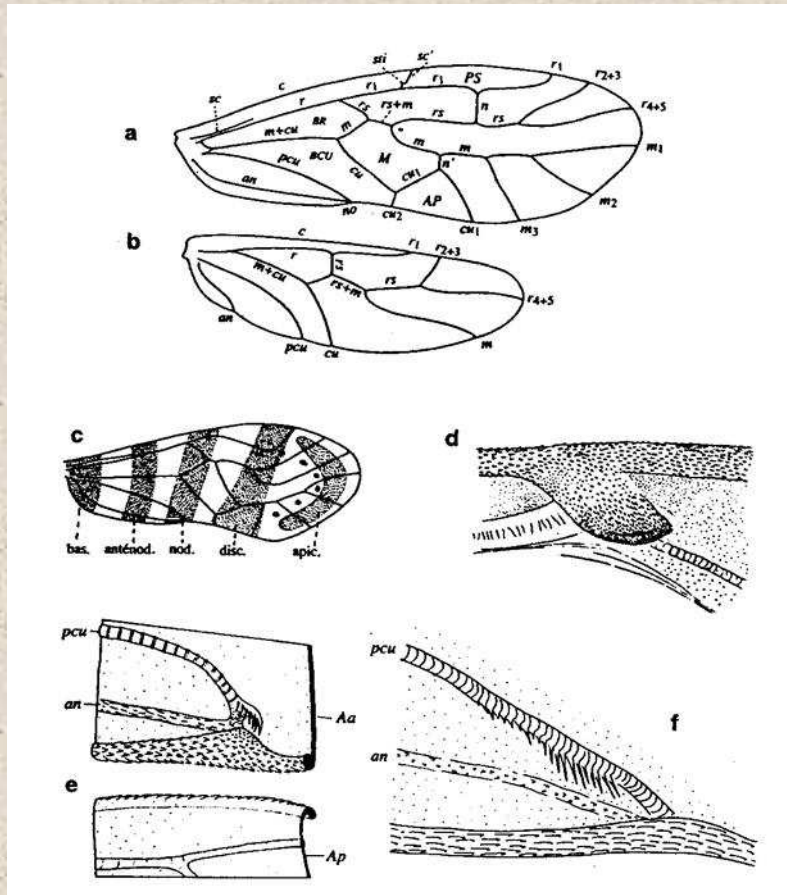
# Tema 2. Fauna entomológica involucrada. Caracteres morfoanatómicos. Apuntes bionómicos.

Pterigotos

O. Psocoptera



Fuente:  
<http://bugguide.net/images/raw/G0YQN0YQI0OQLQ9RG0FQI0UR400090JRXQL0SQ3RQQFR0Q3RXQOR60ORW0K0MQK0KQORXQJRMQFR.jpg>



Fuente: Lienhard (1998)



## Tema 2. Fauna entomológica involucrada. Caracteres morfoanatónicos. Apuntes bionómicos.

Pterigotos

O. Hemiptera (Heteroptera)



**Triatoma**

Fuente:  
[http://www.afpmb.org/pubs/Field\\_Guide/Images/originals/Fig.%2085.jpg](http://www.afpmb.org/pubs/Field_Guide/Images/originals/Fig.%2085.jpg)



Fuente:  
[http://www.afpmb.org/pubs/Field\\_Guide/Images/originals/Fig.%2087.jpg](http://www.afpmb.org/pubs/Field_Guide/Images/originals/Fig.%2087.jpg)



**Reduvius**

Fuente:  
[http://www.afpmb.org/pubs/Field\\_Guide/Images/originals/Fig.%2091.jpg](http://www.afpmb.org/pubs/Field_Guide/Images/originals/Fig.%2091.jpg)



**Cimex**



**Notonecta**

Fuente:  
[http://www.afpmb.org/pubs/Field\\_Guide/Images/originals/Fig.%2098.jpg](http://www.afpmb.org/pubs/Field_Guide/Images/originals/Fig.%2098.jpg)



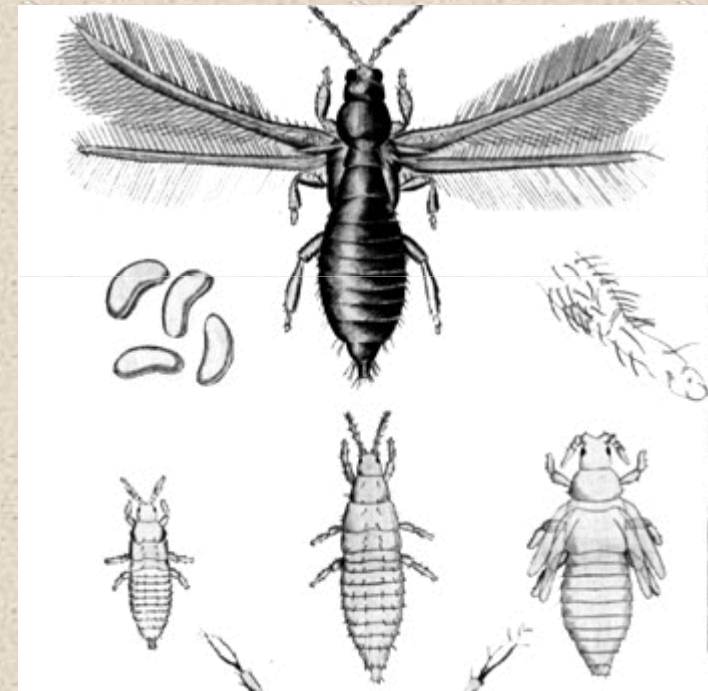
## Tema 2. Fauna entomológica involucrada. Caracteres morfoanatómicos. Apuntes bionómicos.

Pterigotos

O. Thysanoptera



Fuente: <http://web.ipb.ac.id/~phidayat/entomologi/Gambar/thysanoptera%202.jpg>



Fuente: <http://www.discoverlife.org/nh/tx/Insecta/Thysanoptera/images/thysanoptera2.gif>

## Tema 2. Fauna entomológica involucrada. Caracteres morfoanatónicos. Apuntes bionómicos.

Pterigotos

O. Neuroptera



Fuente:  
<http://www.ruf.rice.edu/~ecology/insects/Neuroptera%20Ascalaphidae%20Ulodes%20sp.%20nymph%209%20AB%20NF%206.29.01%20n6.jpg>



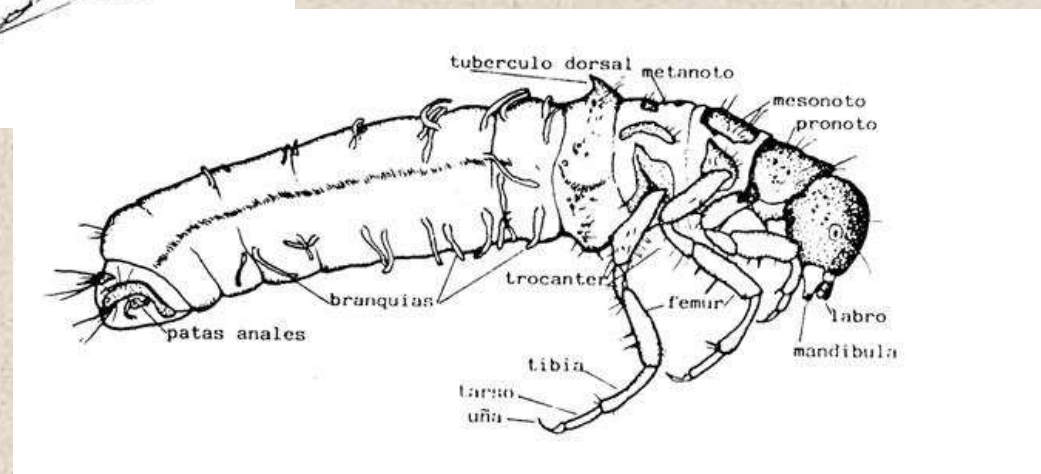
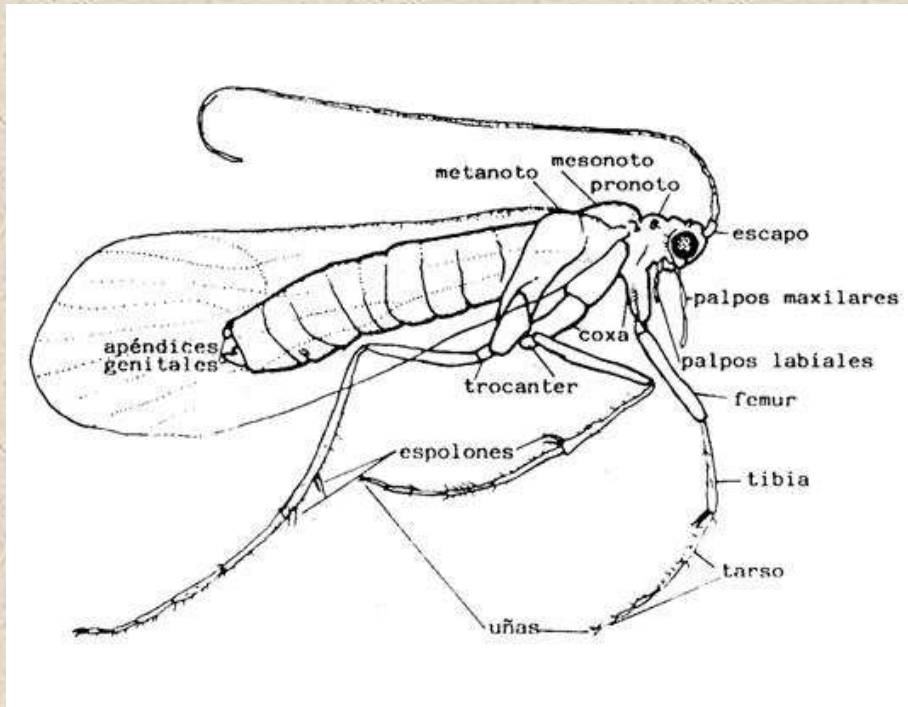
Fuente: <http://ag.udel.edu/enwc/insectdb/images/neuroptera.jpg>



## Tema 2. Fauna entomológica involucrada. Caracteres morfoanatónicos. Apuntes bionómicos.

Pterigotos

O. Trichoptera



Fuente: Barrientos (1988)



## Tema 2. Fauna entomológica involucrada. Caracteres morfoanatómicos. Apuntes bionómicos.

Pterigotos

O. Trichoptera



Foto Enrico Lana - 1992

Fuente: <http://digilander.libero.it/enrlana/trico1.jpg>



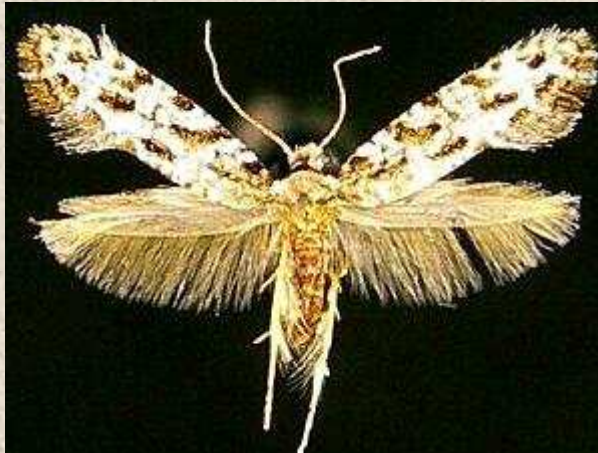
Fuente: <http://www.aquatax.ca/trichoptera/CaddisLarvae.jpg>



## Tema 2. Fauna entomológica involucrada. Caracteres morfoanatómicos. Apuntes bionómicos.

Pterigotos

O. Lepidoptera



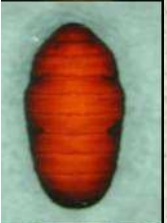
Fuente: <http://mothphotographersgroup.msstate.edu/Files/JV/Micros/300/JV0279-300.jpg>

**Tineidae**



Fuente: [http://www.rione.it/canarini/lancashire/img/alimentazione/afidi\\_camole/plodia%20interpunctella%202.jpg](http://www.rione.it/canarini/lancashire/img/alimentazione/afidi_camole/plodia%20interpunctella%202.jpg)

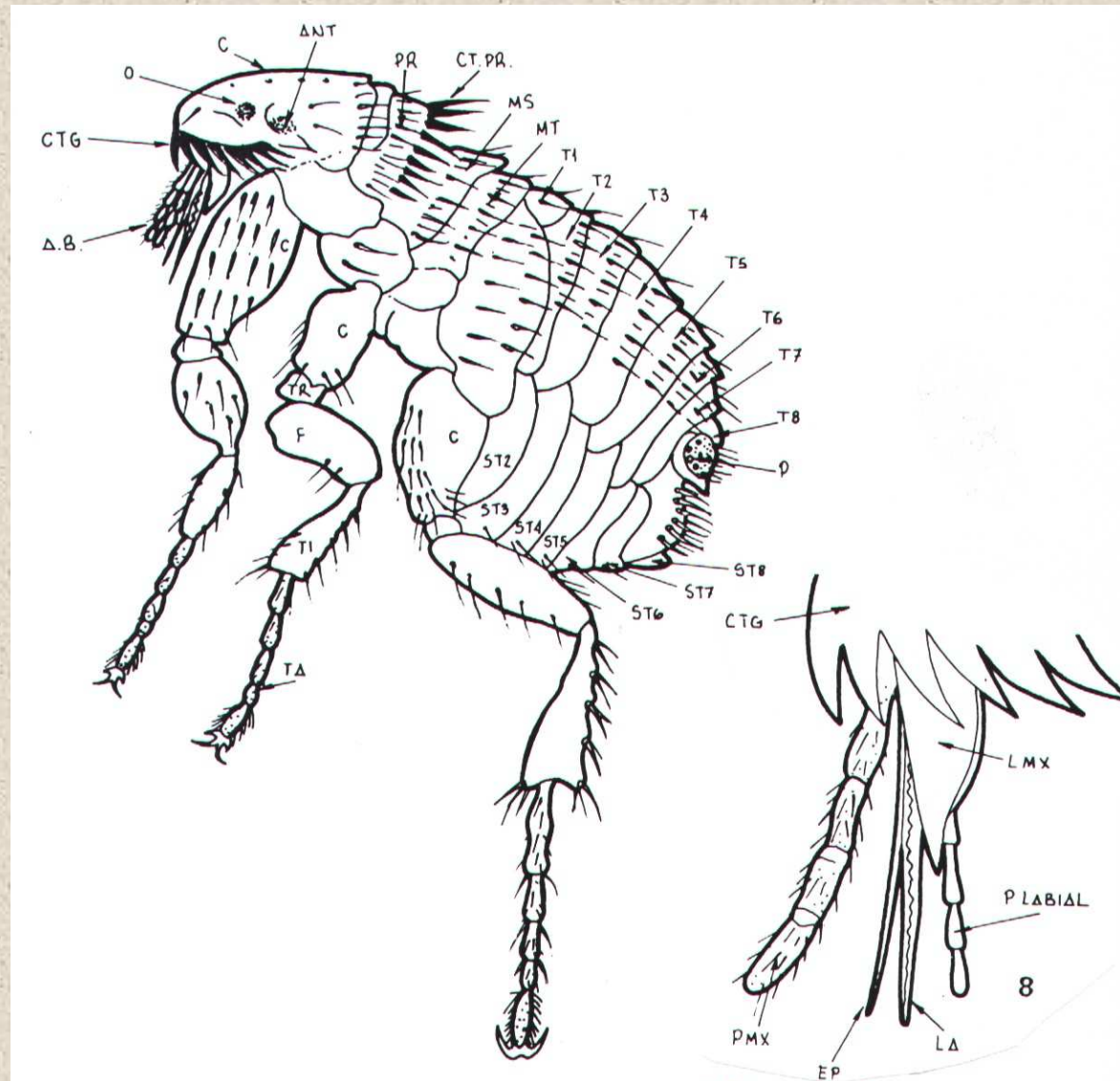
**Plodia**



## Tema 2. Fauna entomológica involucrada. Caracteres morfoanatómicos. Apuntes bionómicos.

Pterigotos

O. Siphonaptera



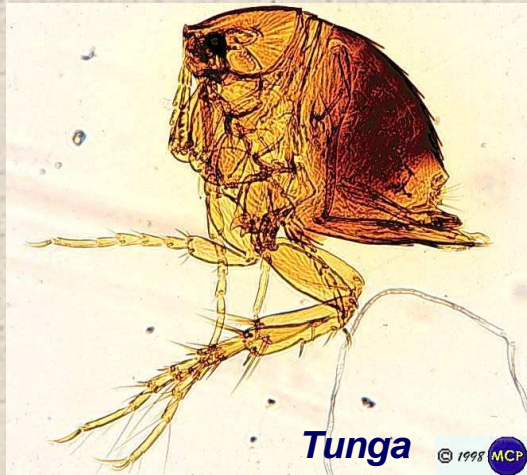
Fuente: Barrientos (1988)



## Tema 2. Fauna entomológica involucrada. Caracteres morfoanatómicos. Apuntes bionómicos.

Pterigotos

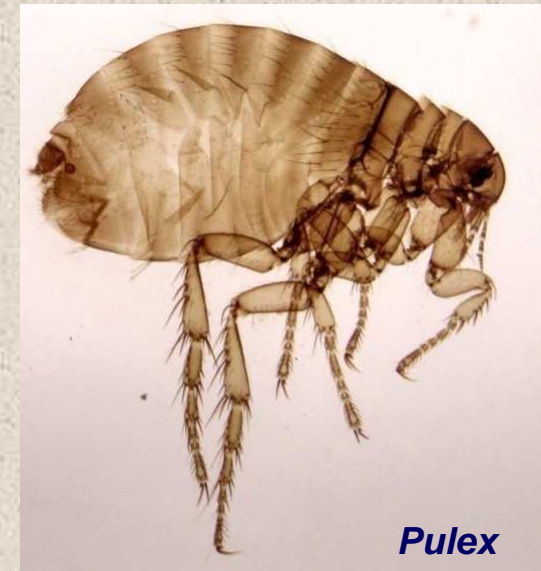
O. Siphonaptera



Fuente: <http://www.icb.usp.br/~marcelcp/Imagens/sifo7.jpg>



Fuente: [http://www.afpmb.org/pubs/Field\\_Guide/Images/Fig.%20217.jpg](http://www.afpmb.org/pubs/Field_Guide/Images/Fig.%20217.jpg)



Fuente: [http://www.afpmb.org/pubs/Field\\_Guide/Images/originals/Fig.%20216.jpg](http://www.afpmb.org/pubs/Field_Guide/Images/originals/Fig.%20216.jpg)



Fuente: [http://www.afpmb.org/pubs/Field\\_Guide/Images/originals/Fig.%20219.jpg](http://www.afpmb.org/pubs/Field_Guide/Images/originals/Fig.%20219.jpg)



Fuente: <http://www.icb.usp.br/~marcelcp/Imagens/sifo13.jpg>



Fuente: [http://www.afpmb.org/pubs/Field\\_Guide/Images/originals/Fig.%20213.jpg](http://www.afpmb.org/pubs/Field_Guide/Images/originals/Fig.%20213.jpg)





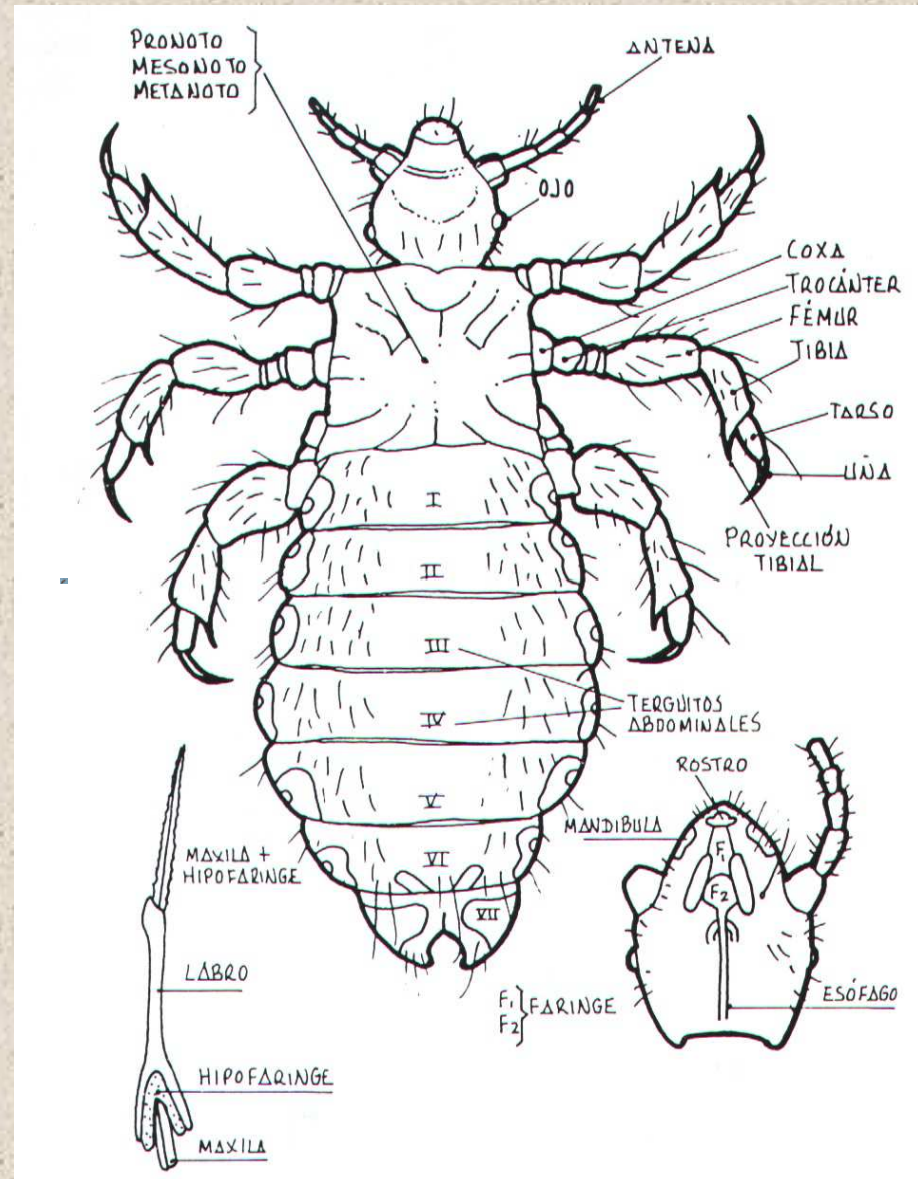
## Tema 2. Fauna entomológica involucrada. Caracteres morfoanatómicos. Apuntes bionómicos.

Pterigotos

O. Anoplura  
(= Siphunculata)



*Pediculus humanus*



Fuente: Barrientos (1988)

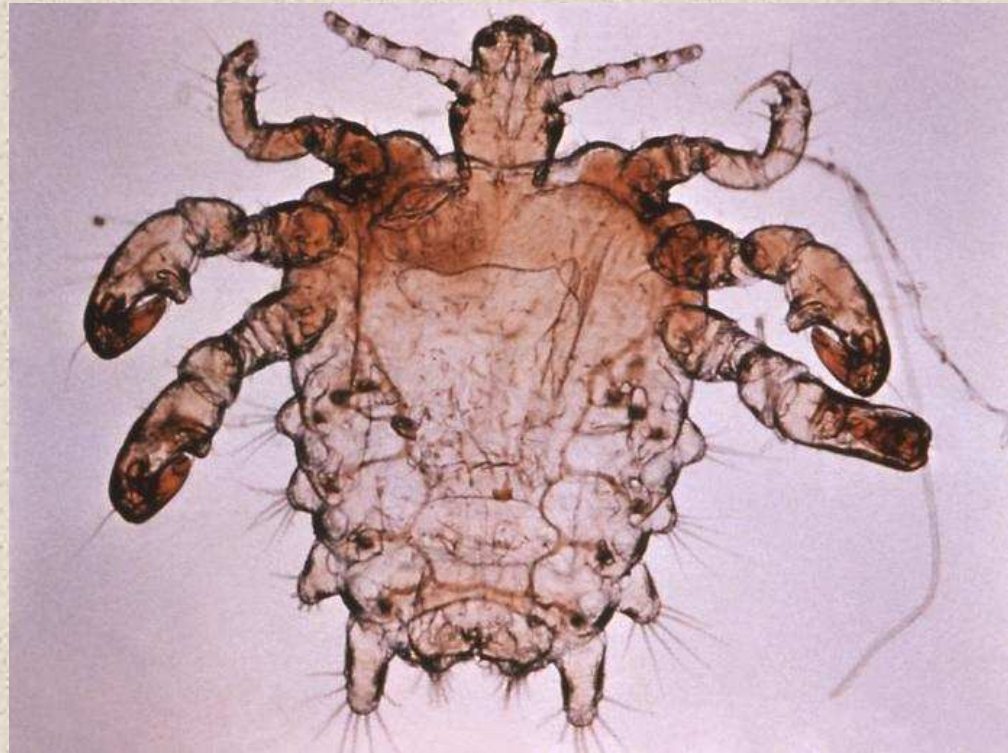


**Tema 2. Fauna entomológica involucrada. Caracteres morfoanatónicos. Apuntes bionómicos.**



Pterigotos

O. Anoplura  
(= Siphunculata)



Fuente: [http://www.afpmb.org/pubs/Field\\_Guide/Images/originals/fig.%2077.jpg](http://www.afpmb.org/pubs/Field_Guide/Images/originals/fig.%2077.jpg)

***Pthirus pubis***

## Tema 2. Fauna entomológica involucrada. Caracteres morfoanatónicos. Apuntes bionómicos.



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