

Identificación de *Lobesia botrana* (Denis & Schiffermuller)

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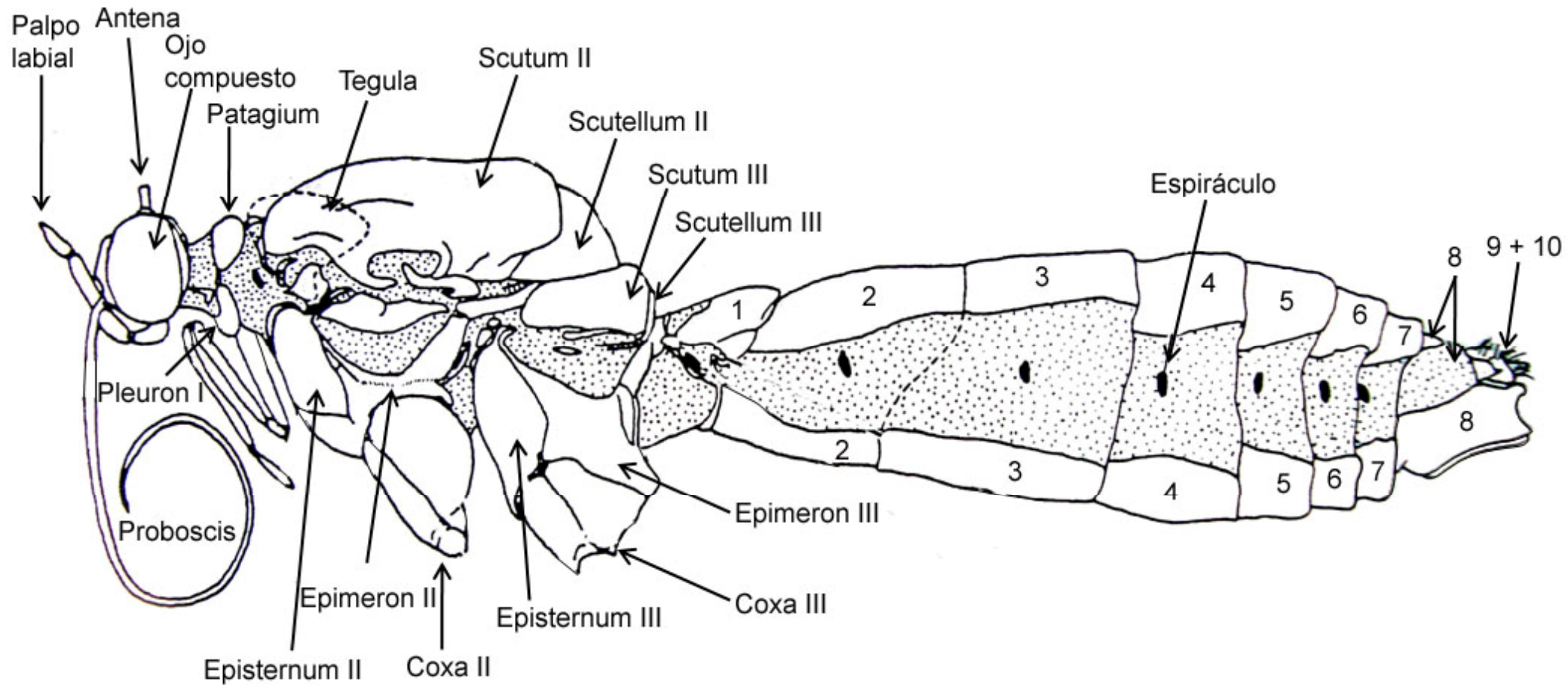


**Gobierno
de Chile**

En esta presentación...

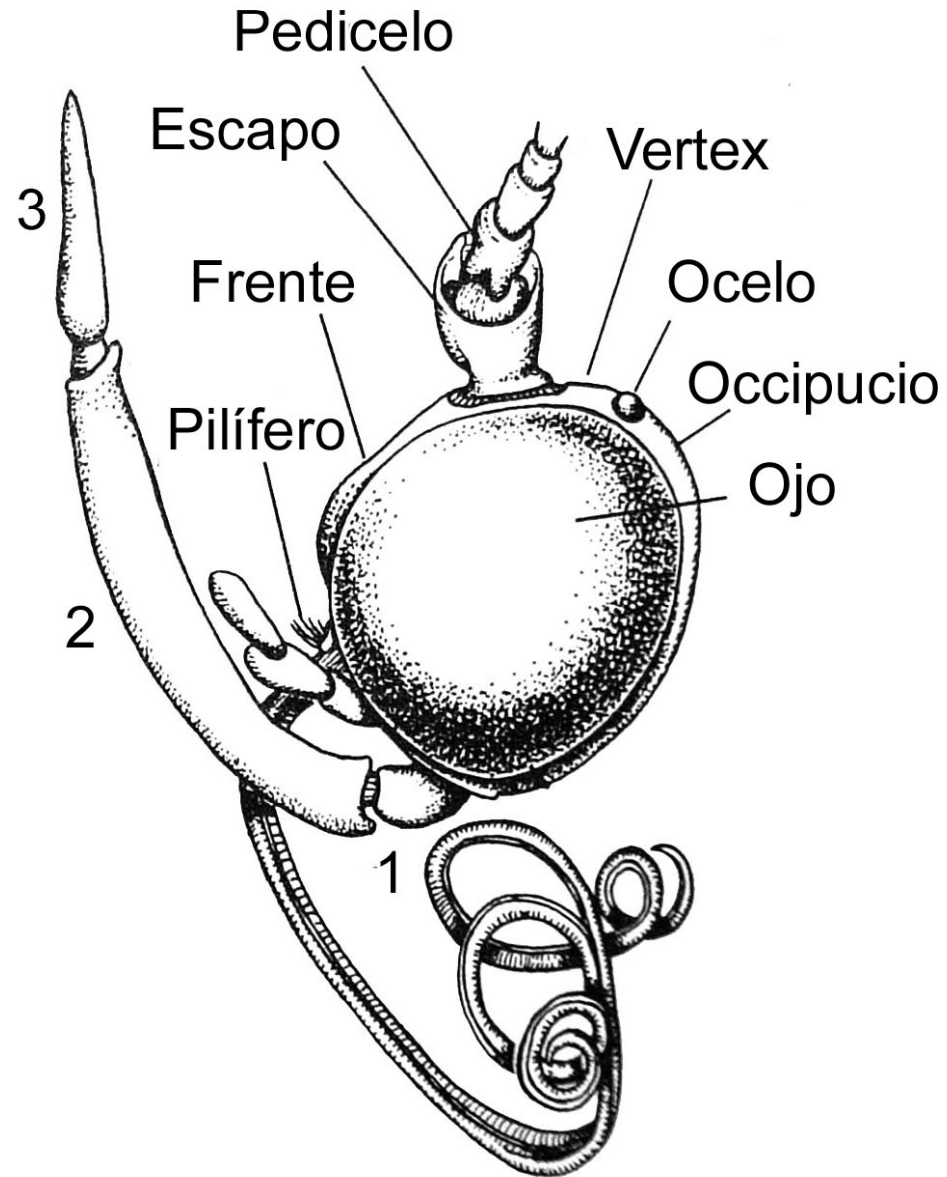
- Características de Lepidoptera (adultos y larvas)
 - genitalia adultos
 - caracteres larvarios
- Características de Tortricidae
- Características de *Lobesia botrana*
 - adultos (genitalia)
 - larvas (quetotaxia y otros caracteres)
 - pupas

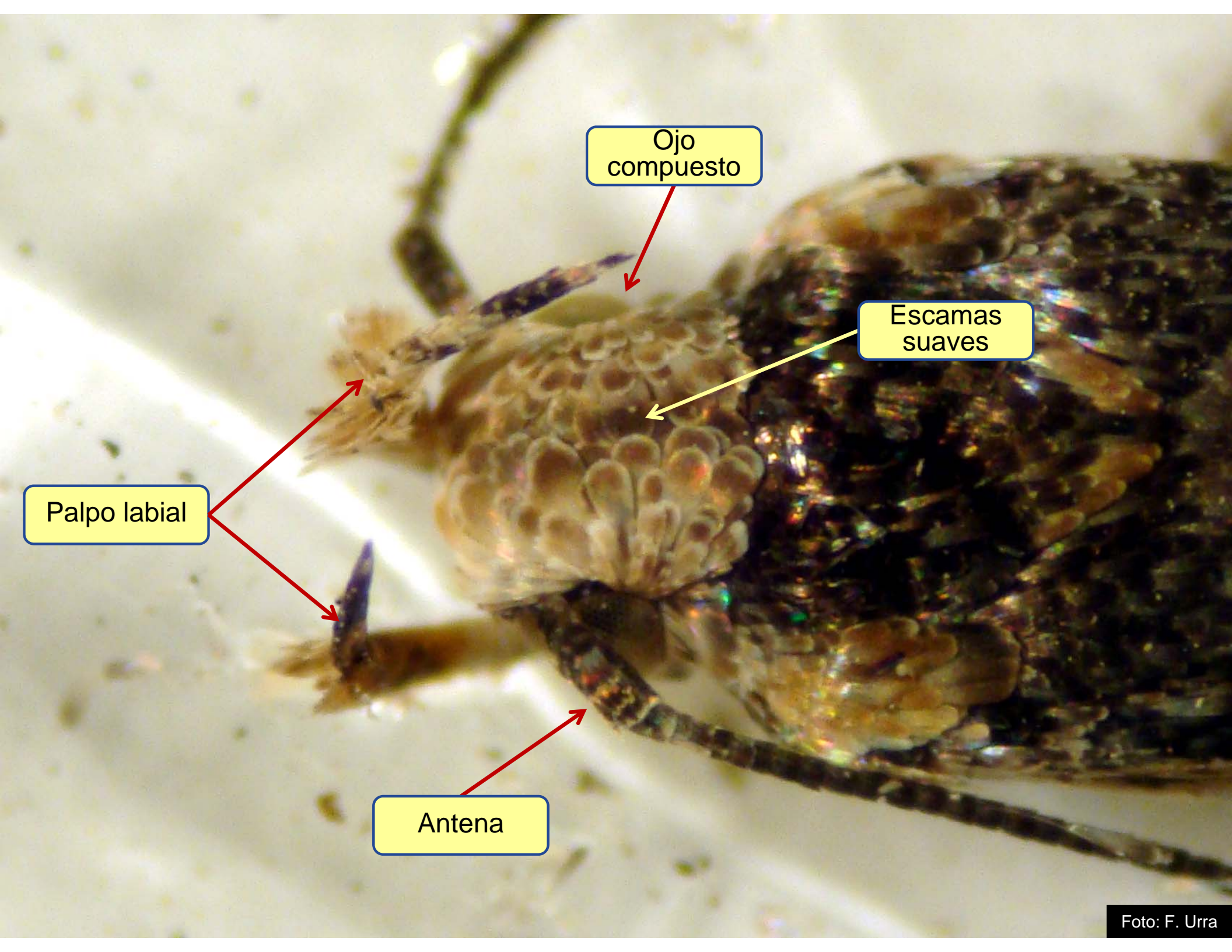
Morfología Lepidoptera adultos



Cabeza

- Ocelos presentes o ausentes (2)
- Antenas variables: filiforme, capitada, plumosas, pectinadas
- Chaetosemata presente o ausente
- Palpos maxilares pequeños, 1 a 4 segmentos, también ausentes
- Palpos labiales grandes de 3 segmentos
- Espiritrompa o haustelo con o sin escamas
- Escamas suaves (softscale) o hirsutas (roughscale)





Ojo
compuesto

Escamas
suaves

Palpo labial

Antena

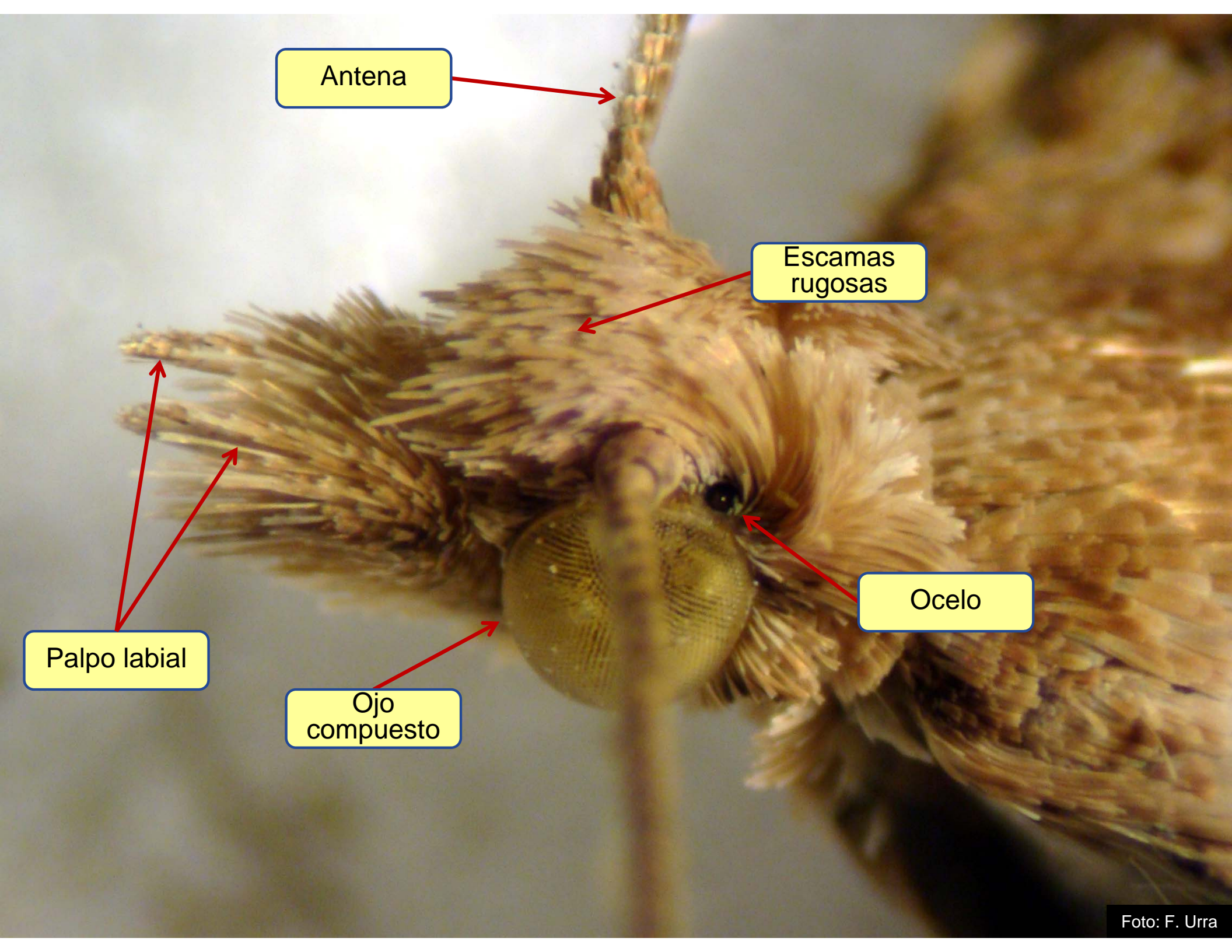
Antena

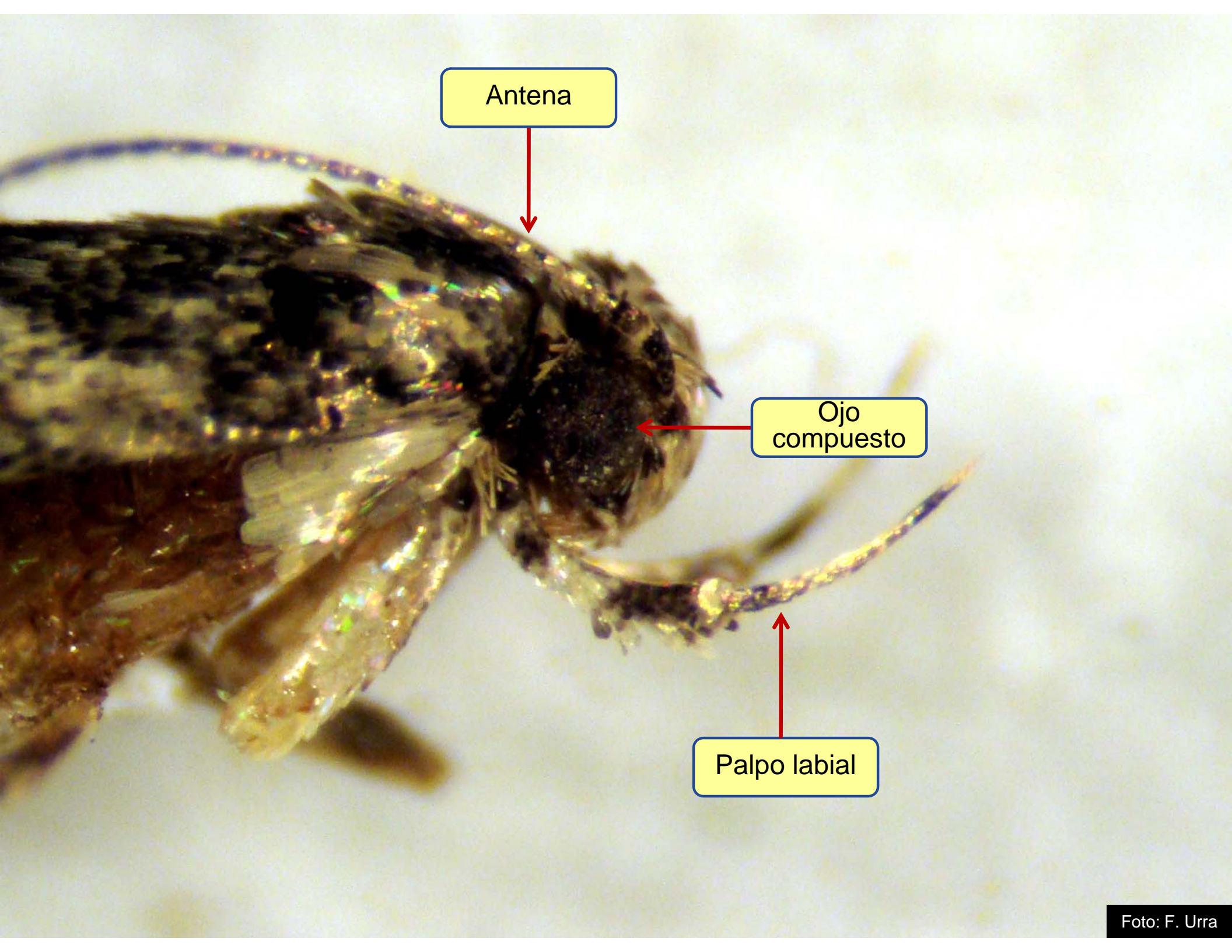
Escamas
rugosas

Palpo labial

Ojo
compuesto

Ocelo

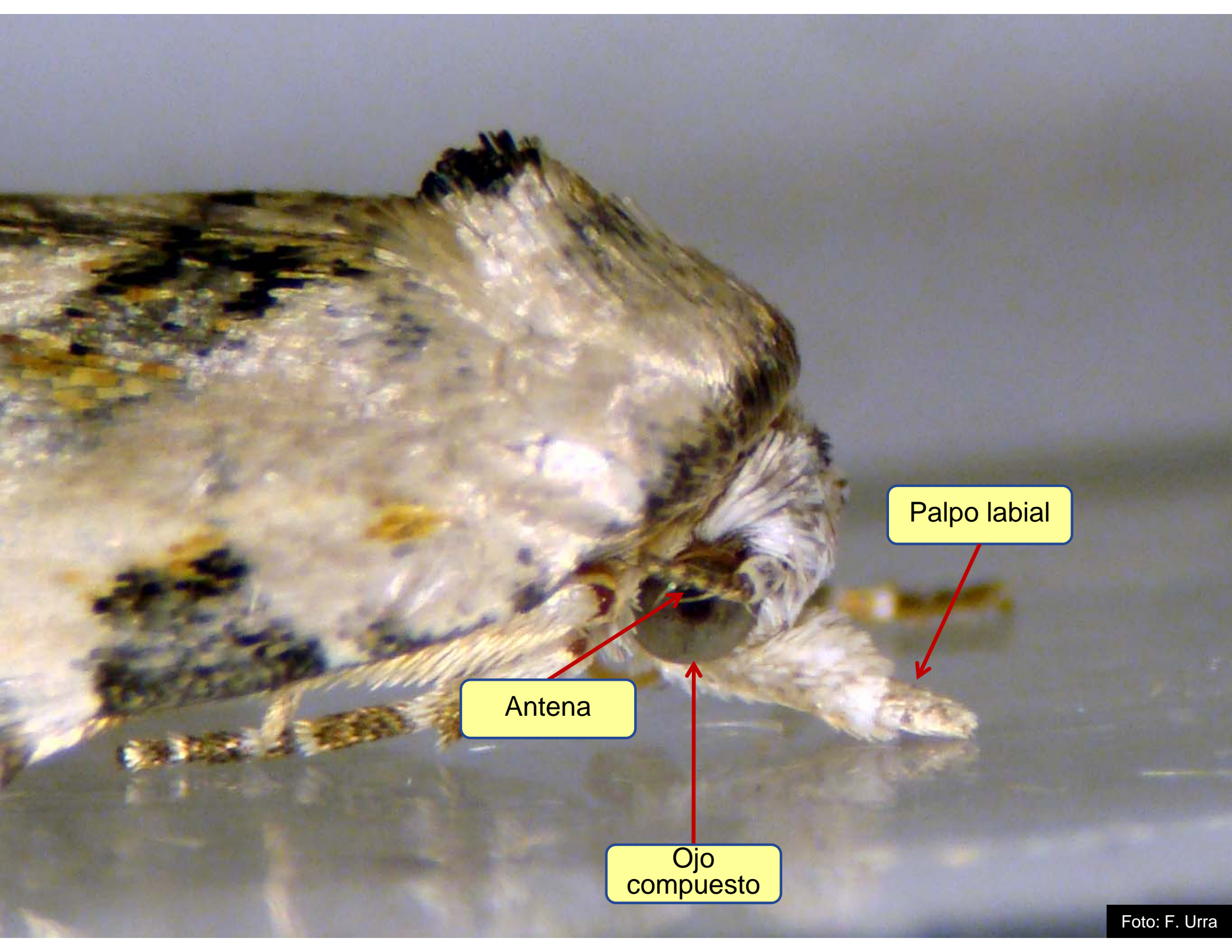




Antena

Ojo
compuesto

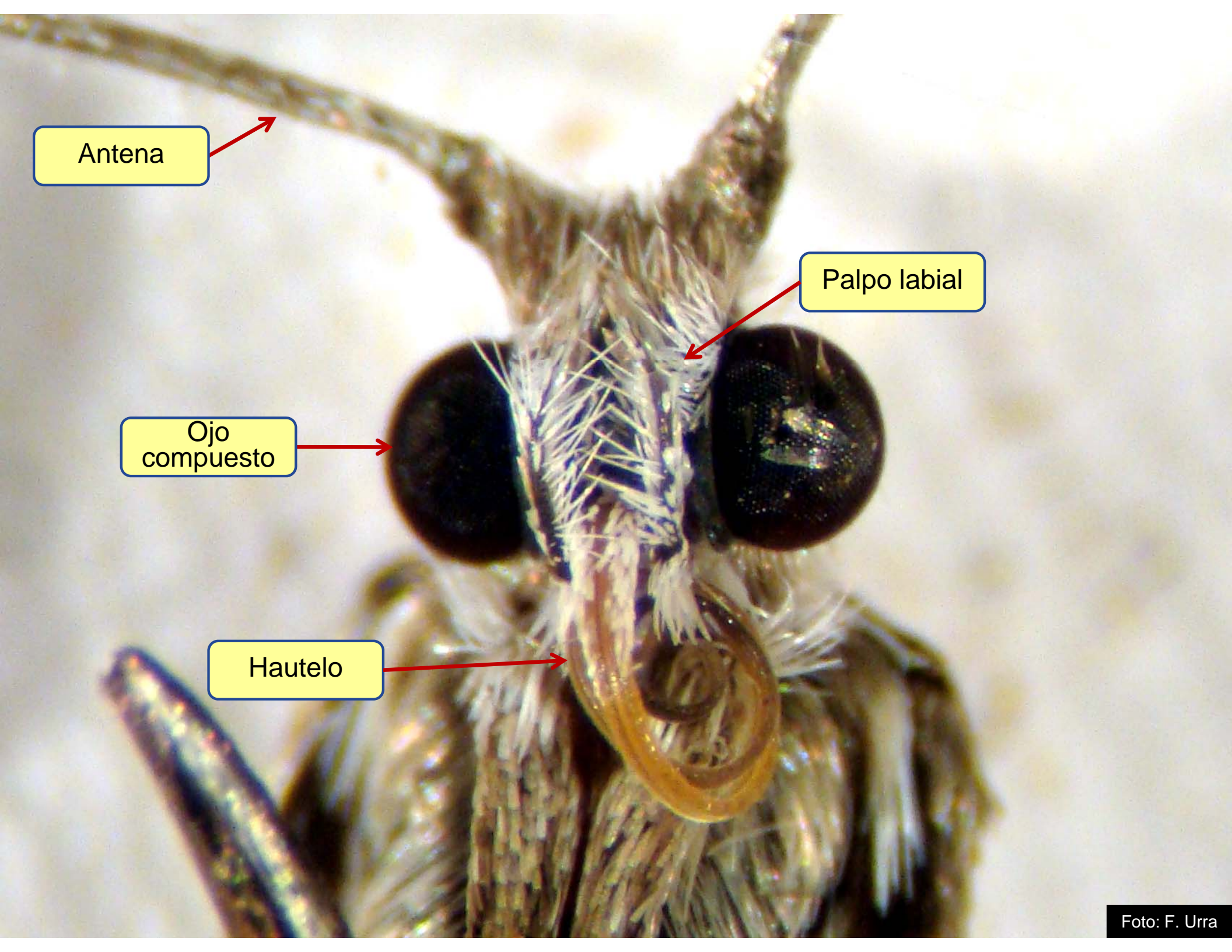
Palpo labial



Antena

Ojo
compuesto

Palpo labial

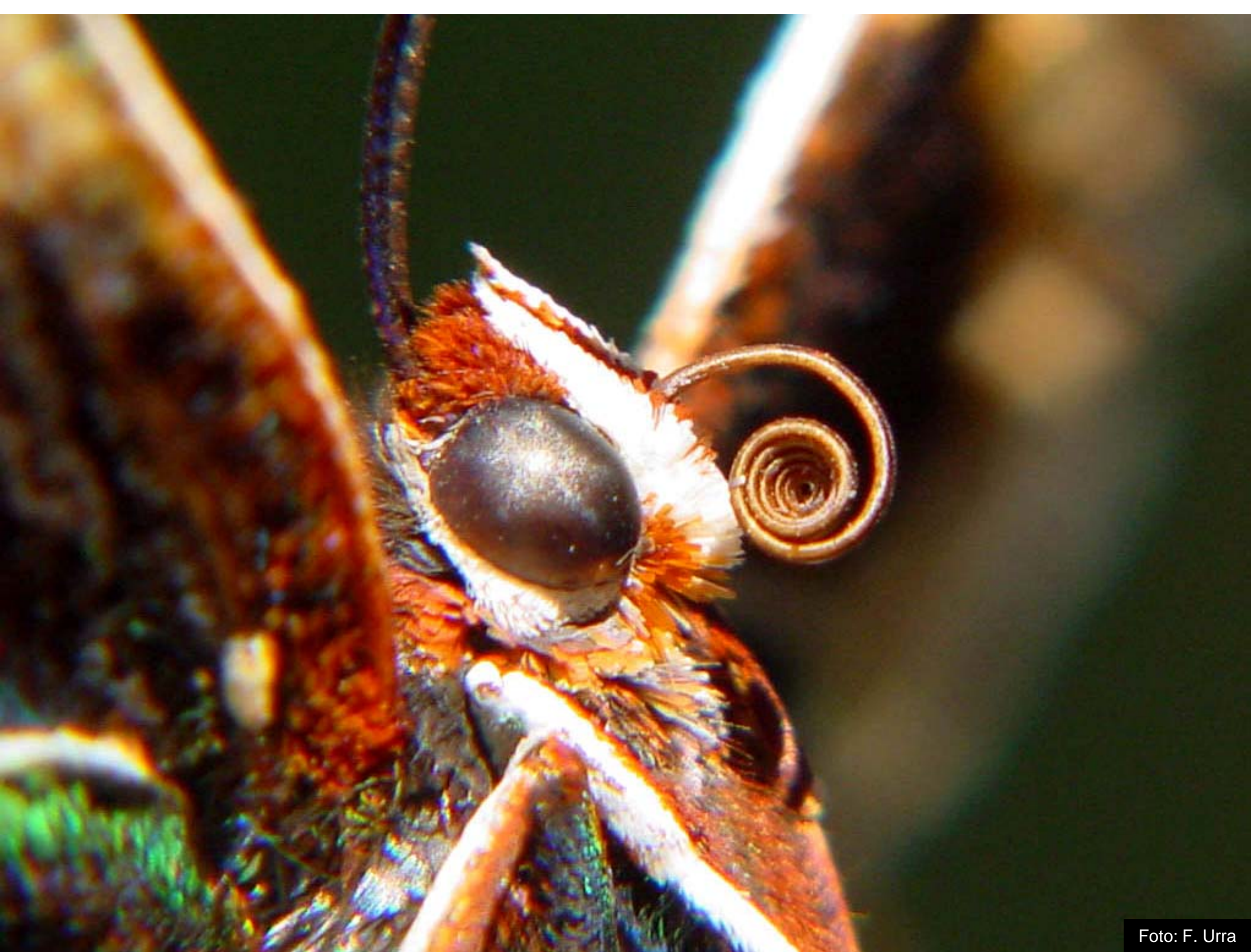


Antena

Palpo labial

Ojo
compuesto

Hautelo



Tórax

Palpo labial

Ojo compuesto

Patagium

Tegula

Base del ala

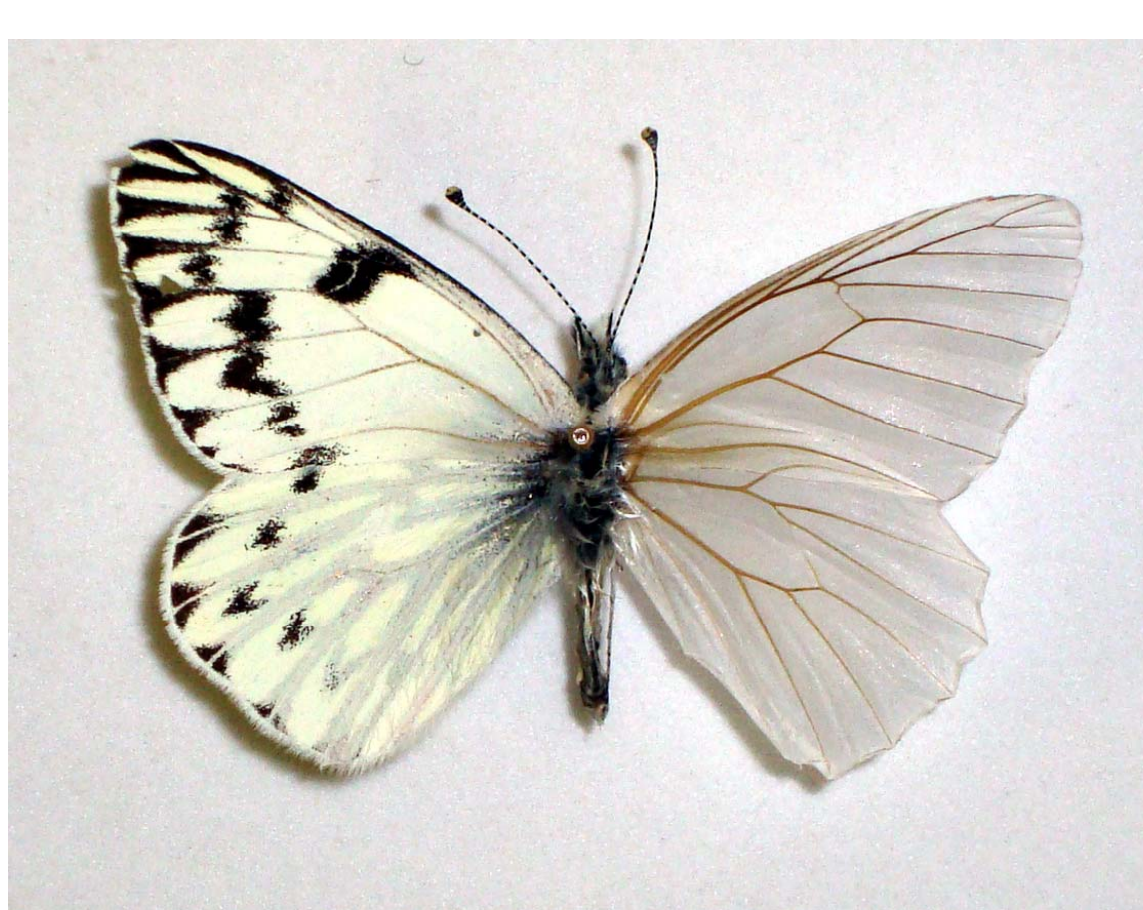
Ala anterior

Scutellum II

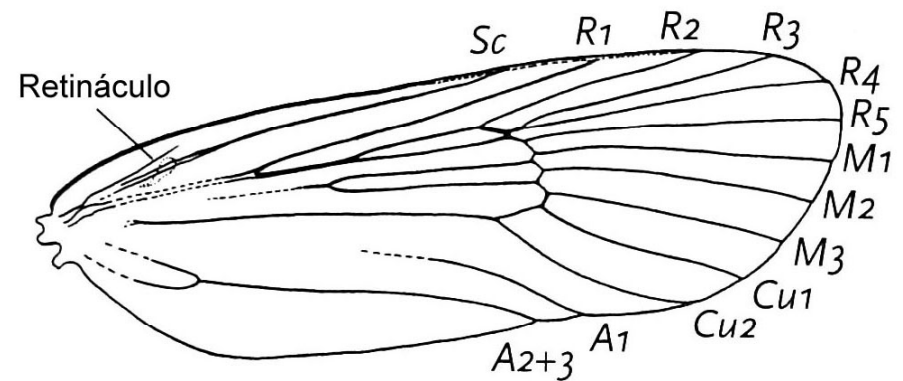
Scutum II

Alas de Lepidoptera

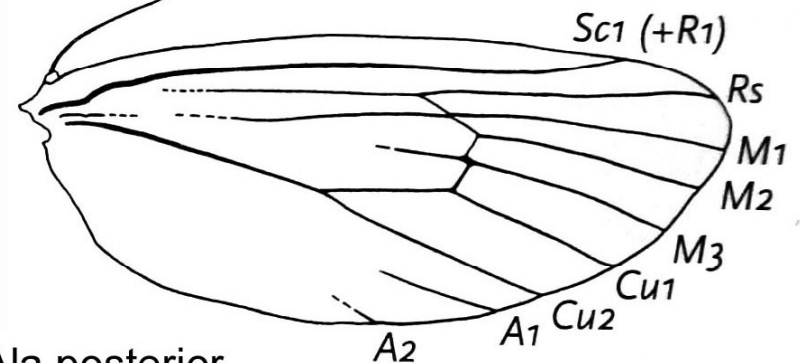
- Membranosas, cubiertas por escamas
- Seis principales series de venas: C, Sc, R, M, Cu, A.
- Acoplamiento mediante yugo, frénulo-retináculo, amplexiforme.



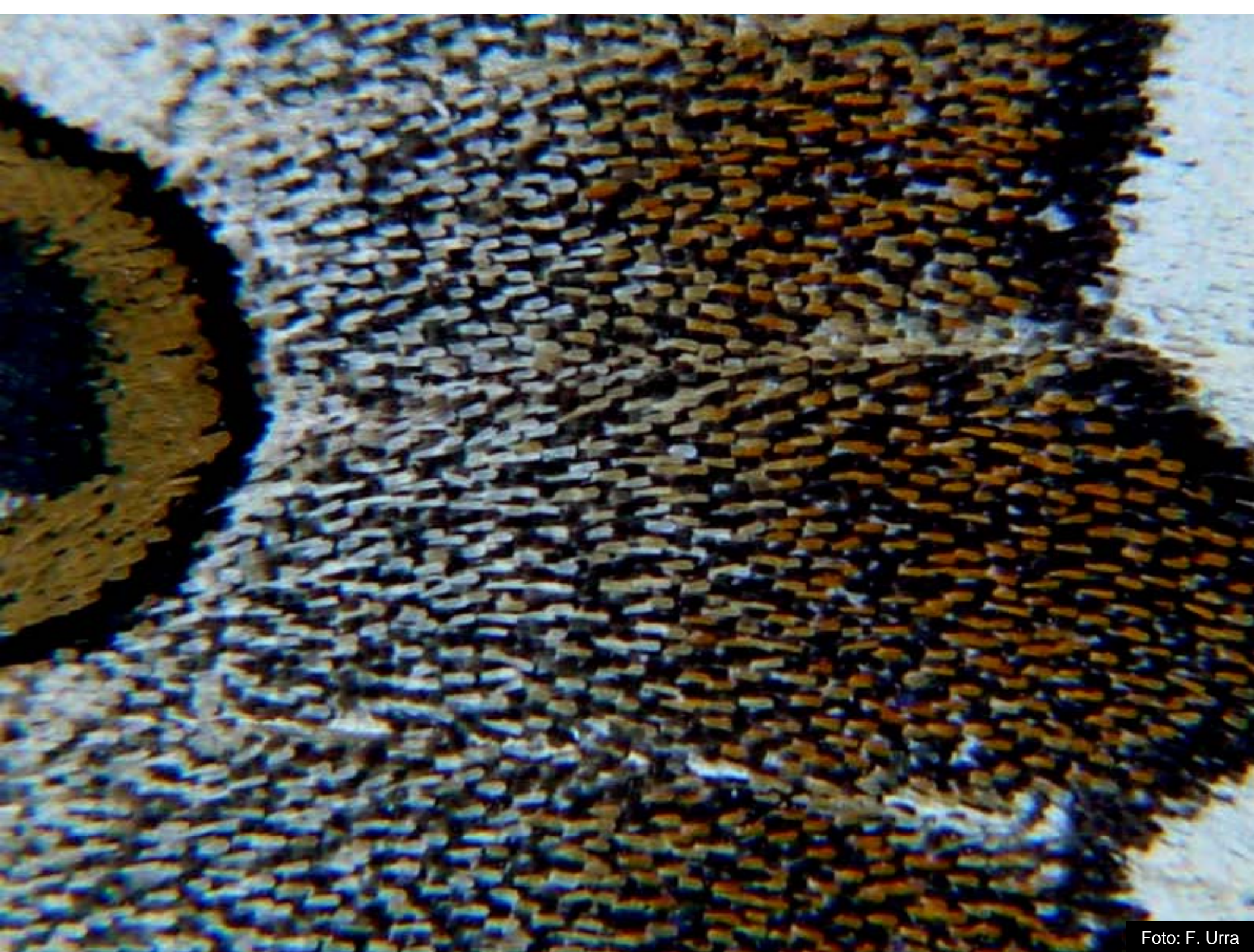
Ala anterior



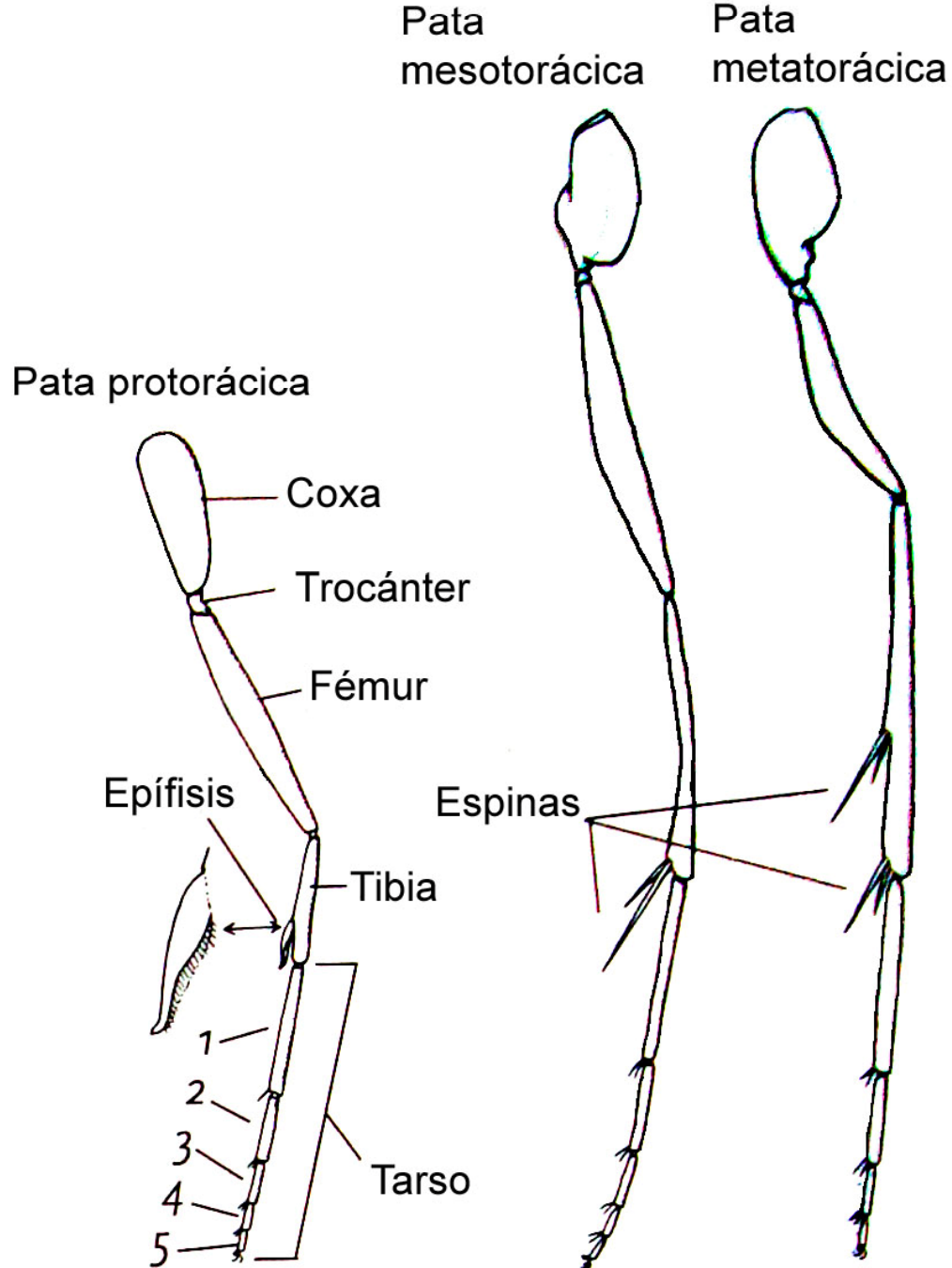
Frénulo

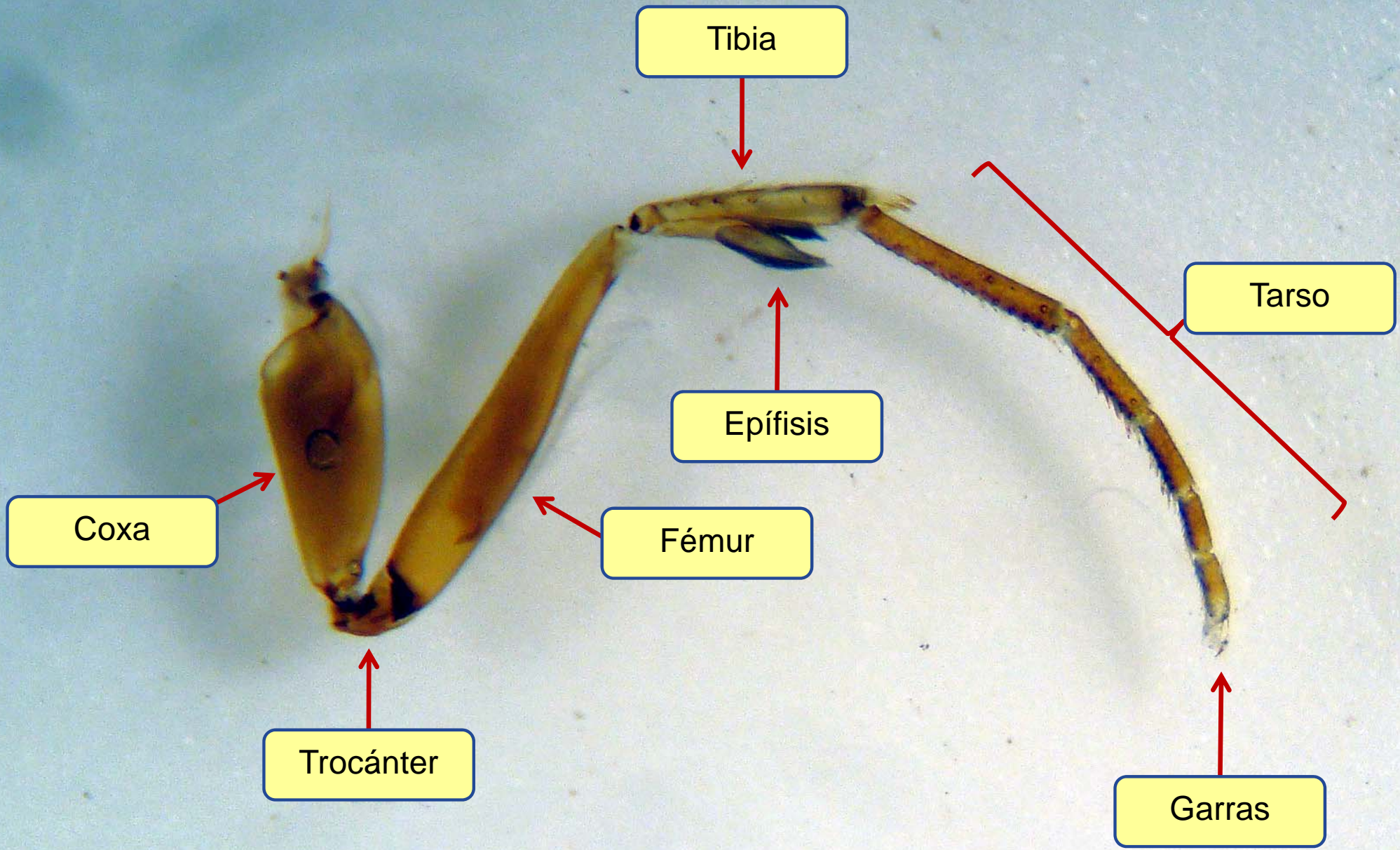


Ala posterior

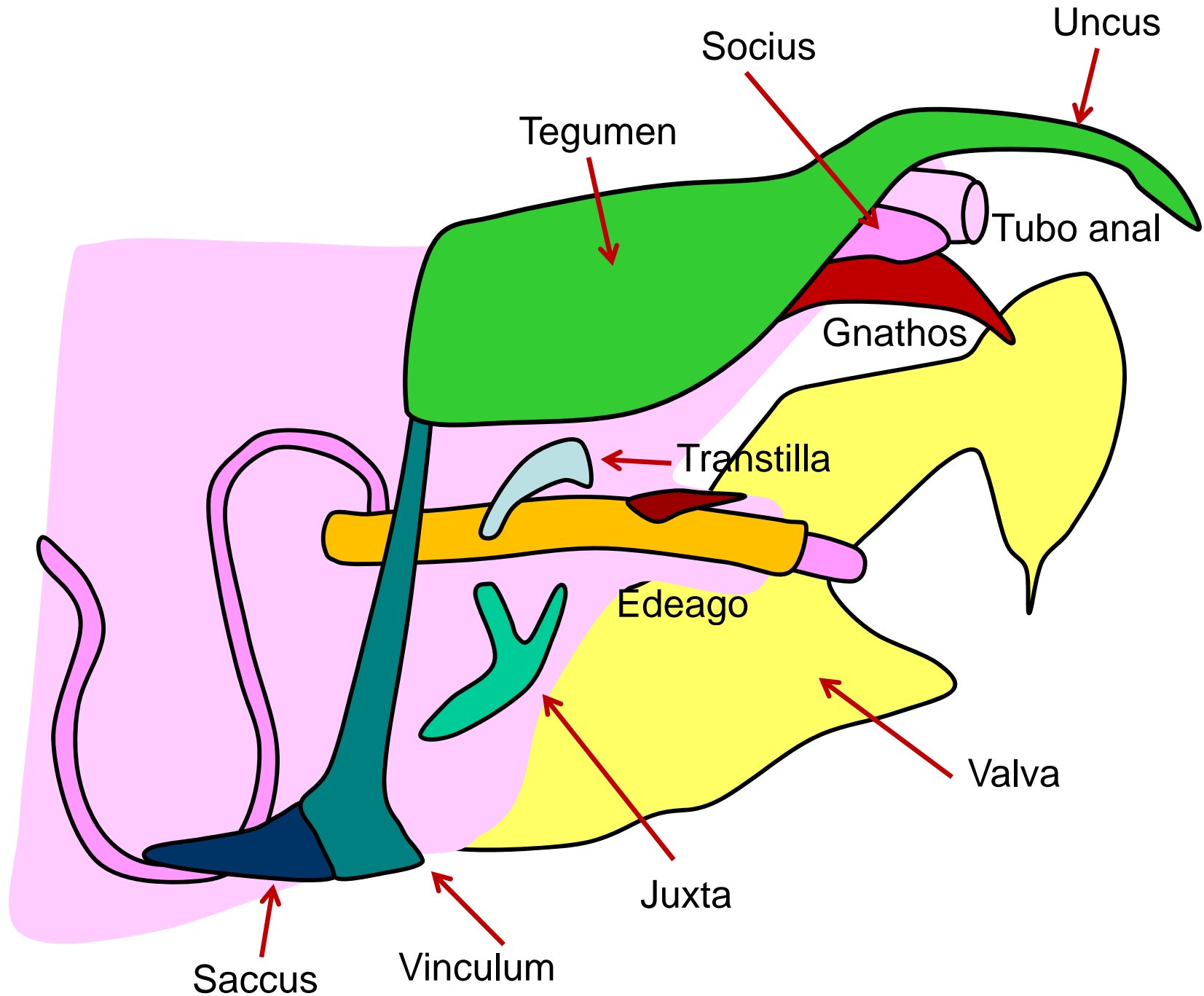


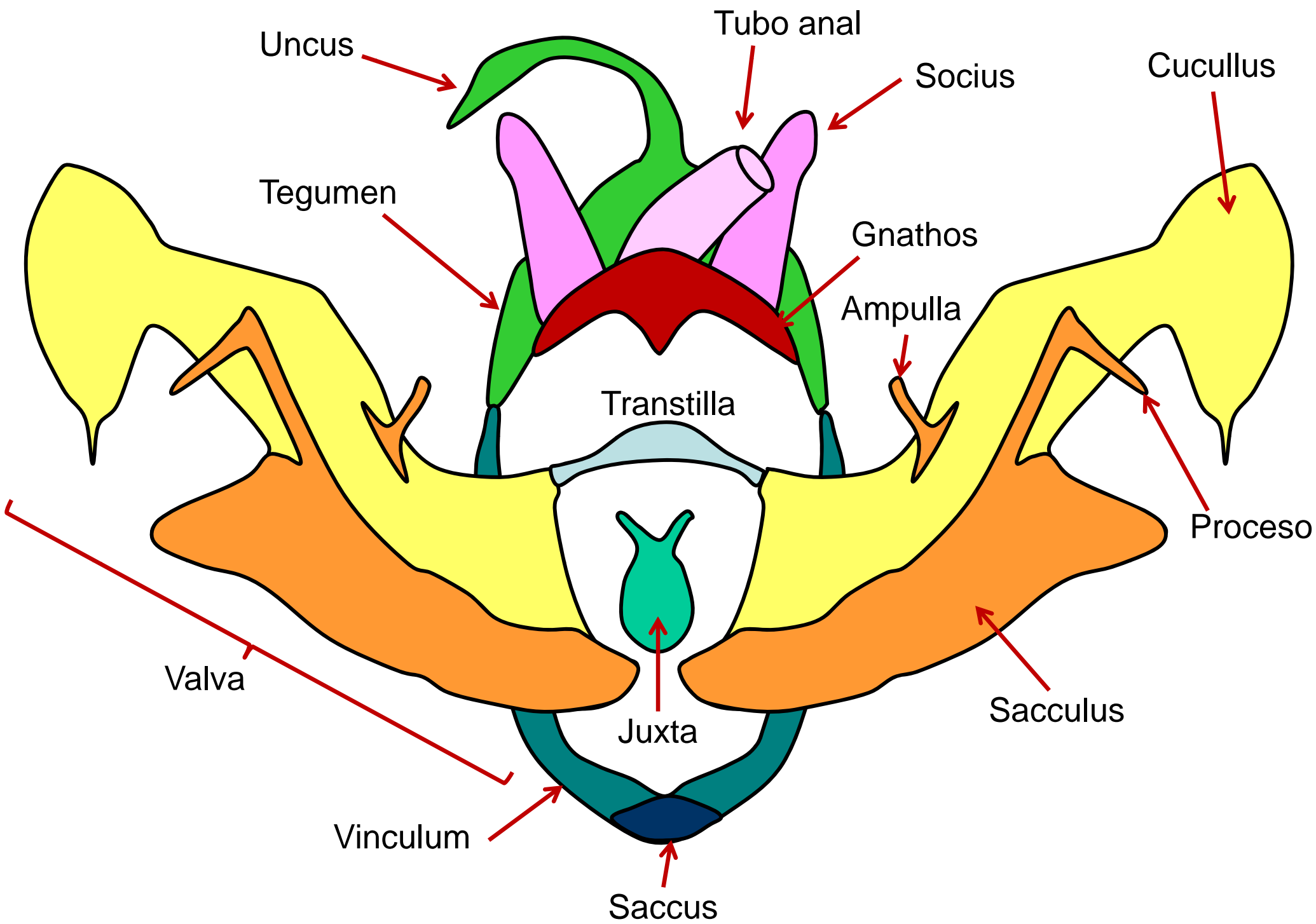
Patas de Lepidoptera

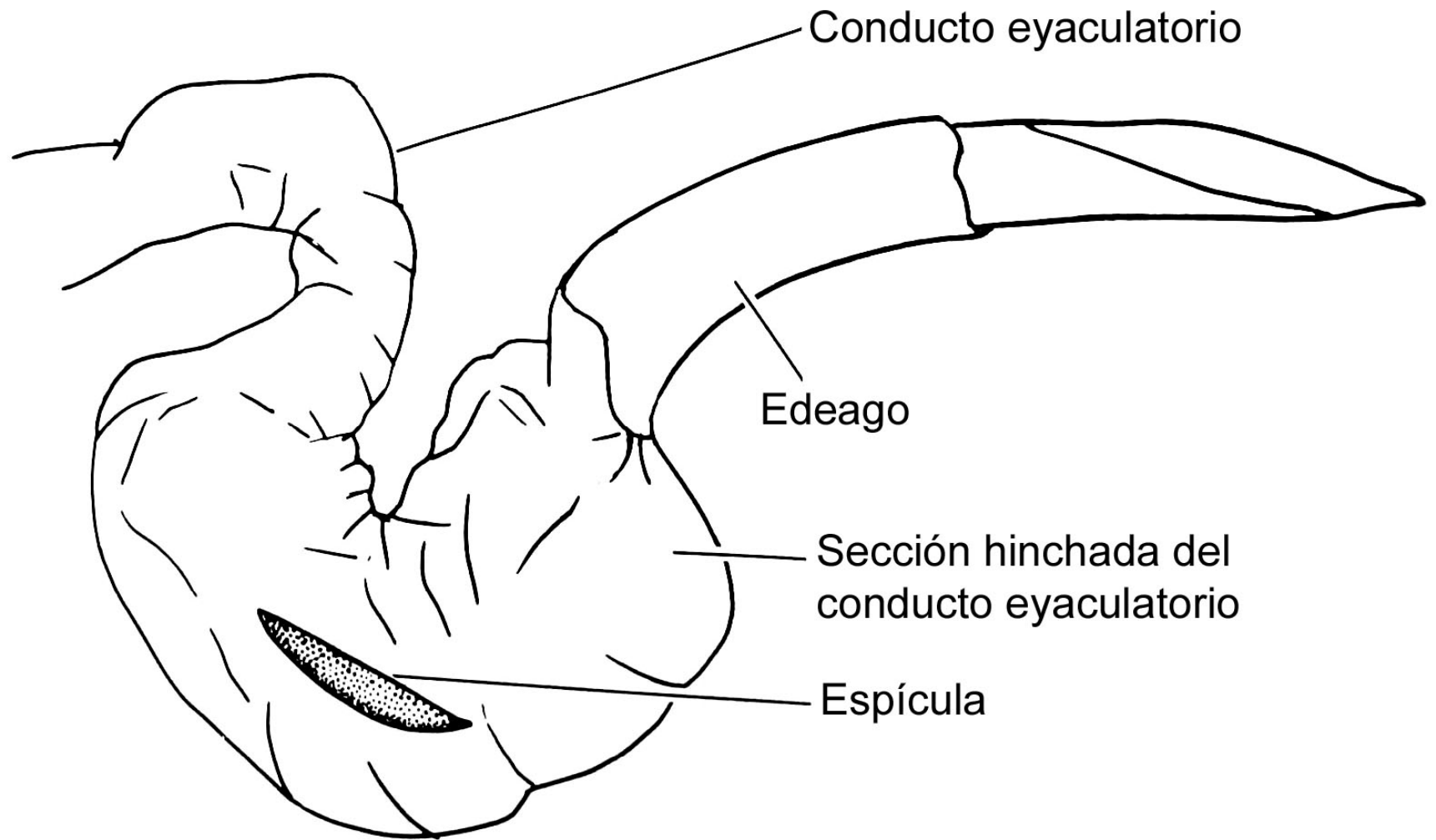




Genitalia masculina







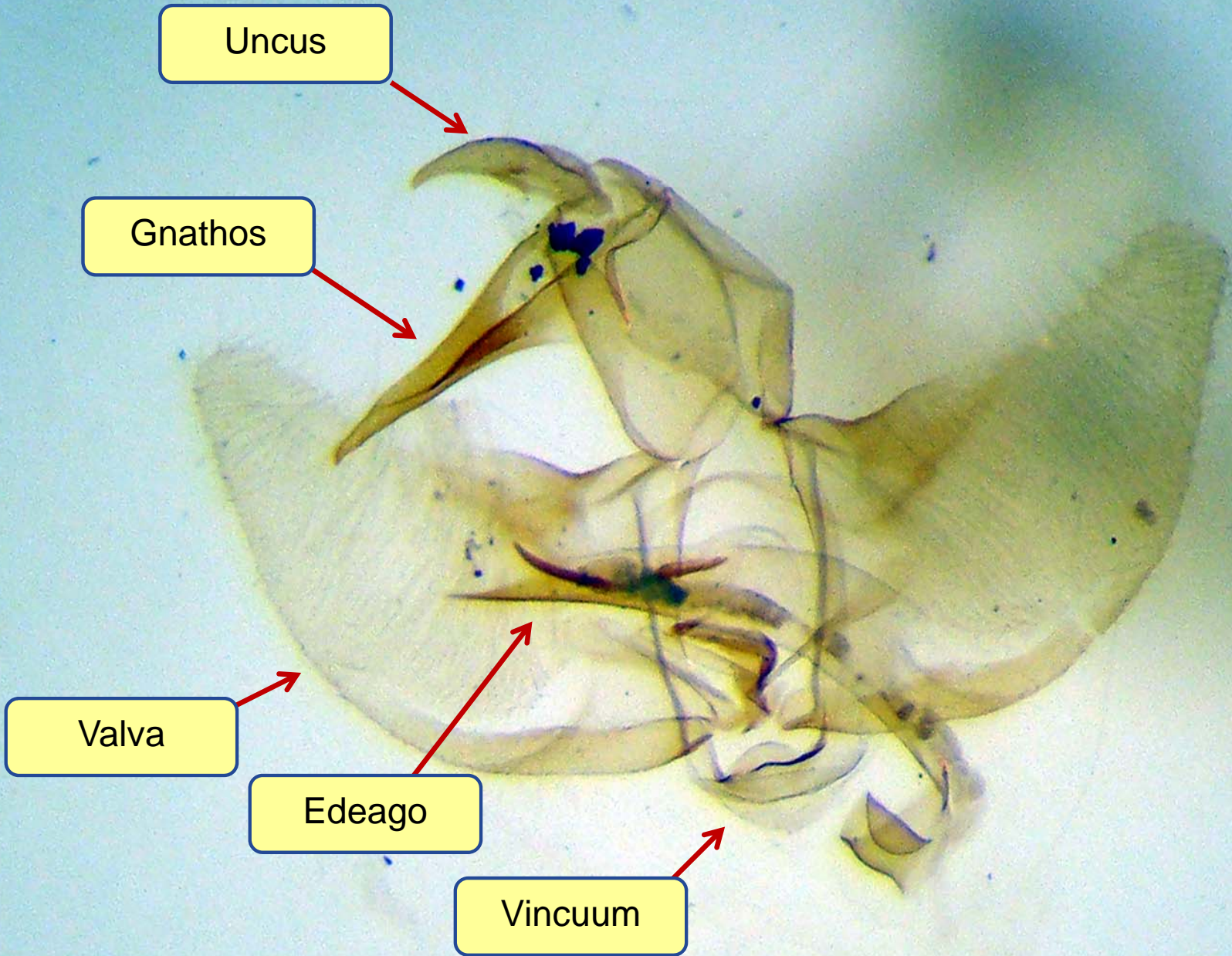
Uncus

Gnathos

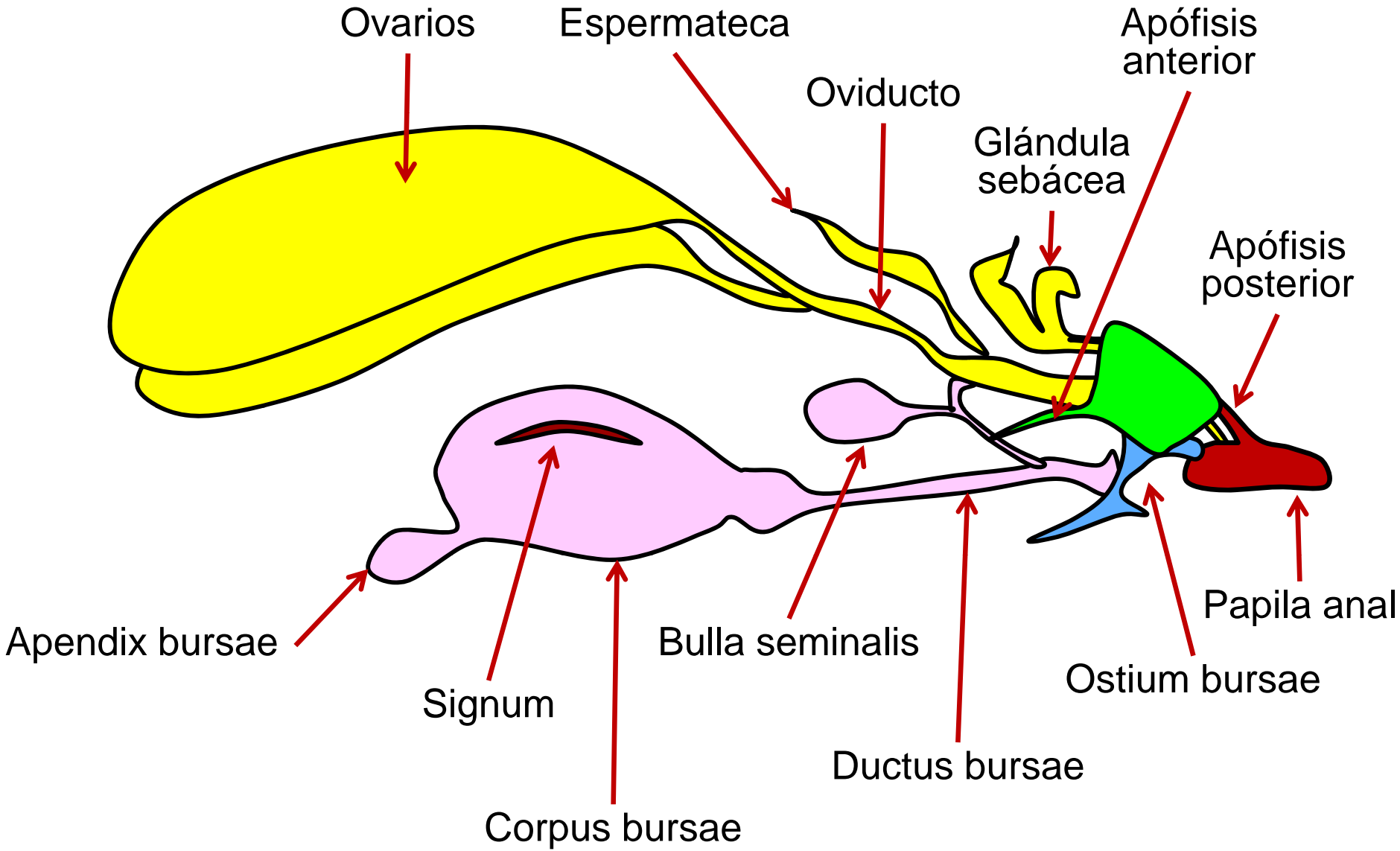
Valva

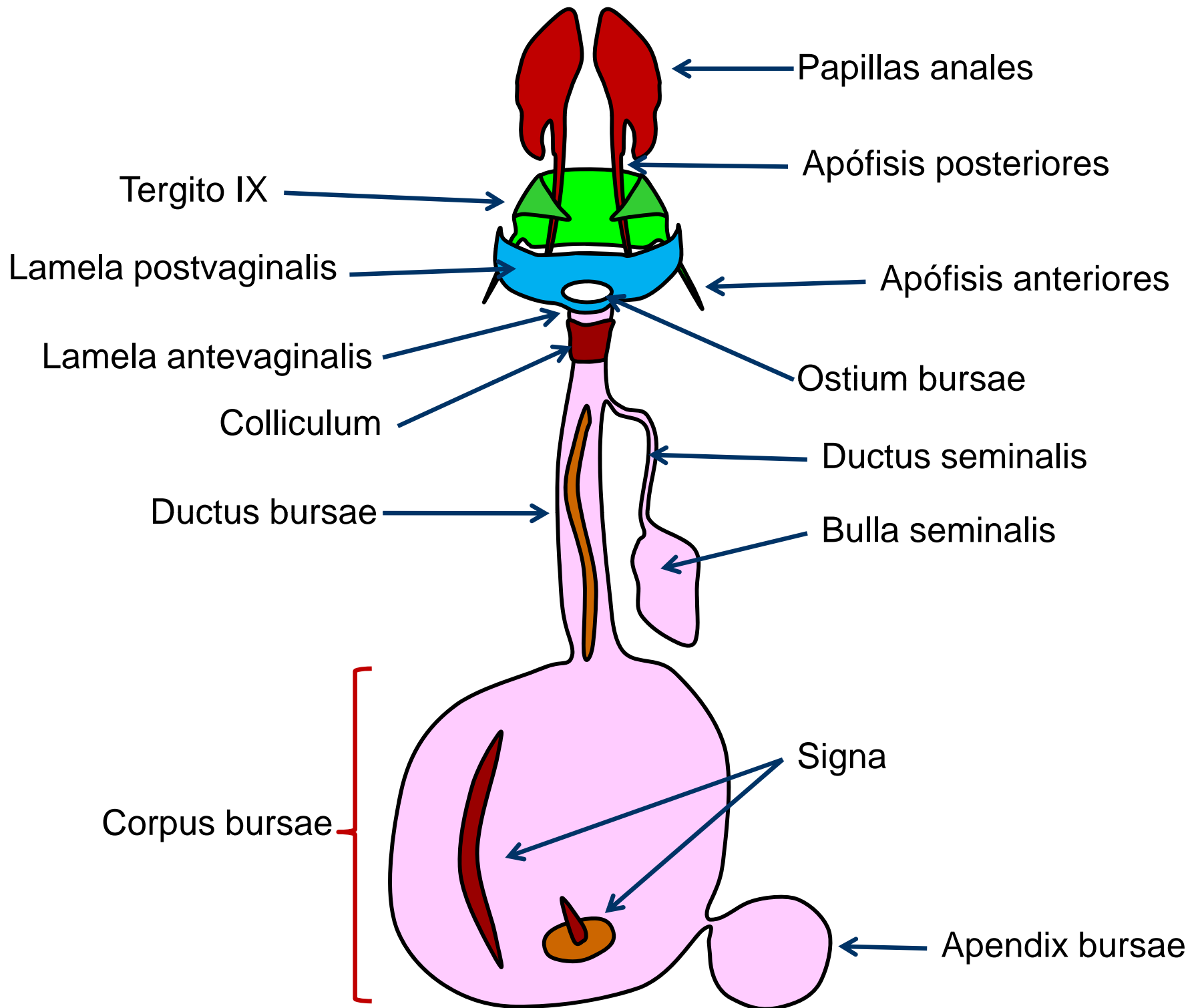
Edeago

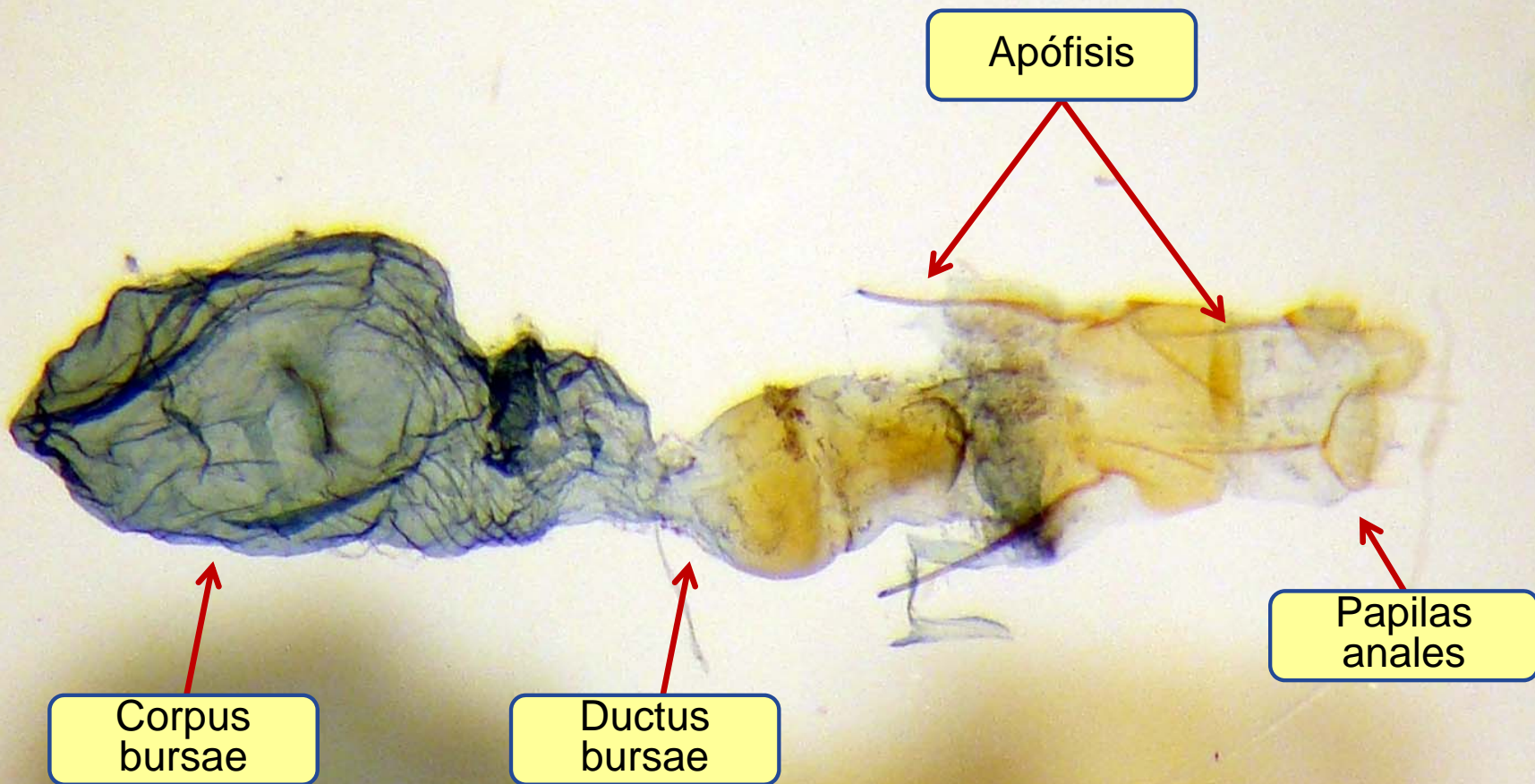
Vincuum



Genitalia femenina

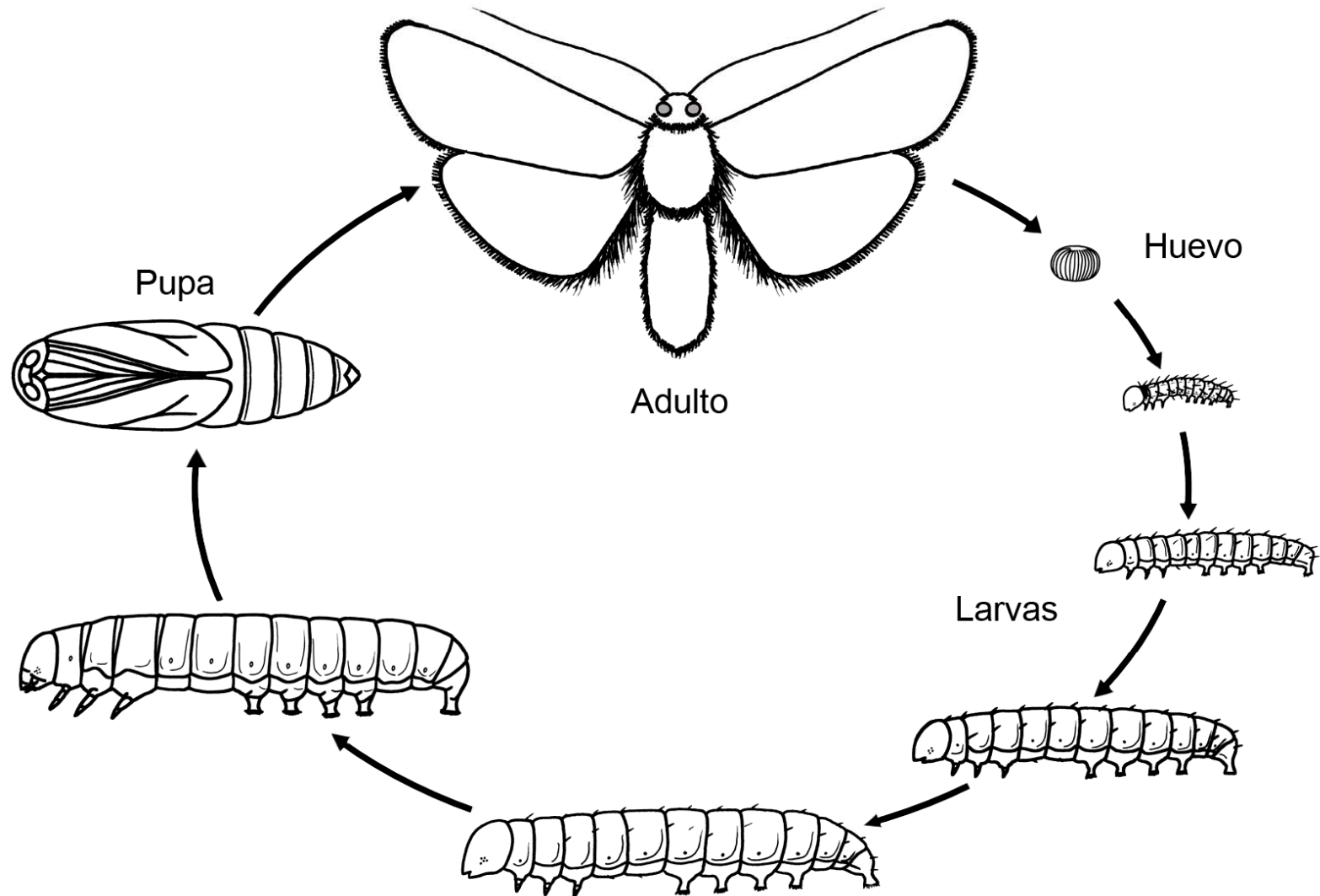






Biología de Lepidoptera

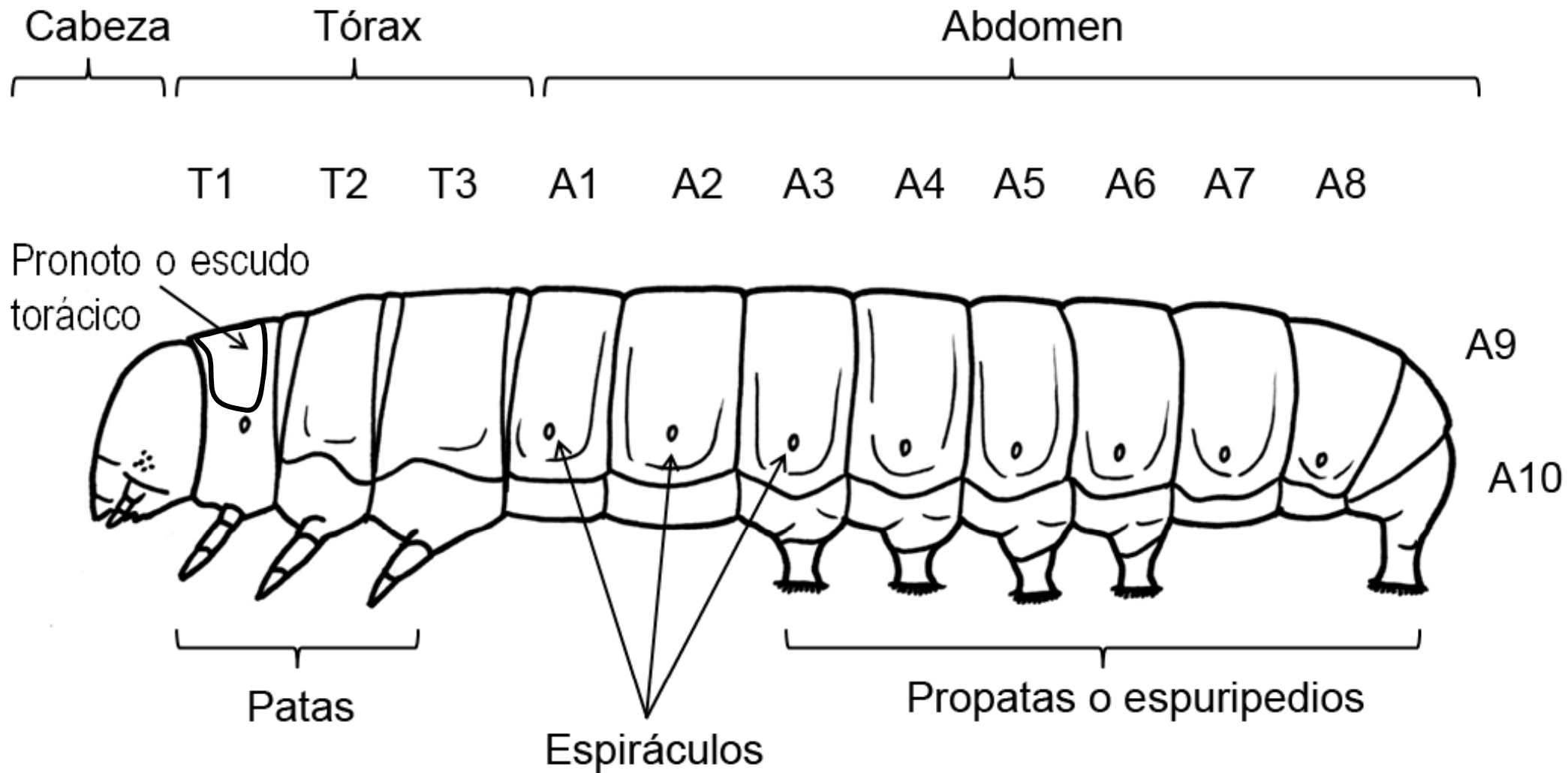
- Insectos holometábolos (metamorfosis completa)
- Estados: huevo - larvas - pupa - adulto (imago)

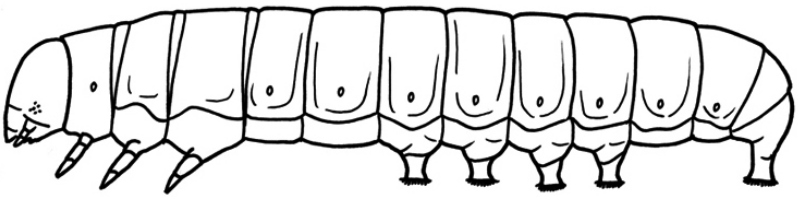




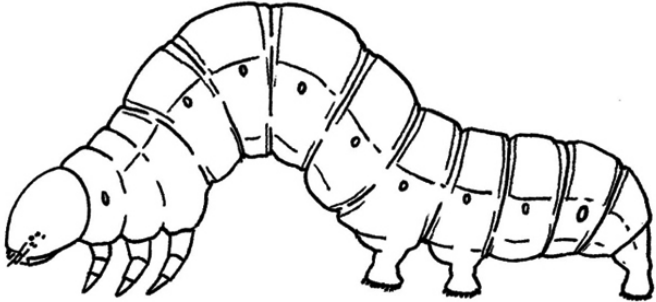
Estados de desarrollo de *Pieris brassicae* (Lepidoptera: Pieridae)
Fotografías profesor Jaime Apablaza.

Larvas de Lepidoptera

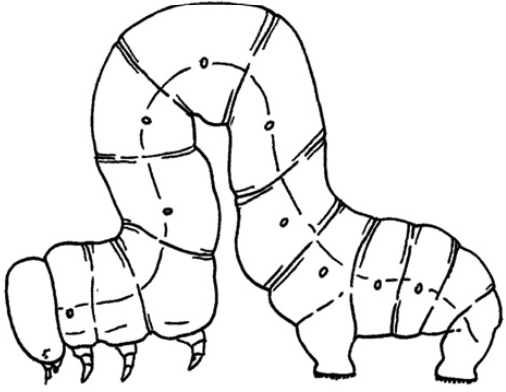




Eruciforme típica



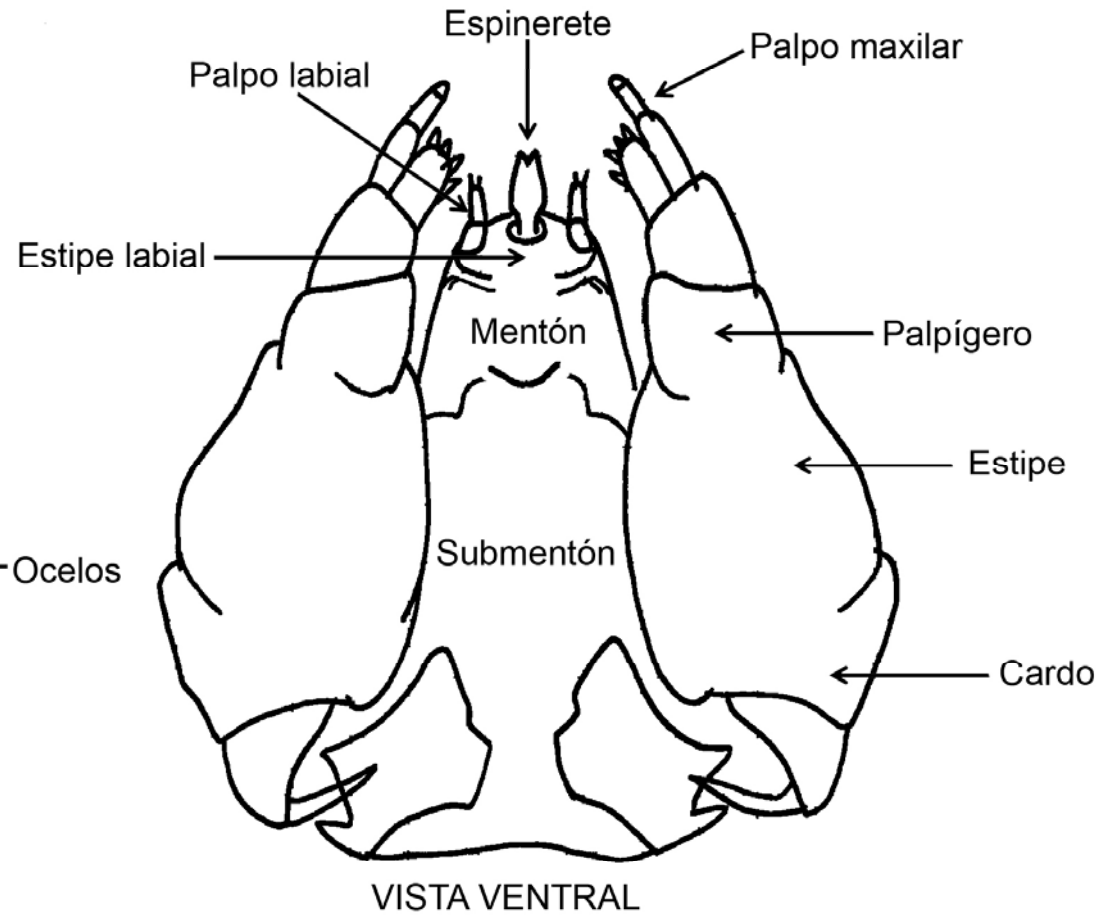
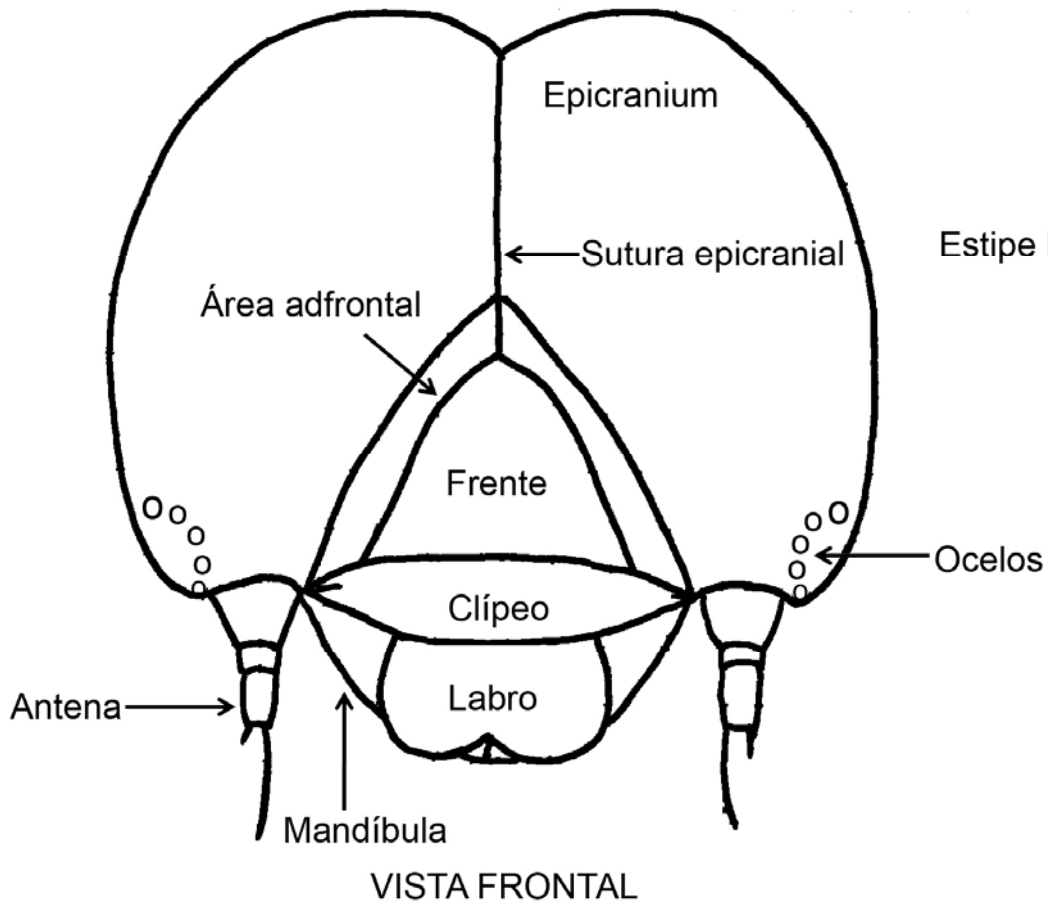
Eruciforme semiagrimensora



Eruciforme agrimensora



Cabeza



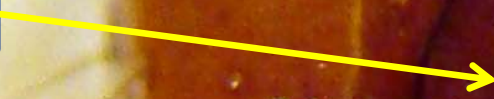
Área adfrontal

Frente

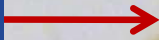
Antena

Mandíbula

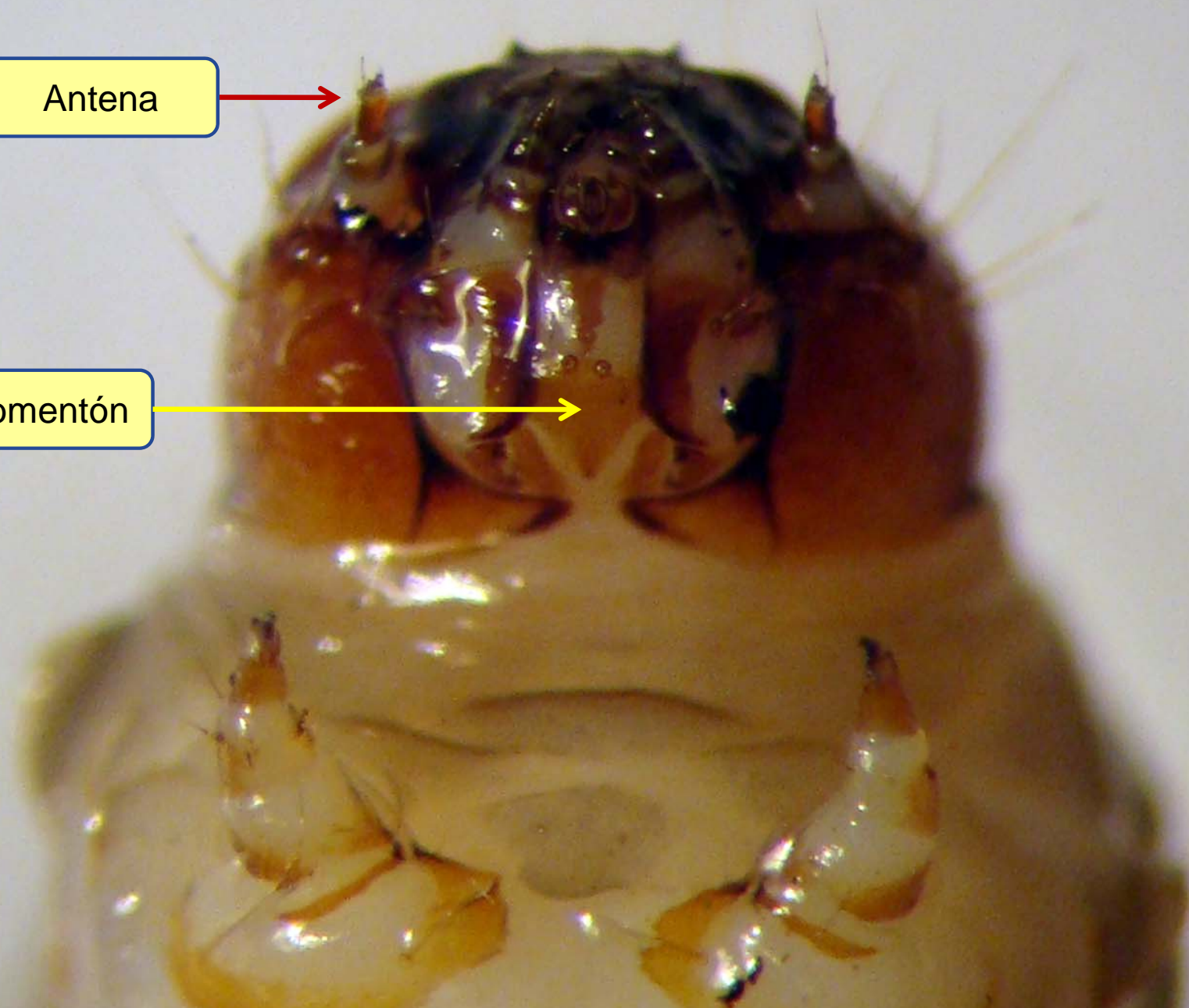
Hilandera



Antena



Submentón



Antena



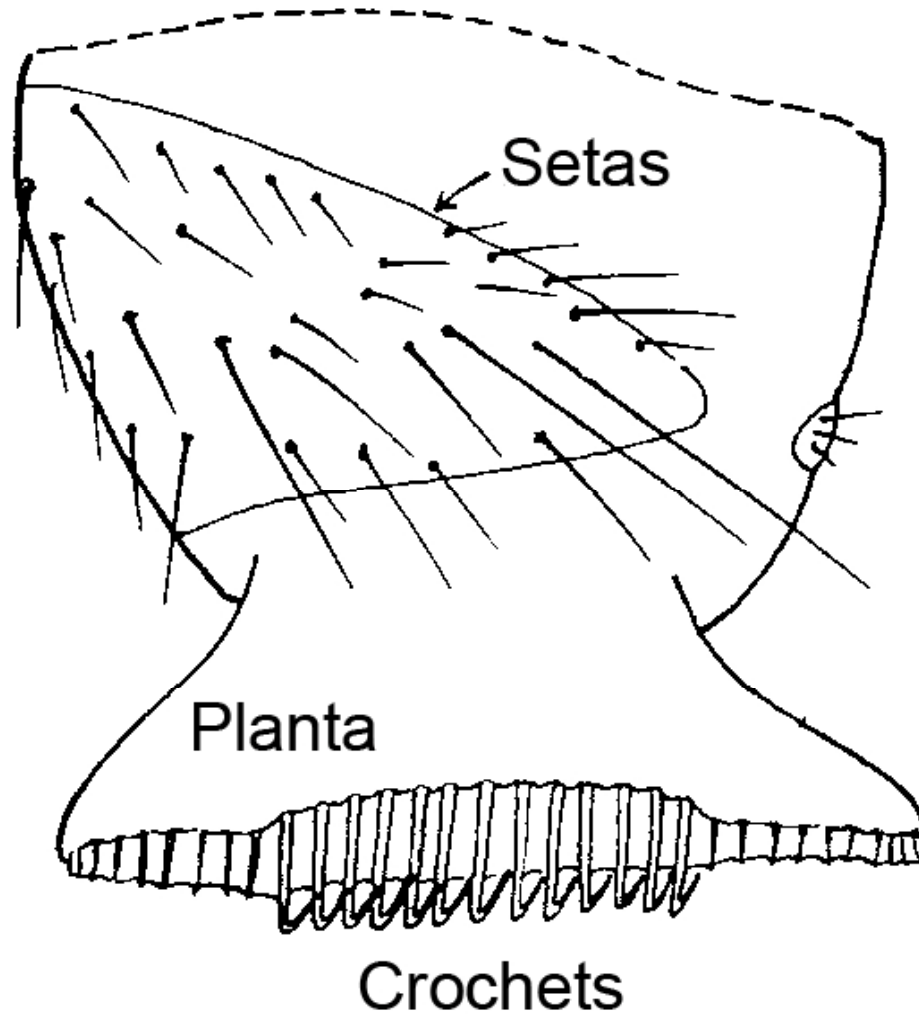
Submentón



Hendidura oval

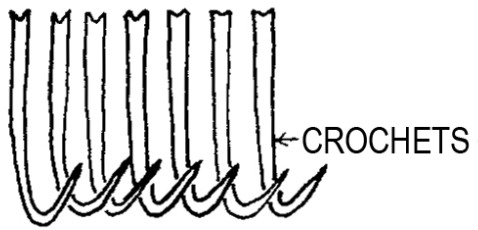


Propata o espuripedio



Crochets

UNISERIAL



UNIORDINAL

UNISERIAL



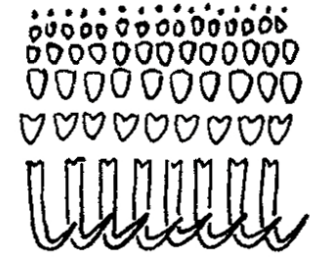
BIORDINAL

UNISERIAL



TRIORDINAL

MULTISERIAL

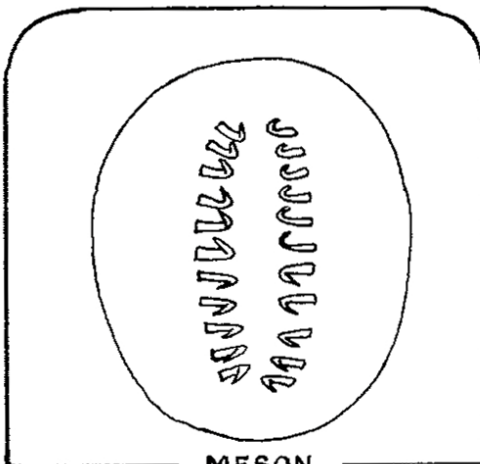


UNIORDINAL

← Dirección cefálica

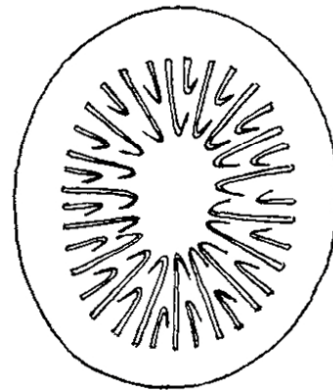
Dirección caudal →

Margen lateral

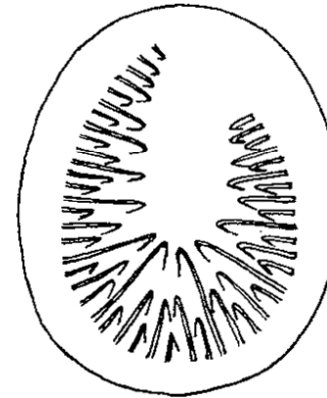


MESON

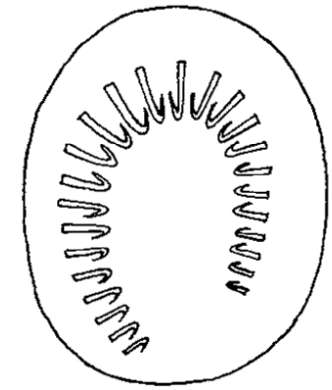
Uniordinal
Bandas transversales
Aegeridae



Biordinal
Círculo
Pyralidae



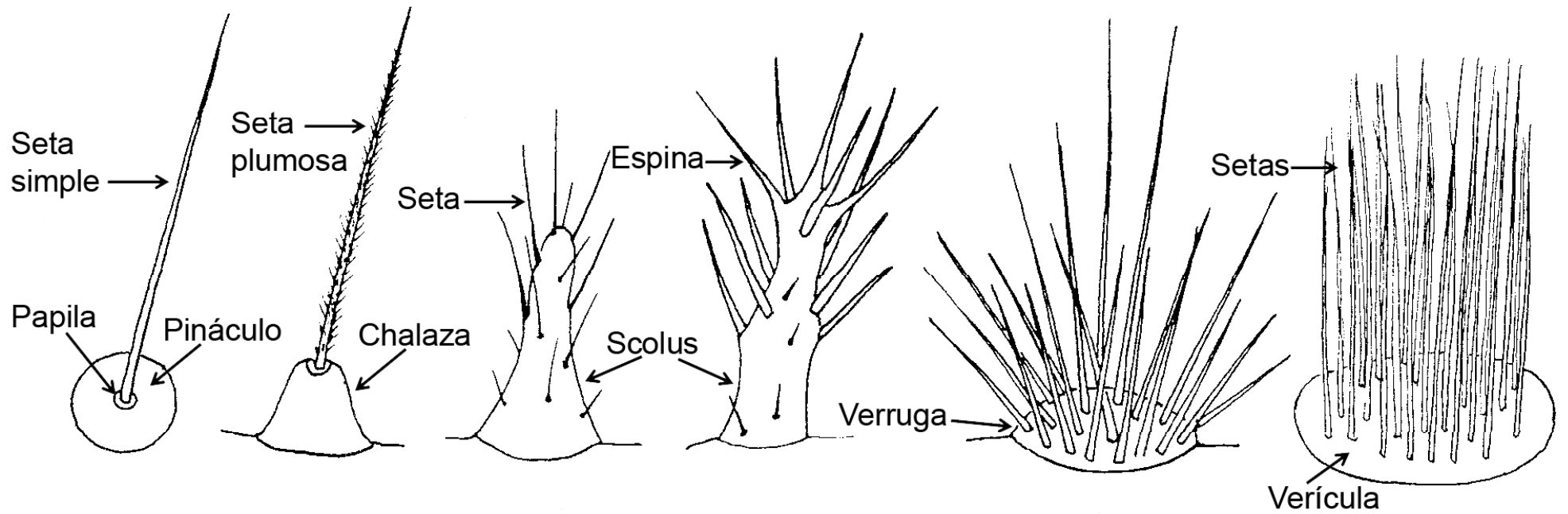
Triordinal
Penelipse mesal
Pyralidae



Uniordinal
Penelipse lateral
Psychidae

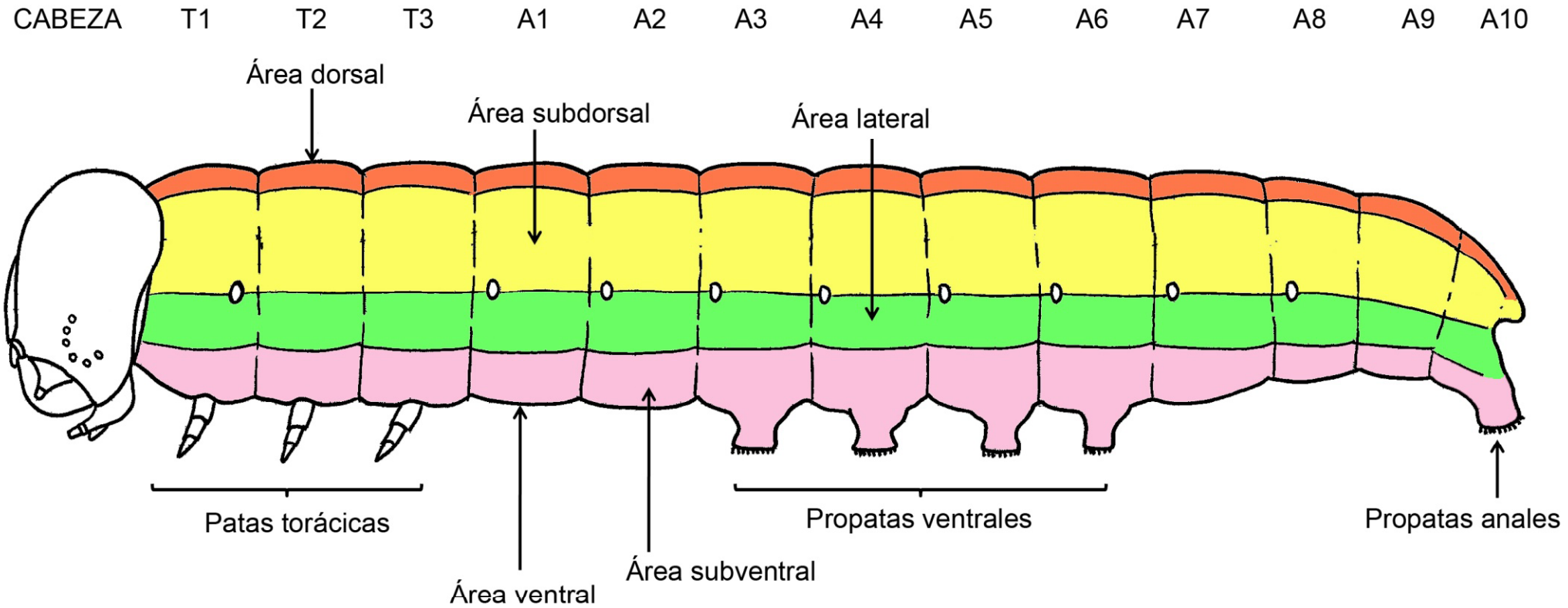


Armadura de la larva

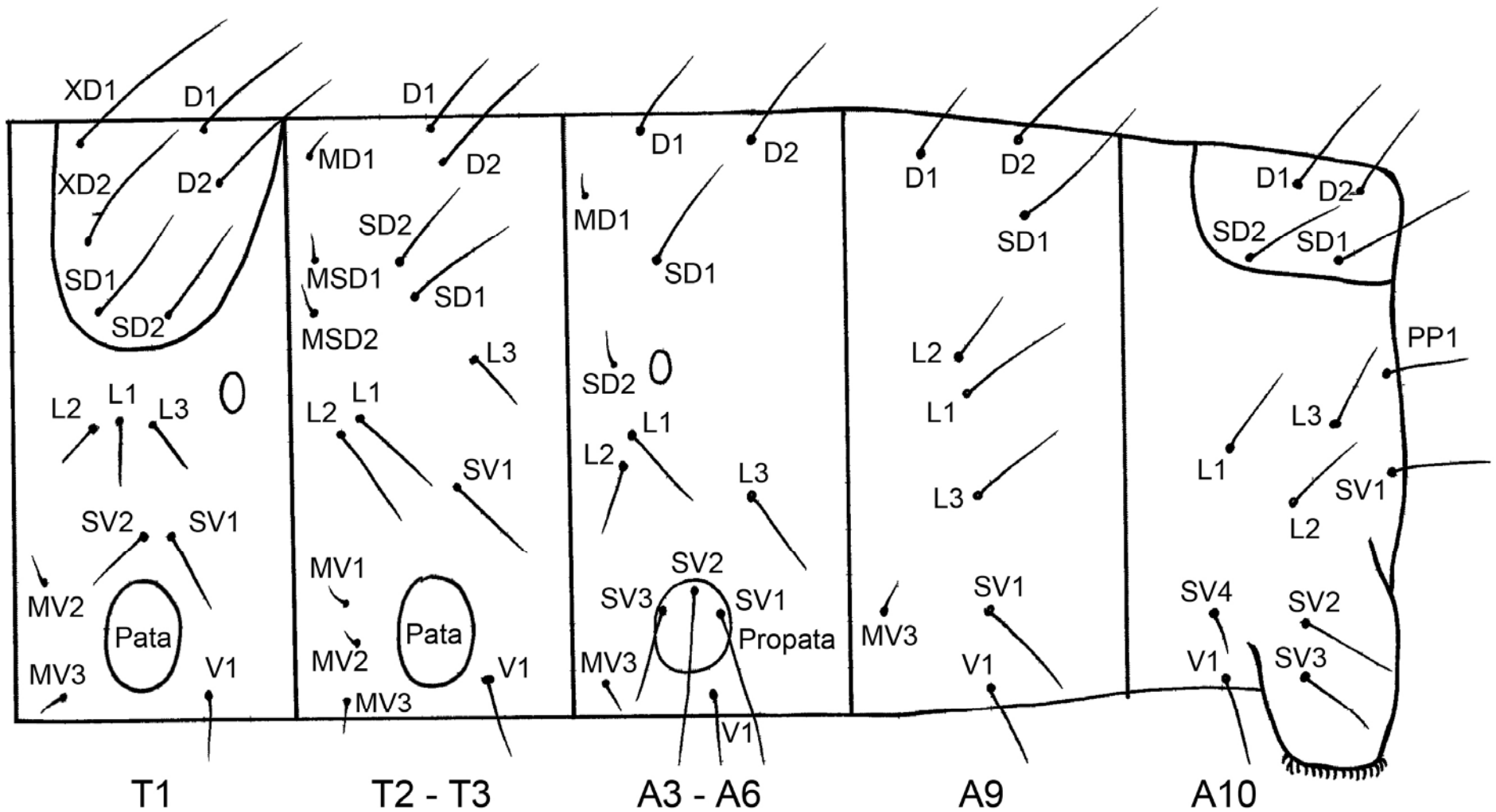




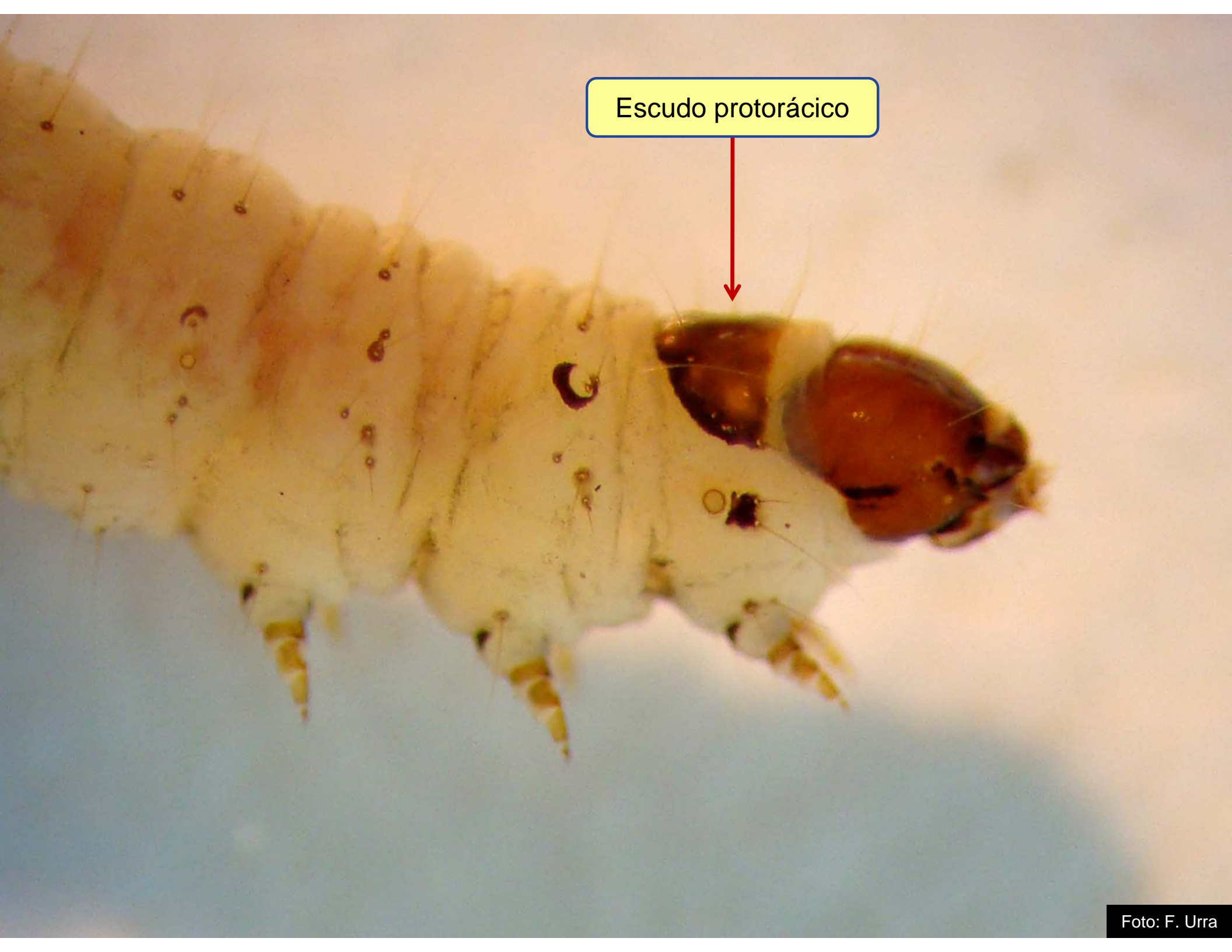
Áreas del cuerpo de una larva

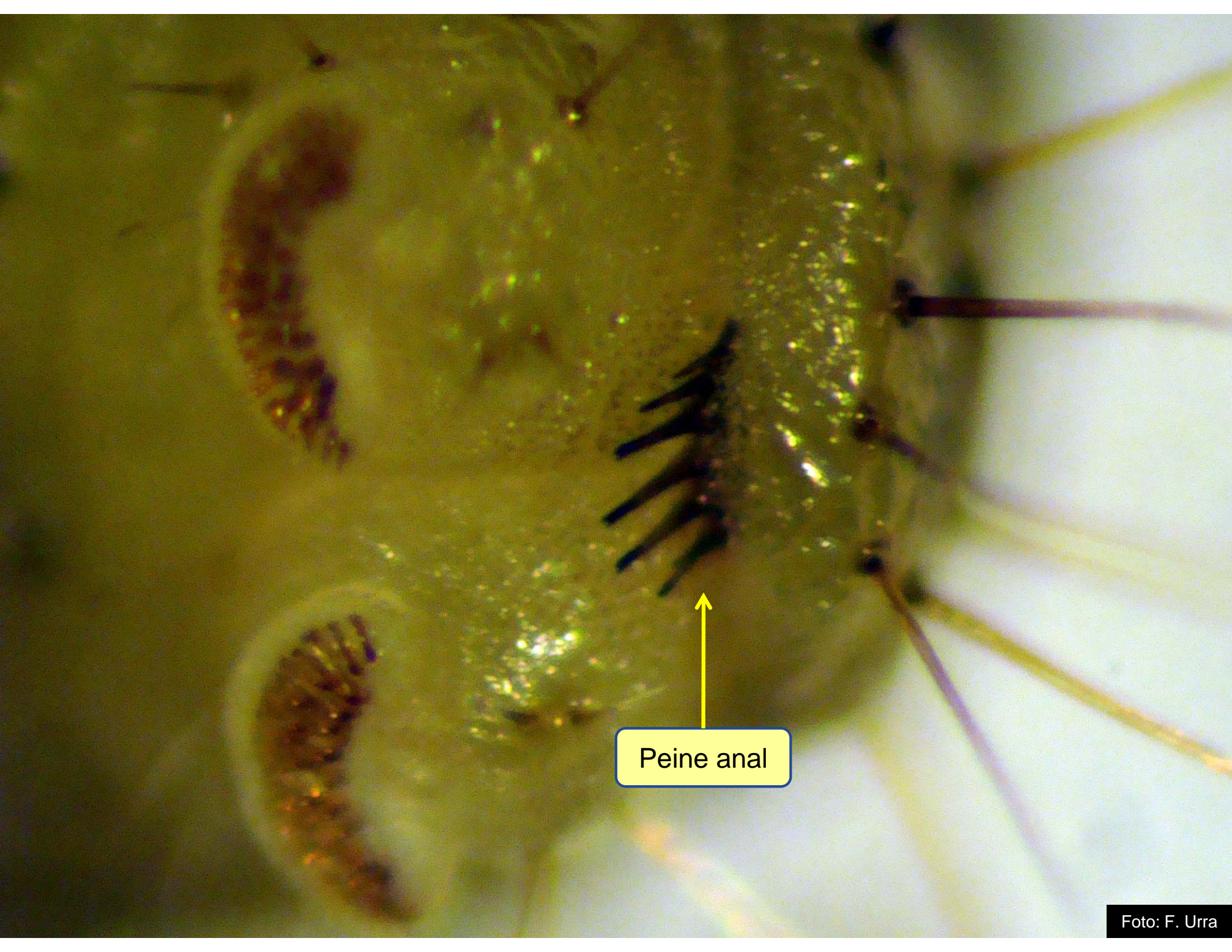


Quetotaxia



Escudo protorácico





Peine anal

Pupas de Lepidoptera

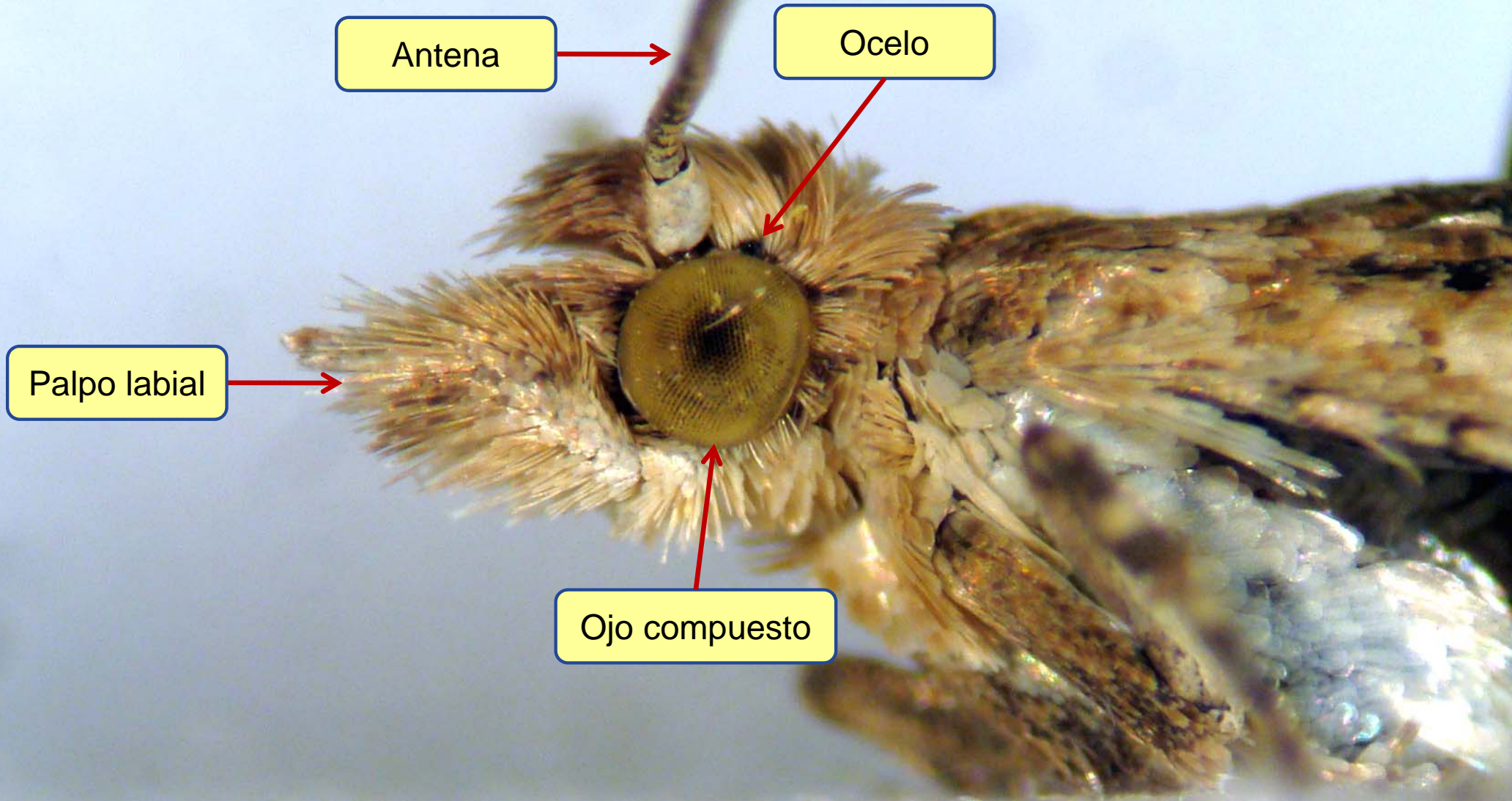
- Mayoría de tipo obtecta
- Algunos apéndices visibles
- Movilidad de los últimos segmentos abdominales



Morfología de Tortricidae

- Generalidades de los adultos
 - microlepidópteros pequeños (12 y 25 mm extensión)
 - colores gris, amarillento y café (a veces vistosos)
 - en reposo alas se mantienen como techo
- Cabeza
 - Escamas lamelares erectas sobre vertex
 - Ocelos, chaetosemata y pilíferos presentes
 - Antenas filiformes, uno o dos anillos de escamas por segmento
 - Proboscis bien desarrollada, sin escamas en la base
 - Palpos maxilares pequeños desde 1 a 4 segmentos
 - Palpos labiales bien desarrollados, de 3 segmentos



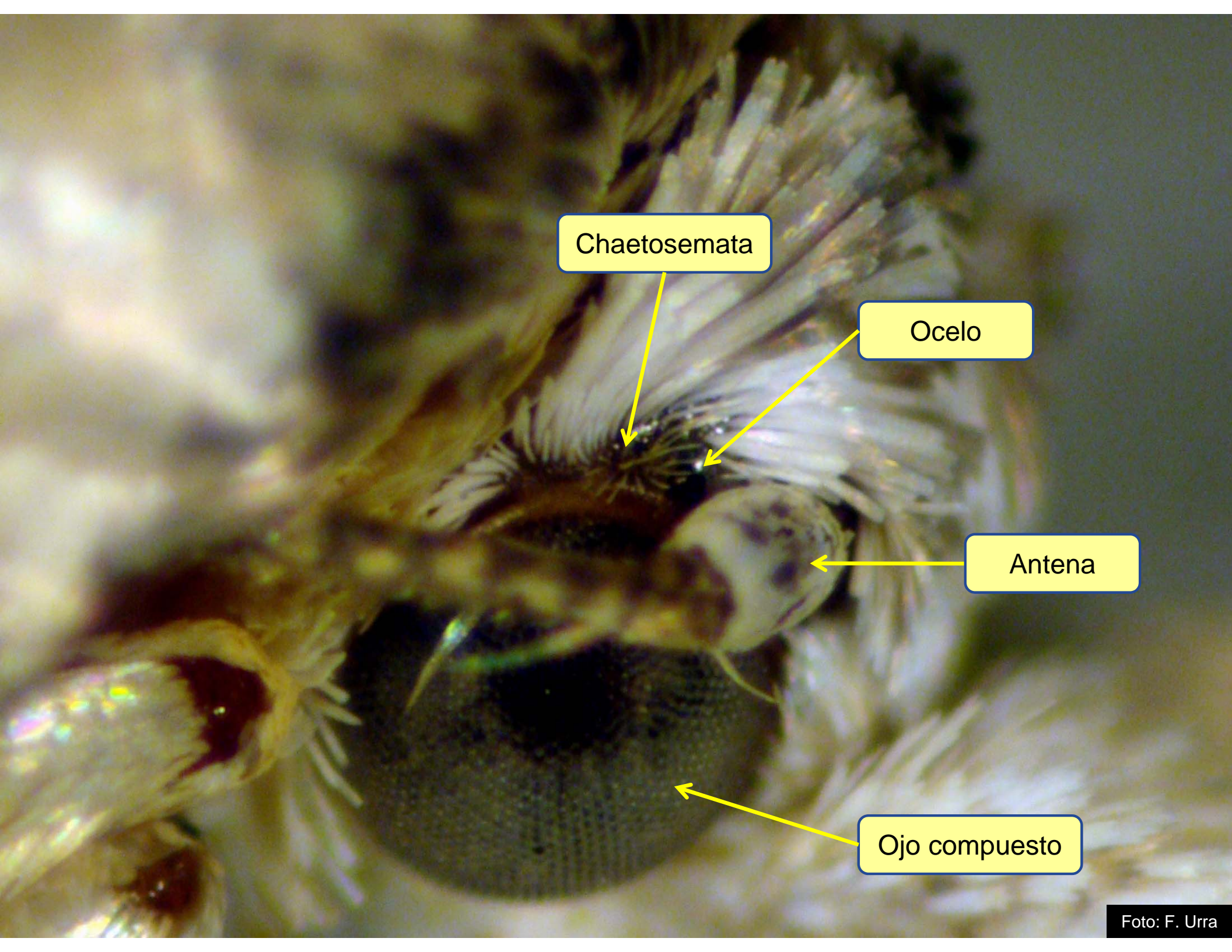


Antena

Ocelo

Palpo labial

Ojo compuesto



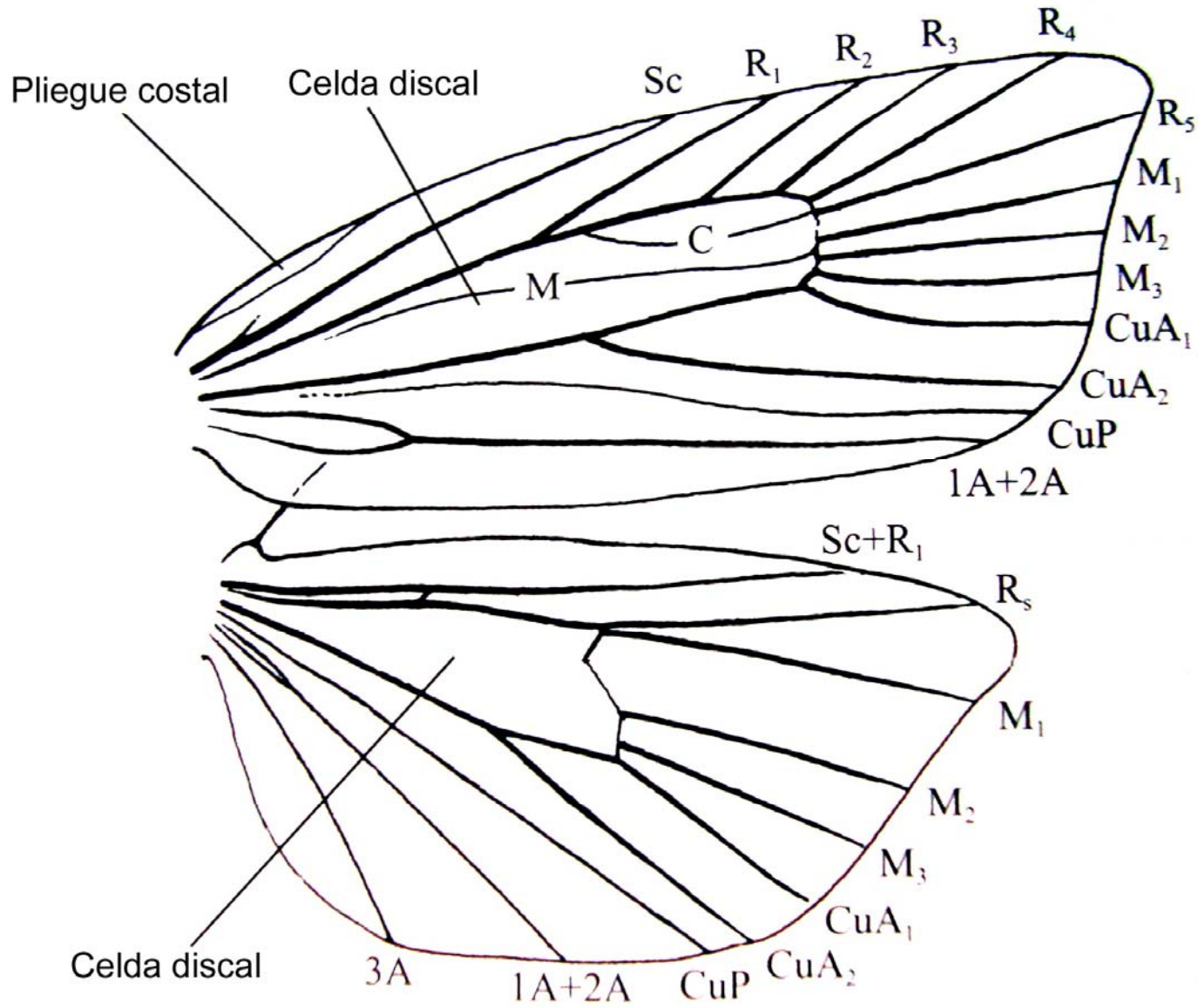
Chaetosemata

Ocelo

Antena

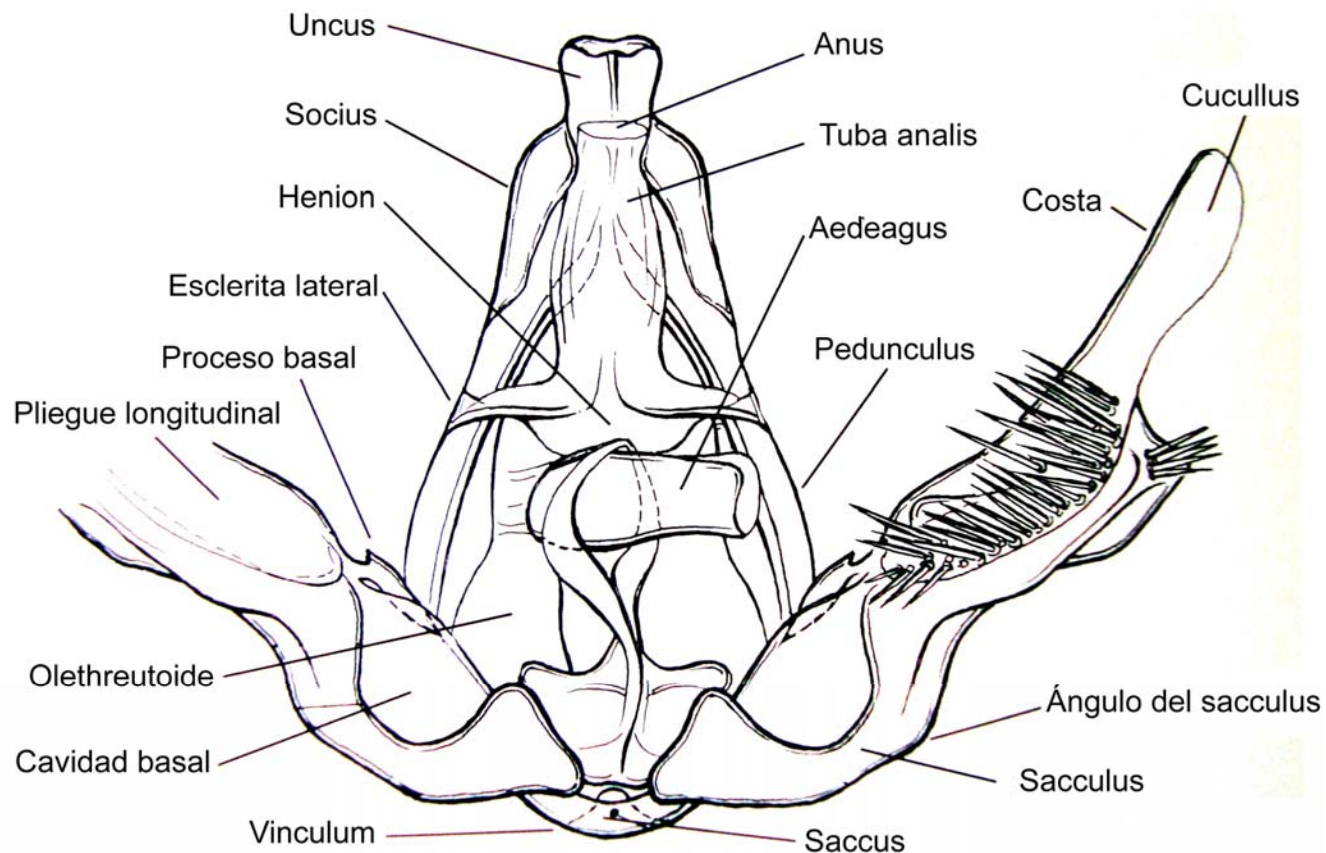
Ojo compuesto

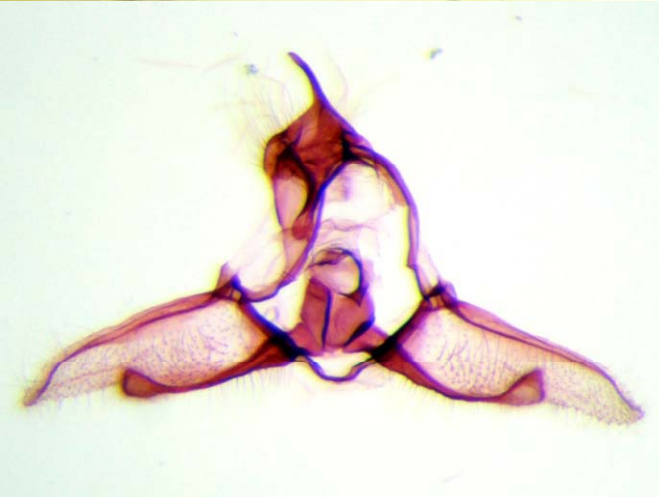
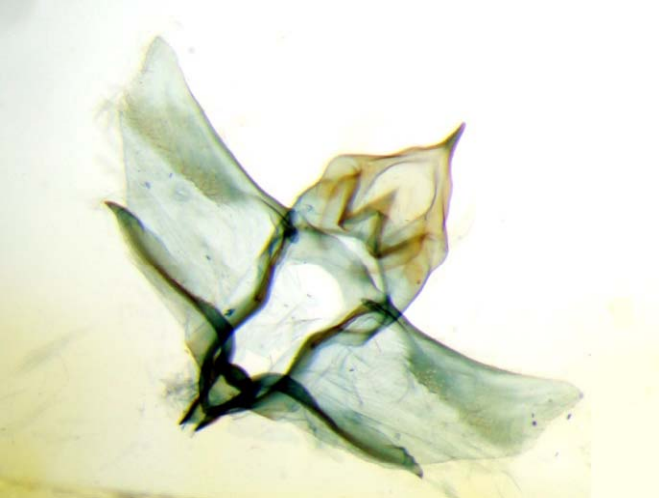
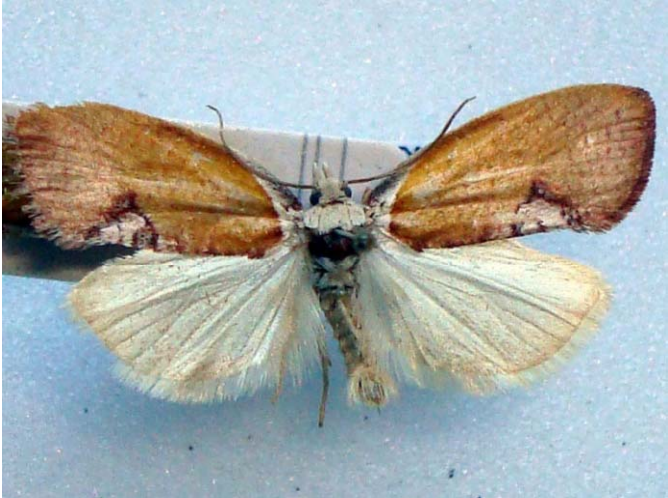
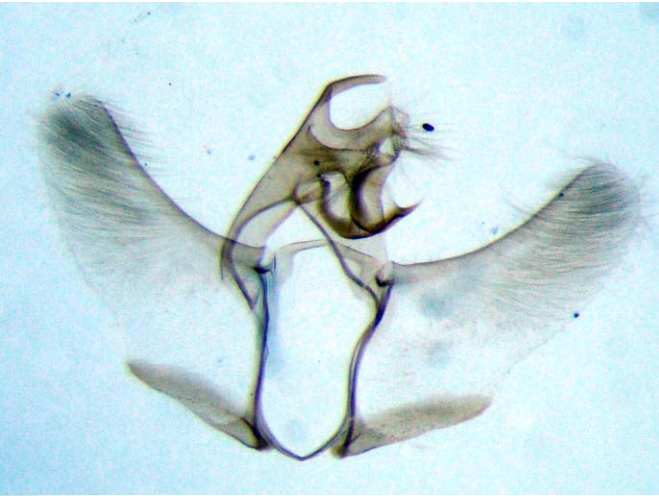
Alas de Tortricidae



Genitalia masculina

- **Uncus** variable, **socii** grande piloso o lóbulos escamosos
- **Gnathos** con brazos reducidos o ausentes
- **Saccus** raramente desarrollado
- **Valva** no derivada simple
- **Juxta** usualmente plato simple, **transtilla** ausente en Olethreutinae
- **Vesica** frecuentemente con **cornuti** fijos o deciduos

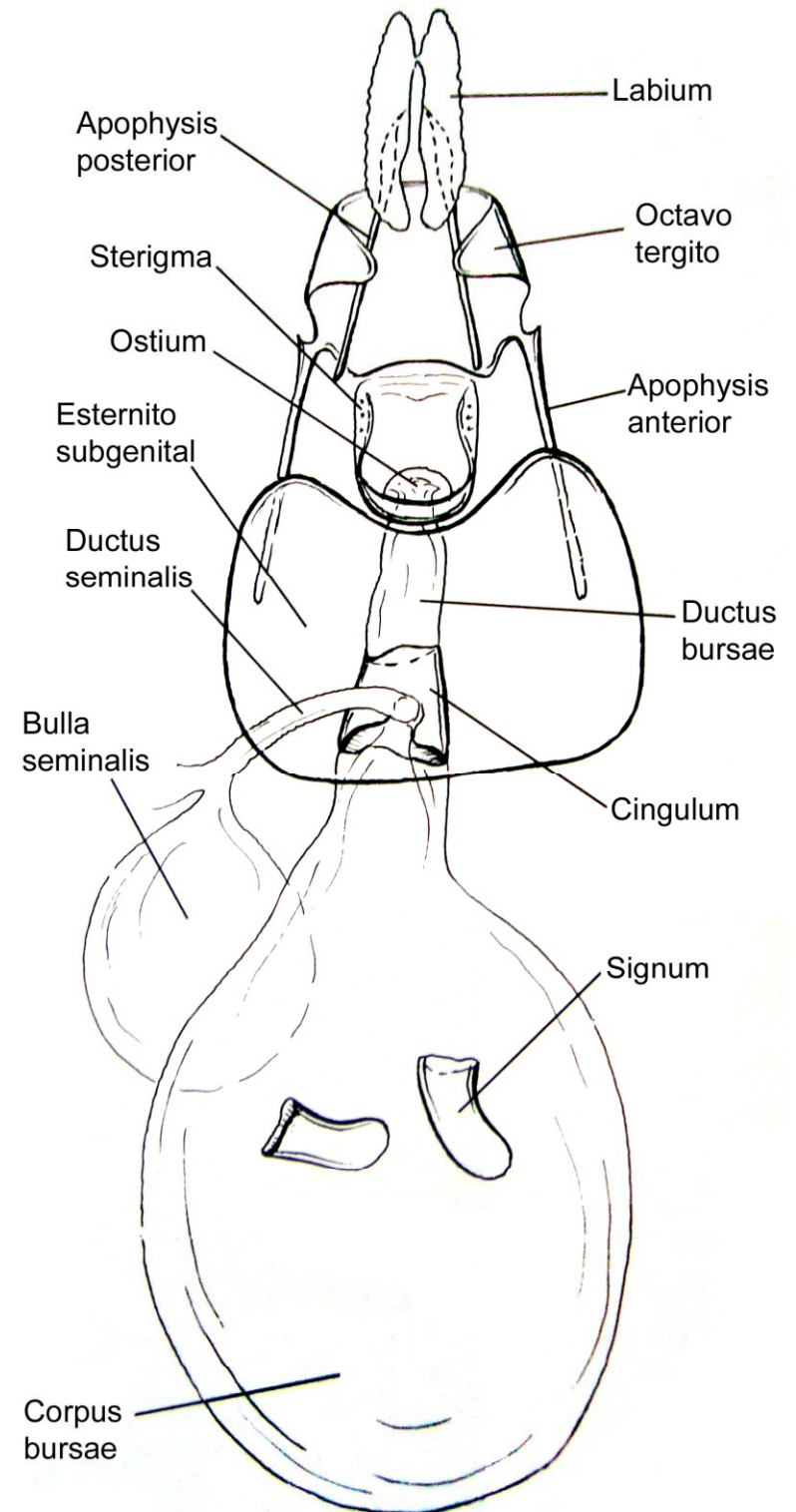






Genitalia femenina

- **Ovipositor** típicamente no telescópico, con **lóbulos** anchos, aplanados y pilosos
- **Apófisis** relativamente cortas
- **Bursa copulatrix** diferenciada en ductus y corpus bursae, con uno o dos **signa**



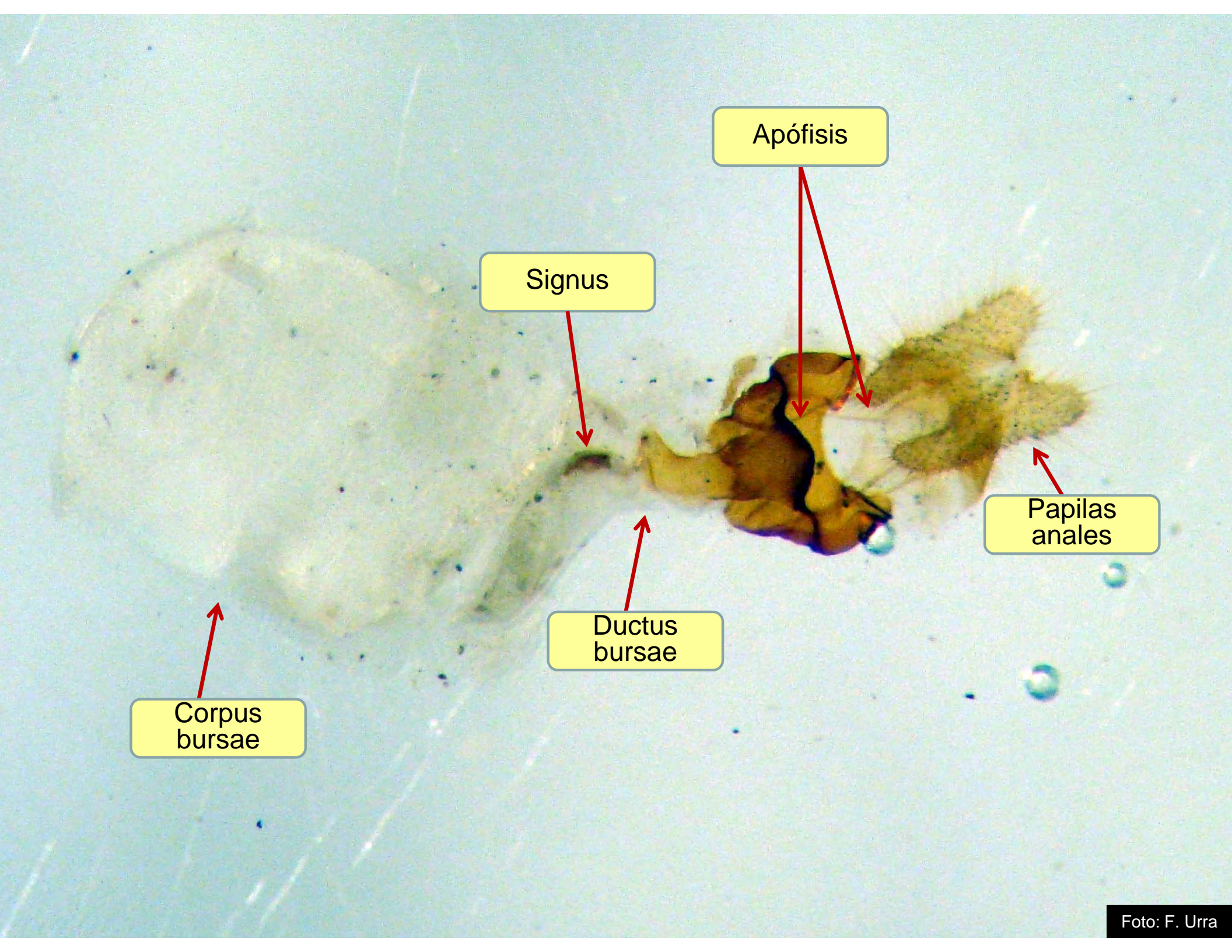
Corpus bursae

Signus

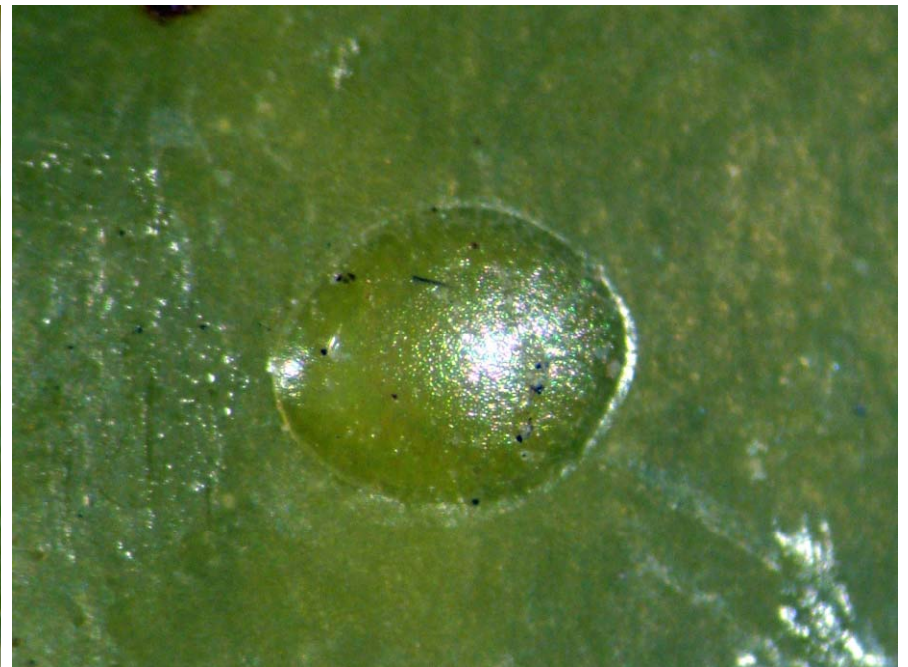
Ductus bursae

Apófisis

Papilas anales



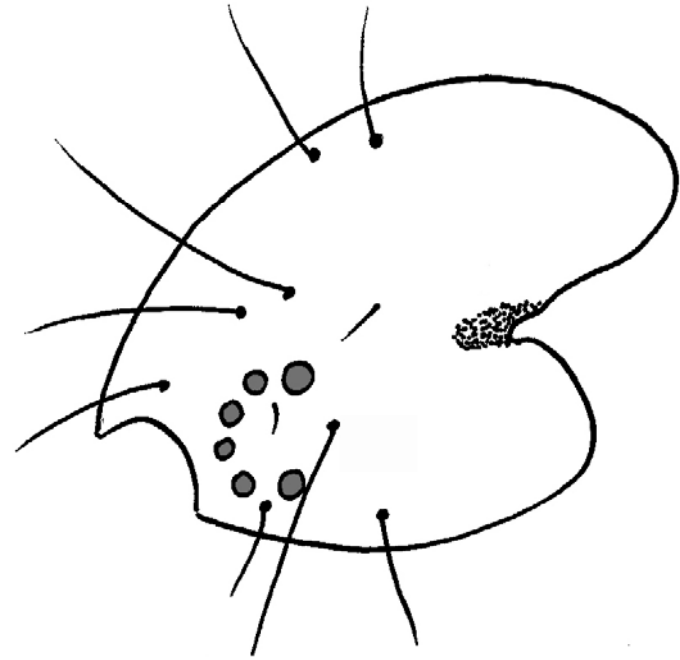
Huevos de Tortricidae



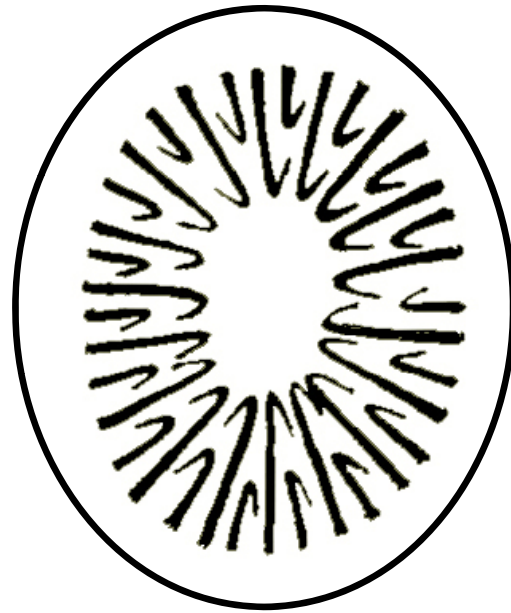
Larvas de Tortricidae



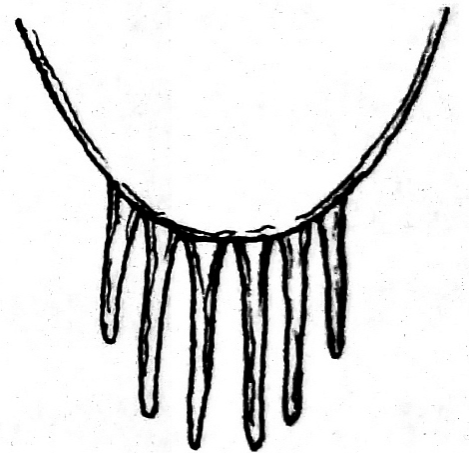
Caracteres larvarios



6 stemmata (ocelos)

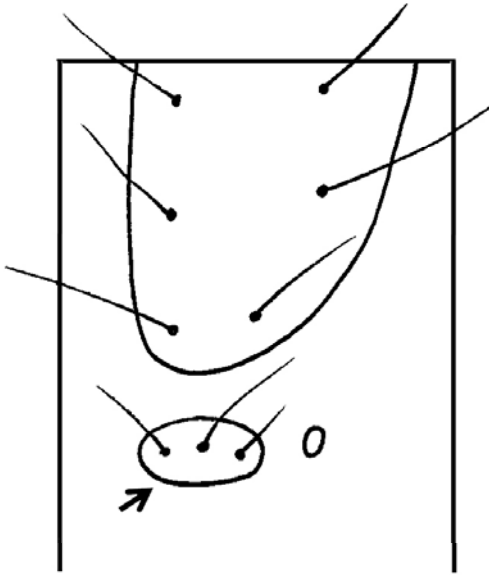


Crochets uniseriales biordinales
en círculo o elipse completa

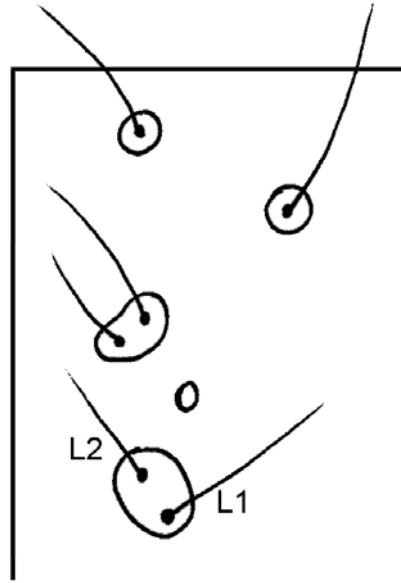


Peine anal en segmento A10

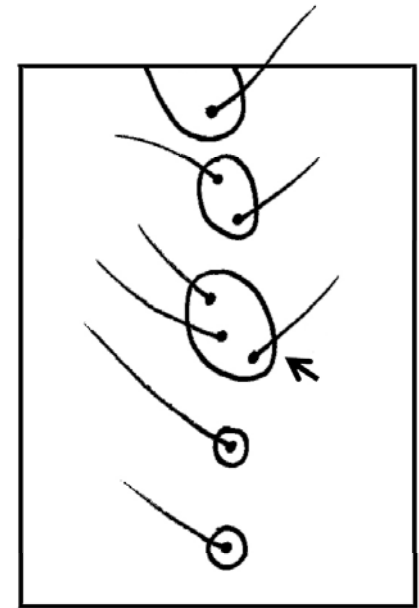
Caracteres larvarios



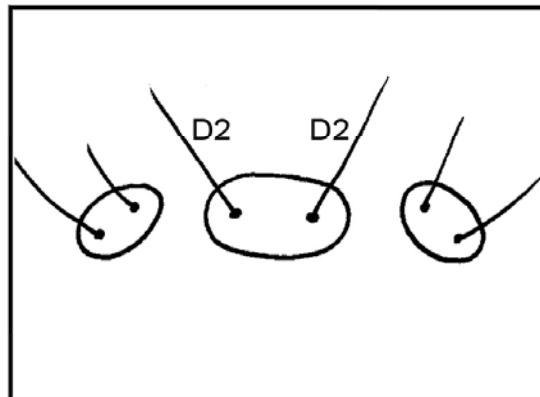
En el protórax hay tres setas pre-espiraculares.



En los segmentos A3 a A6 las setas L1 y L2 se ubican juntas bajo el espiráculo.



En el segmento A9 hay tres setas laterales (L1, L2 y L3).



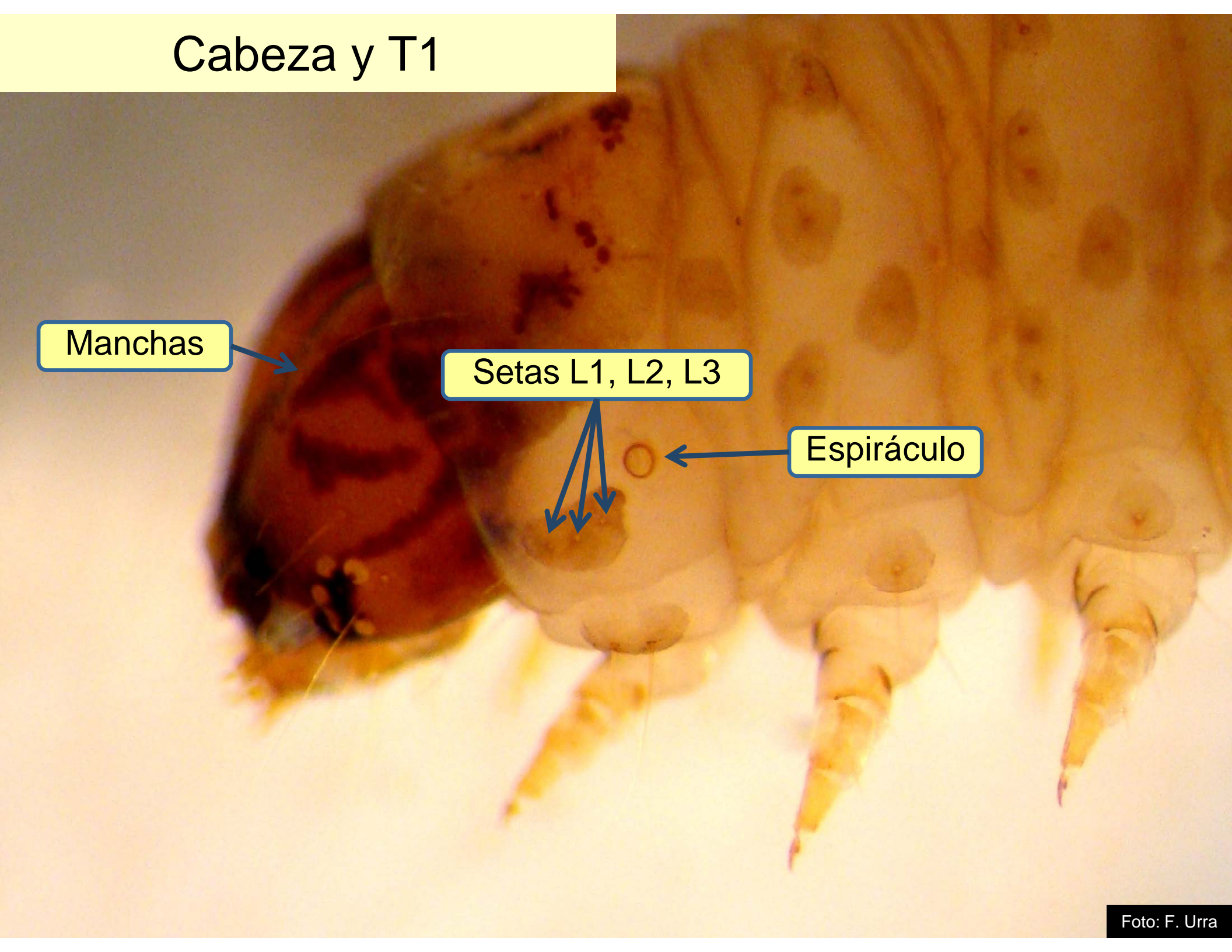
En el segmento A9, el par de setas D2 se insertan en el mismo pináculo.

Cabeza y T1

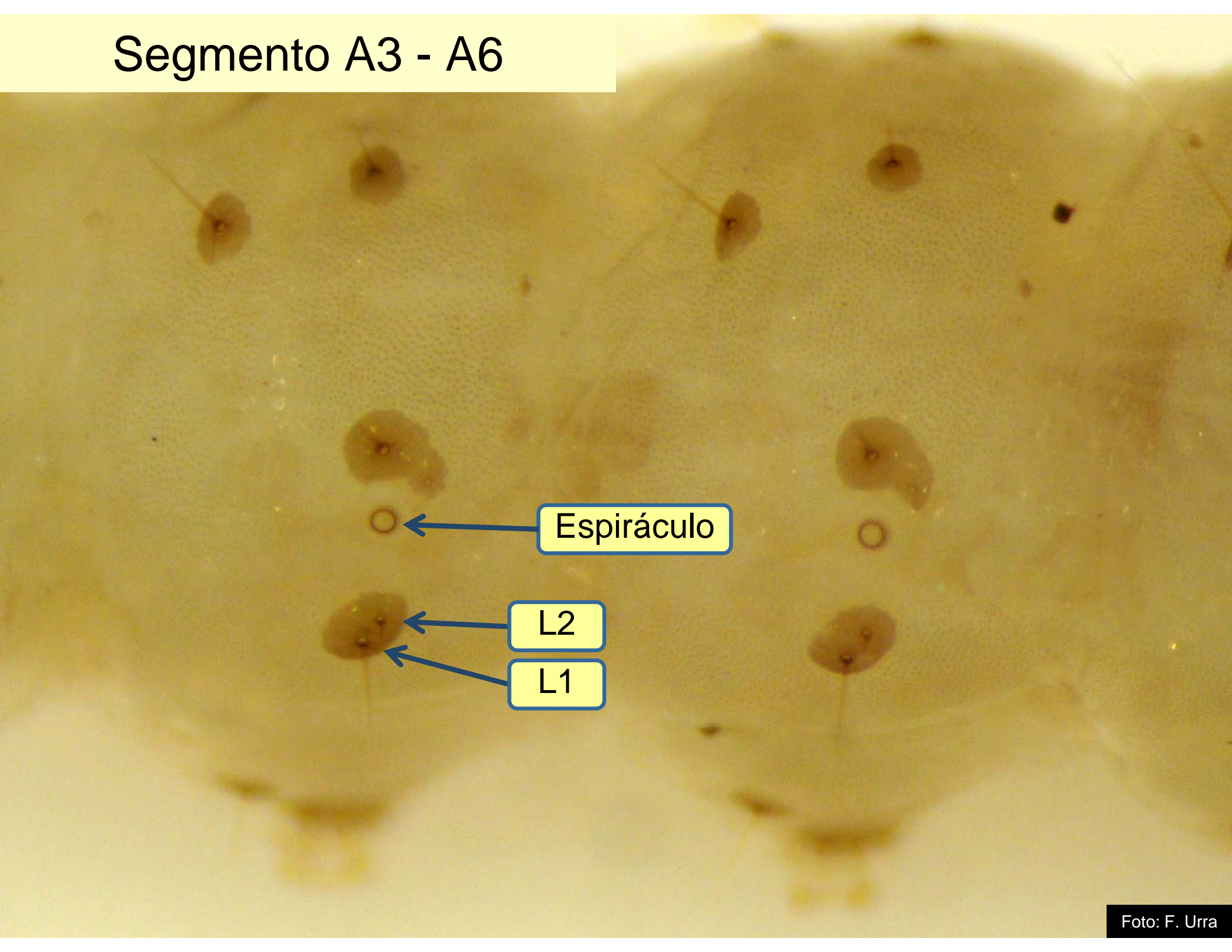
Manchas

Setas L1, L2, L3

Espiráculo



Segmento A3 - A6



Espiráculo

L2

L1

Segmento A8 y A9

SD2

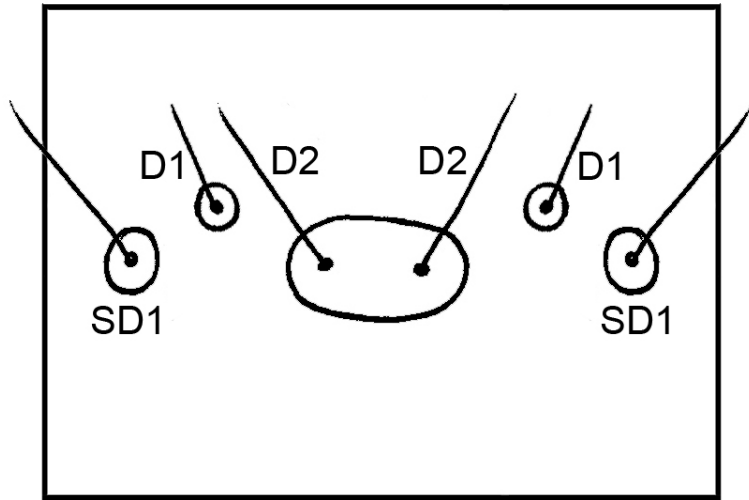
Espiráculo

L2

L1

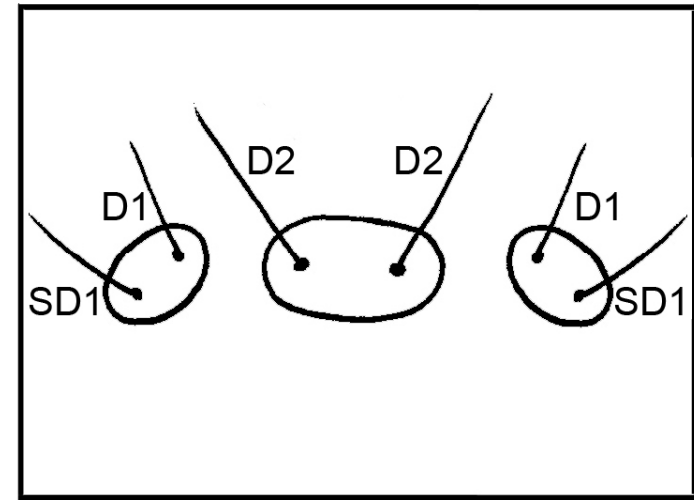
L3

Subfamilia Tortricinae y Olethreutinae



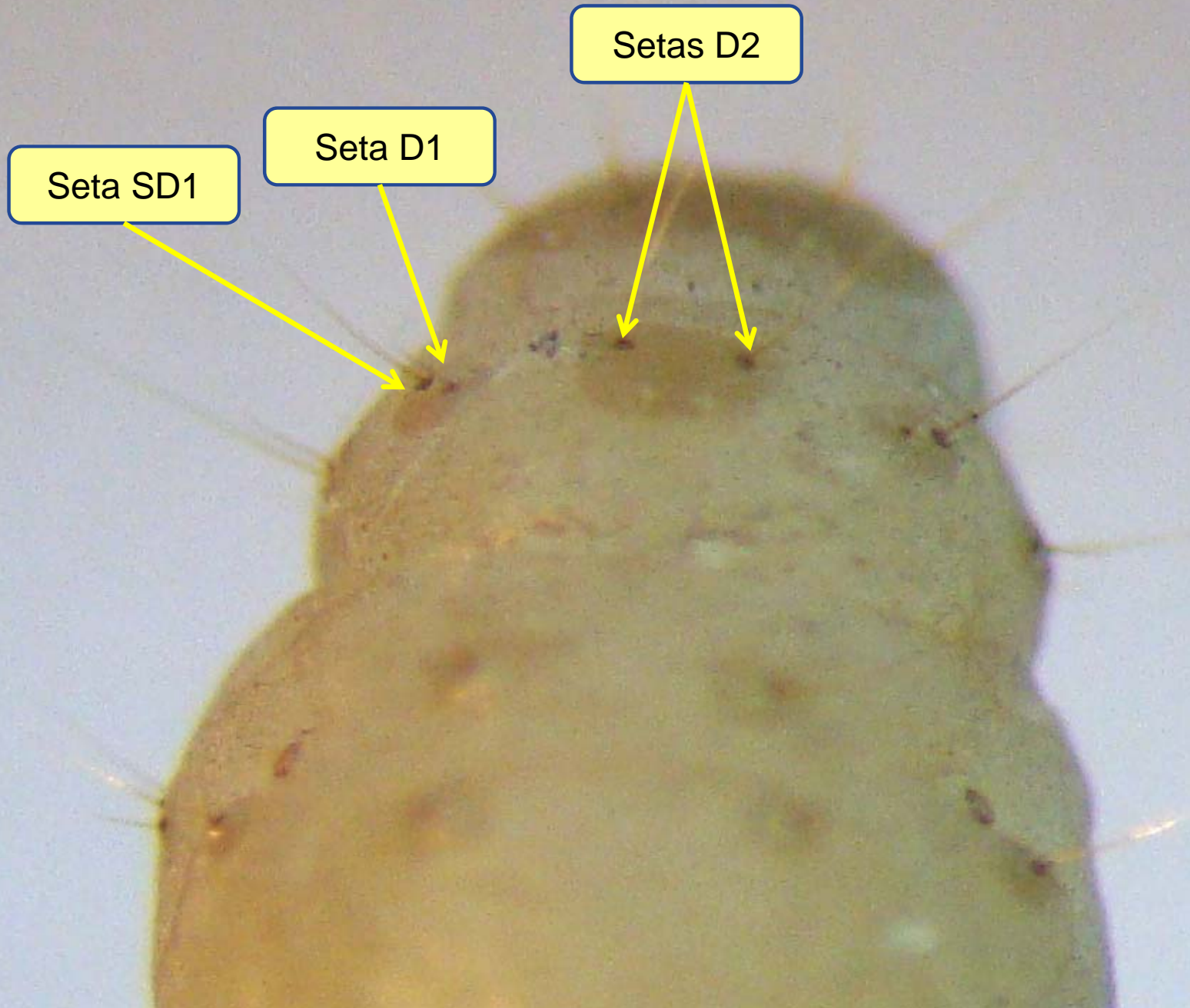
En el segmento A9 la seta D1 es equidistante de D2 y SD1.

En el segmento A9 la seta D1 y SD1 se insertan en pináculos separados.



En el segmento A9 la seta D1 cercana a SD1 y ambas se insertan en un mismo pináculo.

A9 Olethreutinae

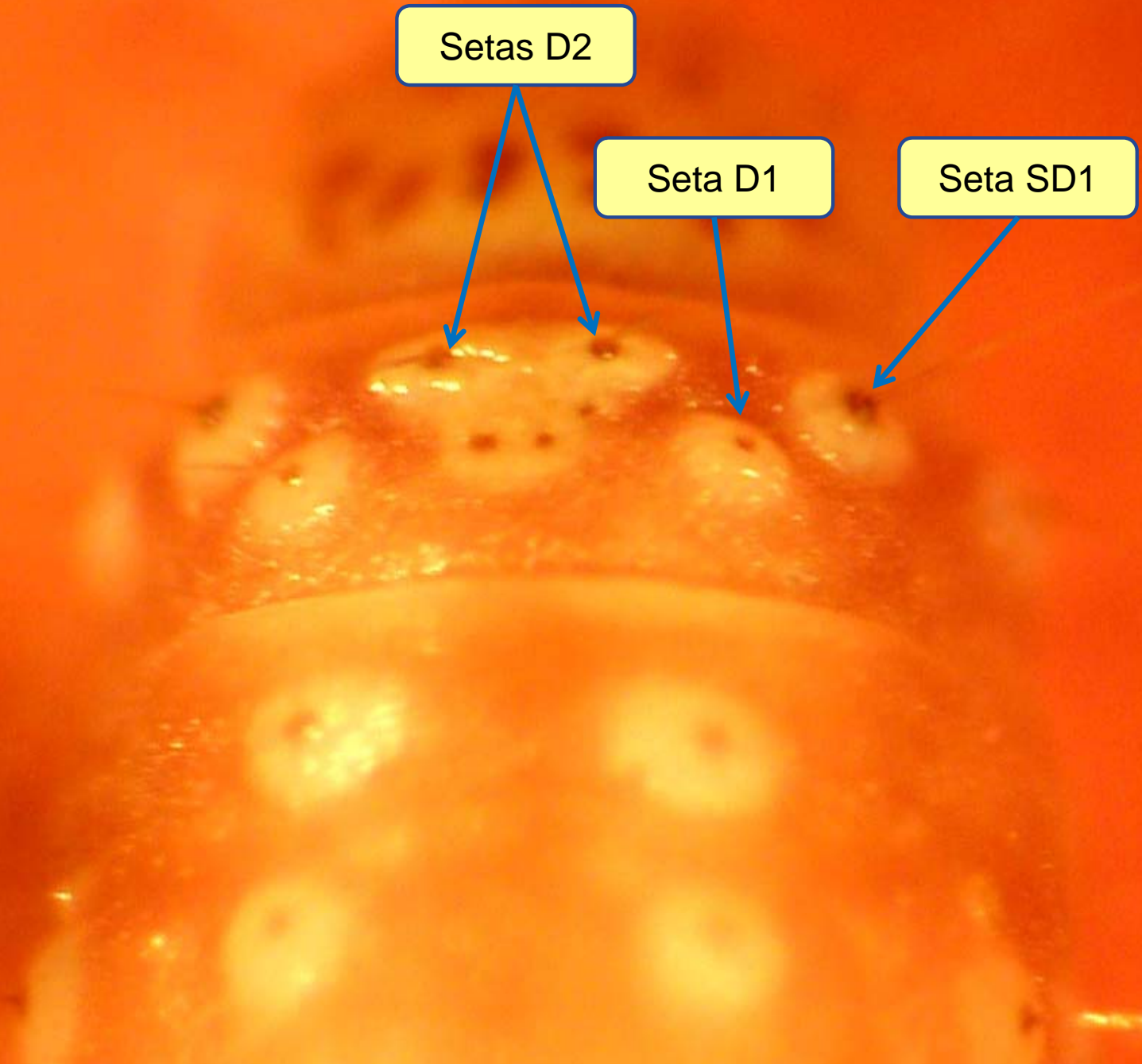


A9 Tortricinae

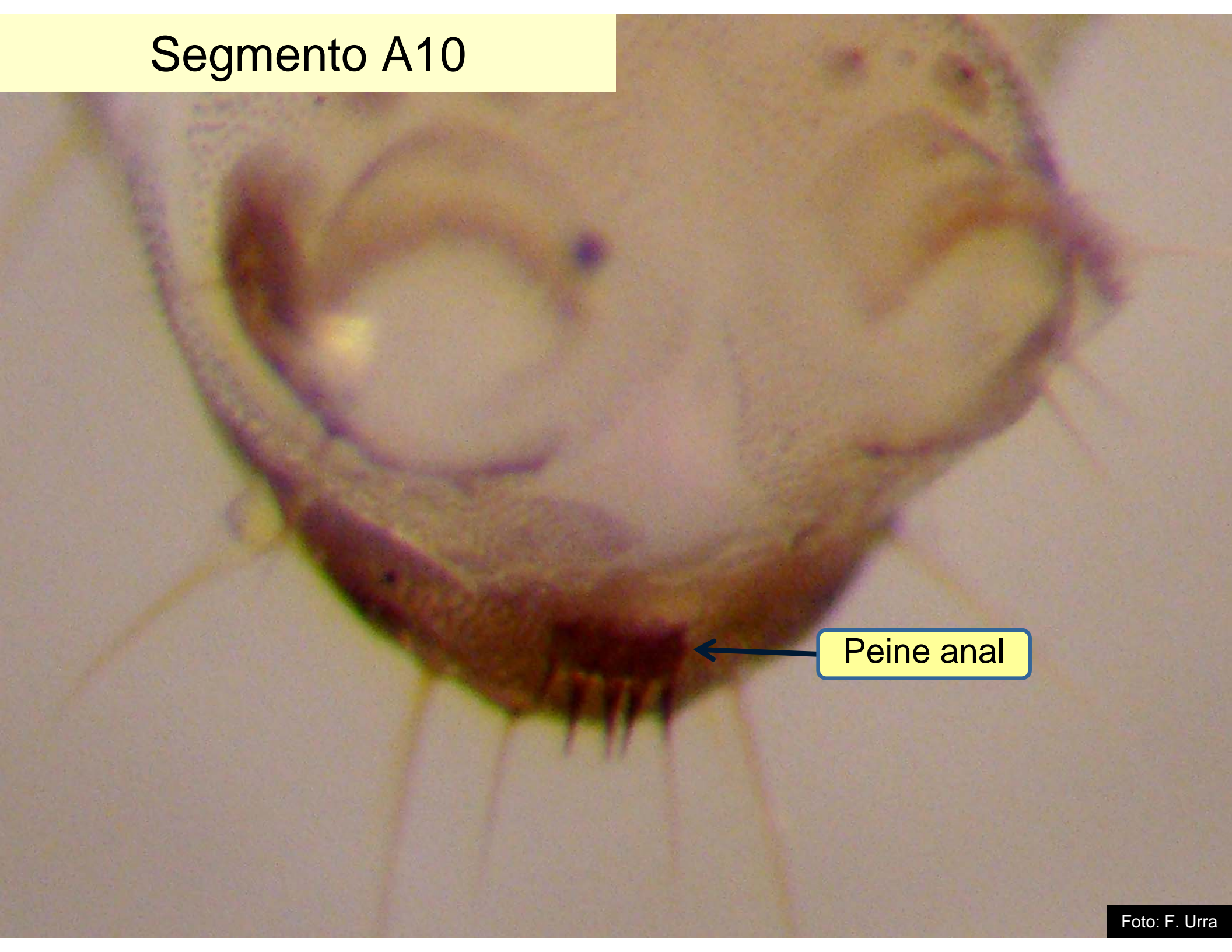
Setas D2

Seta D1

Seta SD1



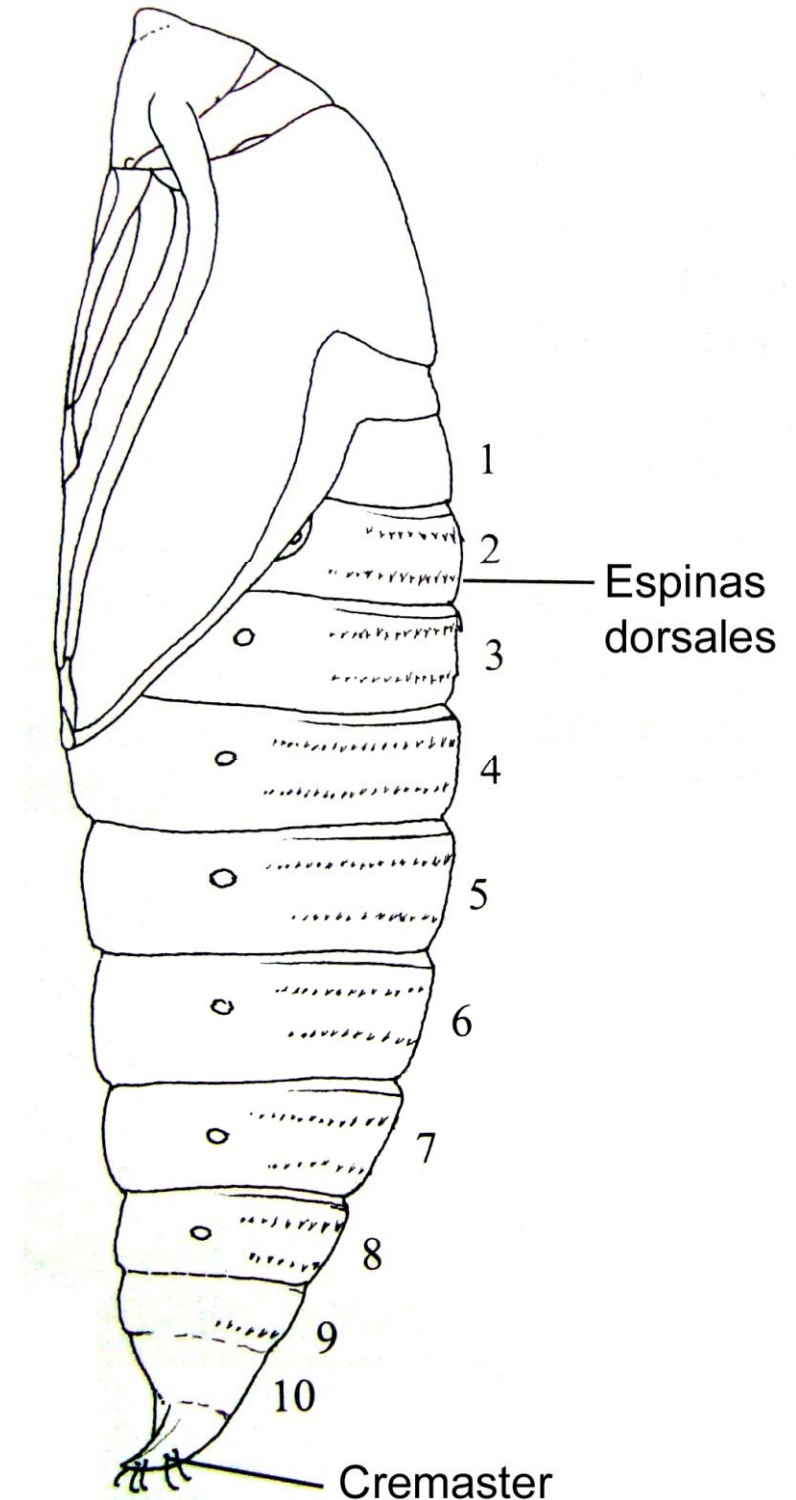
Segmento A10

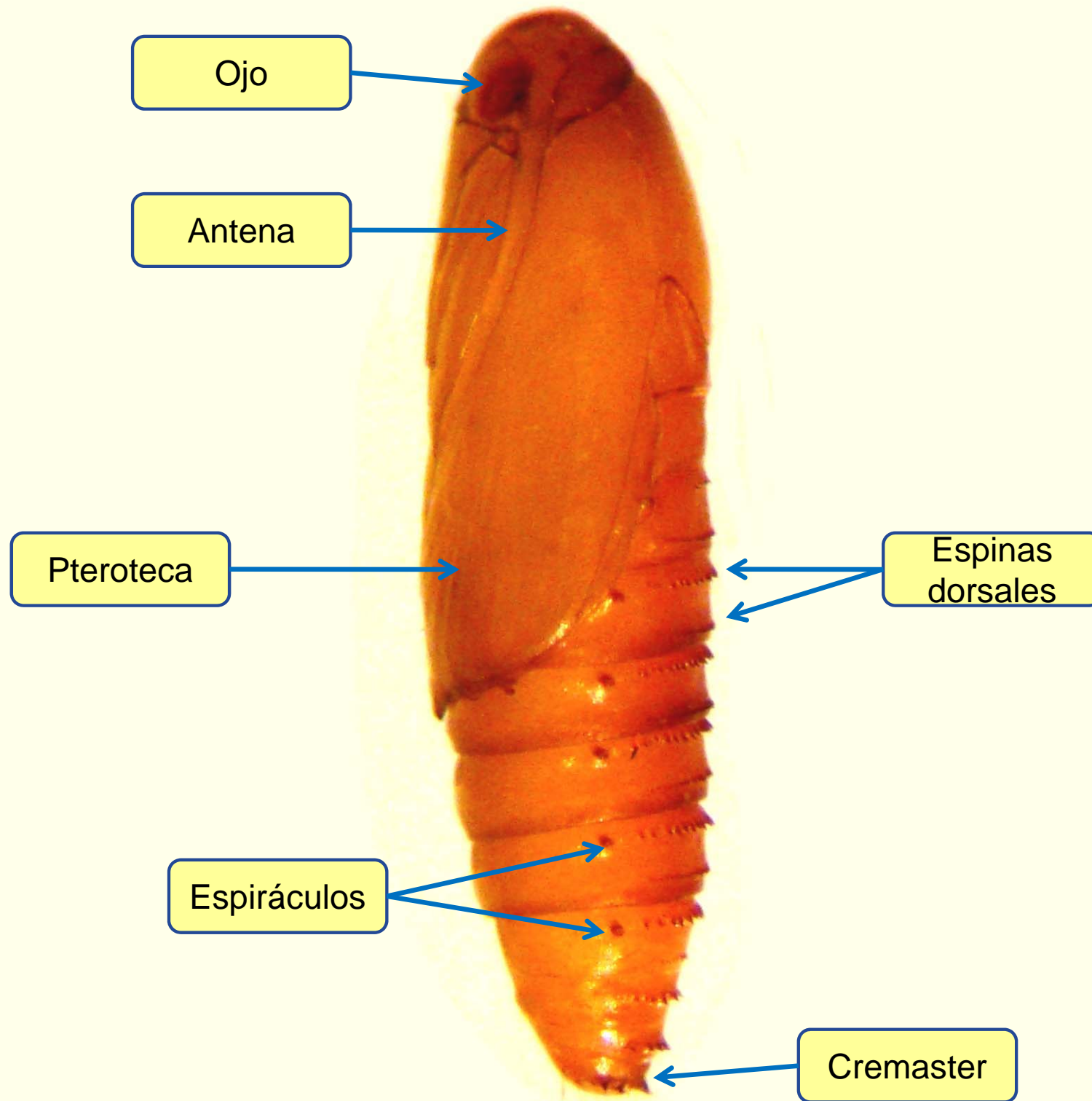


Peine anal

Pupas de Tortricidae

- Aedeagus y obteca
- Segmentos fusionados A7-A10 (hembras), A8-A10 (machos)
- Palpos maxilares usualmente visibles
- Surcos alares raramente presentes
- Dos hileras de espinas dorsales sobre A3-A7
- En A10, una o dos setas con forma de gancho al costado del ano
- Cauda frecuentemente con 8 setas en forma de gancho



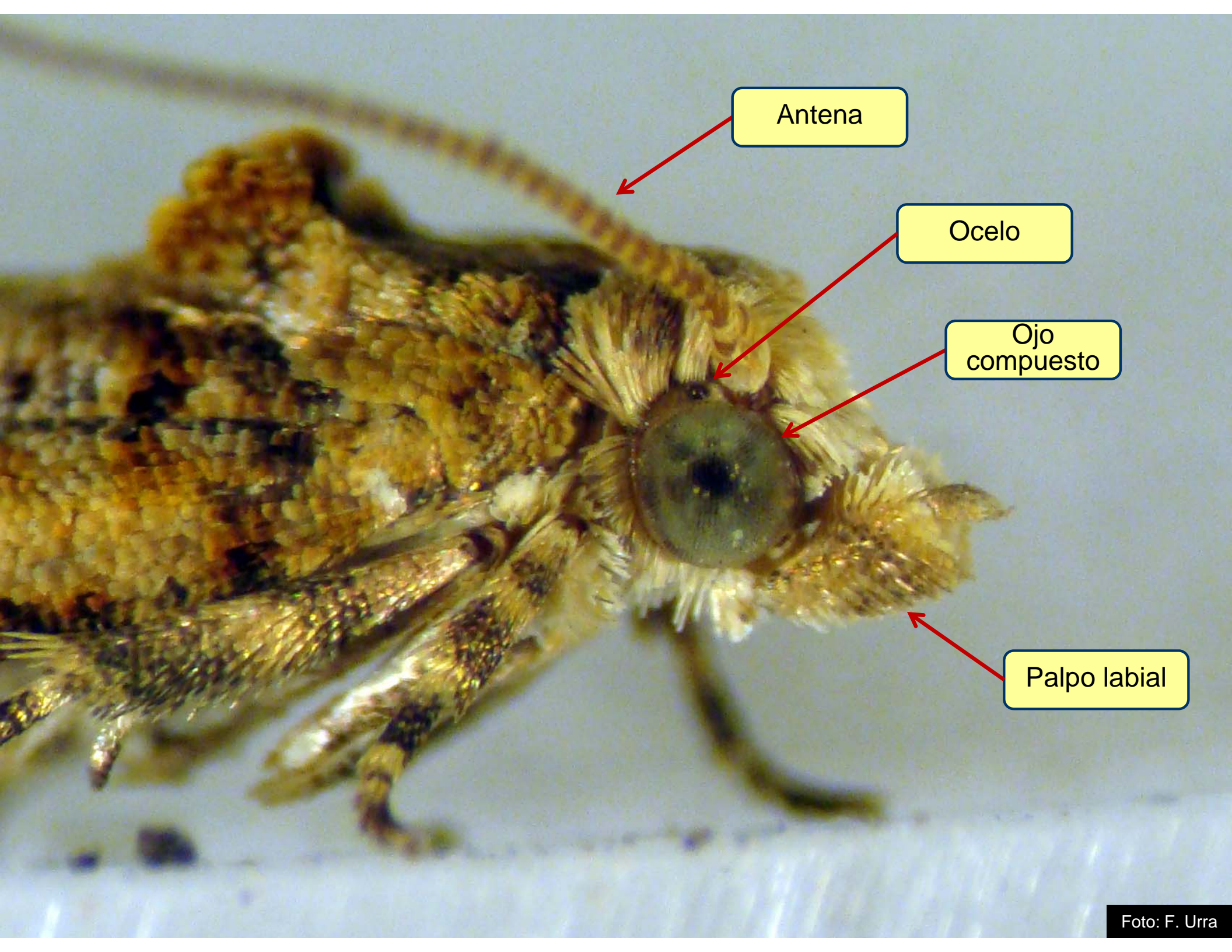


Oecophoridae



Lobesia botrana (Denis & Schiffermuller)





Antena

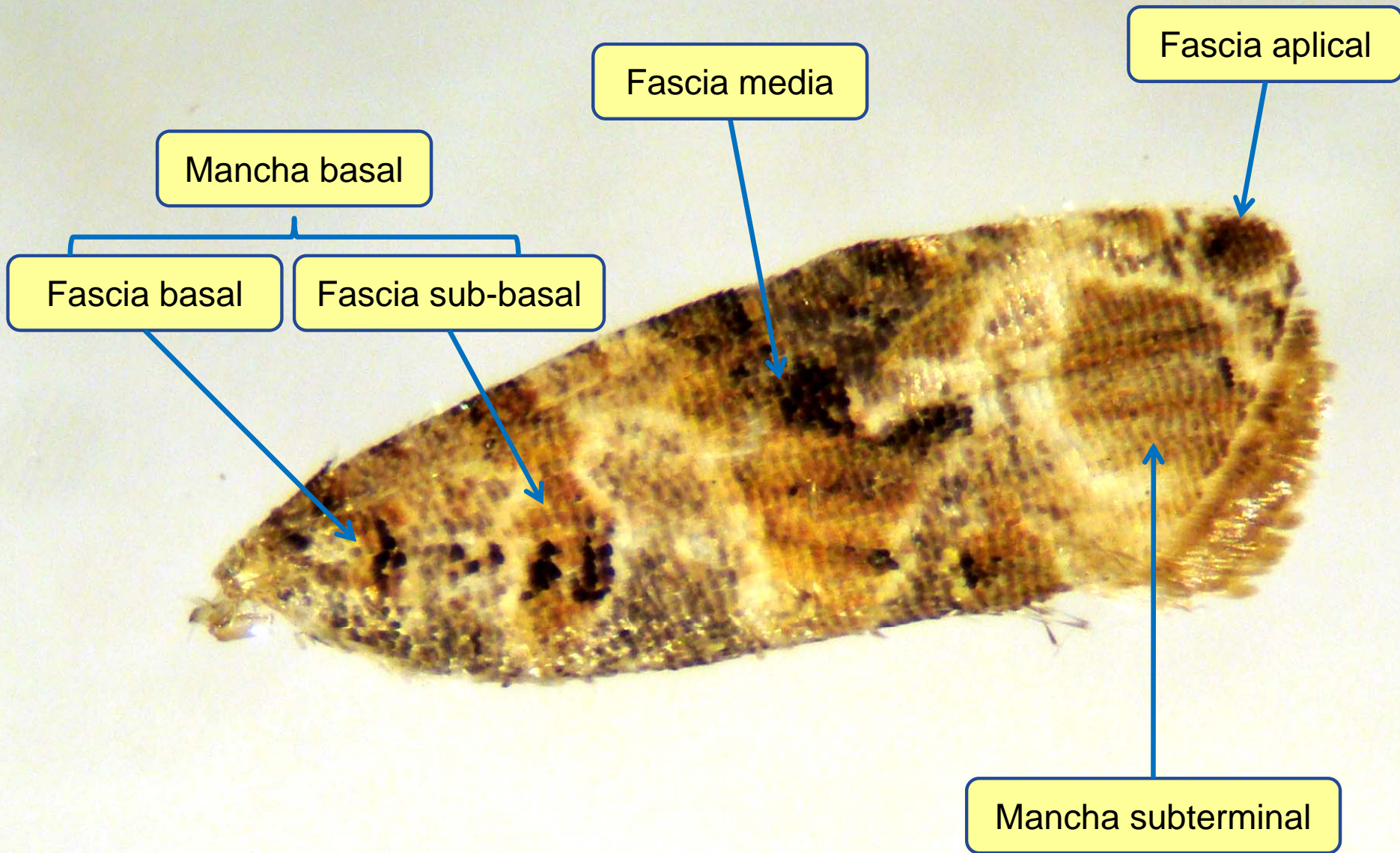
Ocelo

Ojo
compuesto

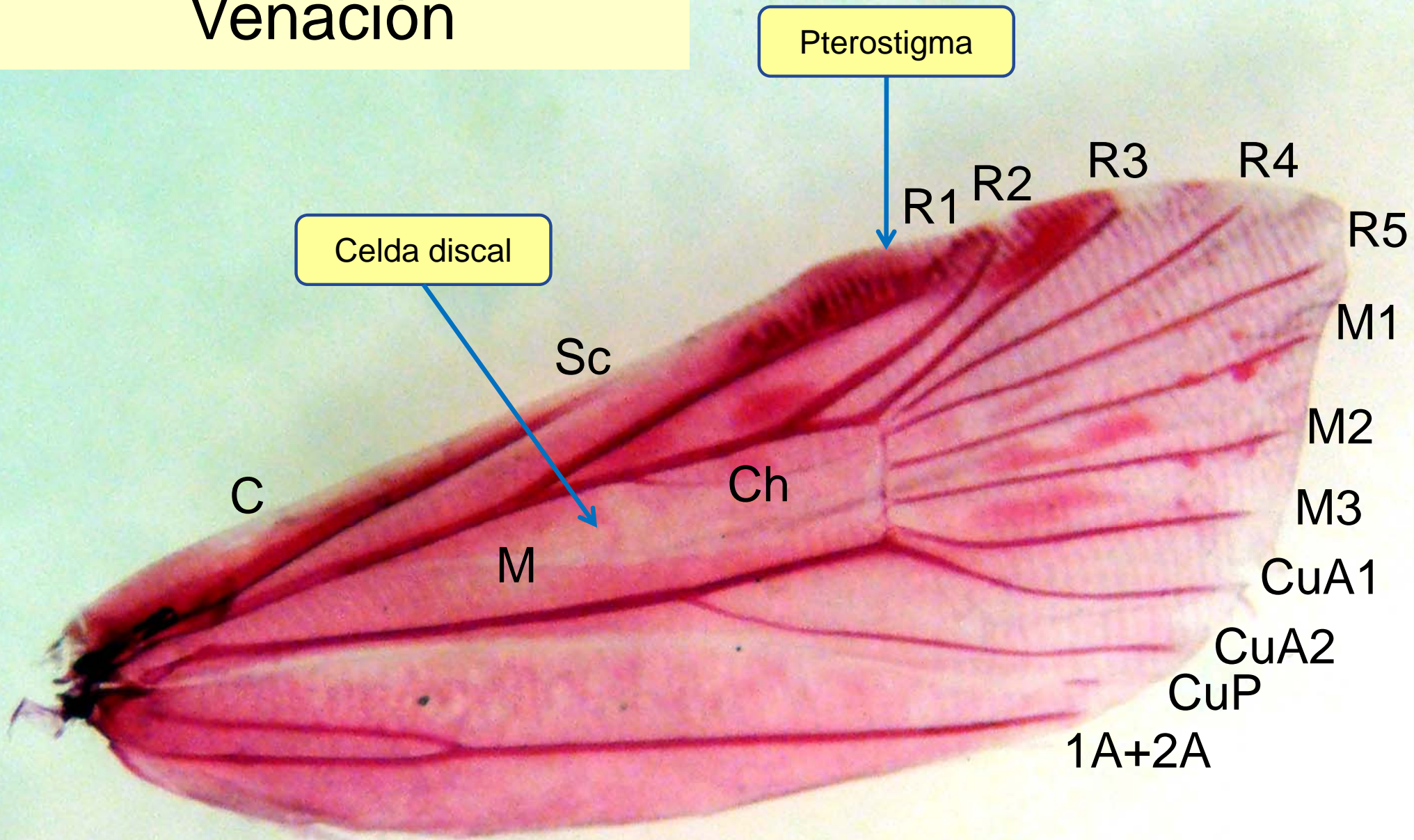
Palpo labial



Patrón de coloración

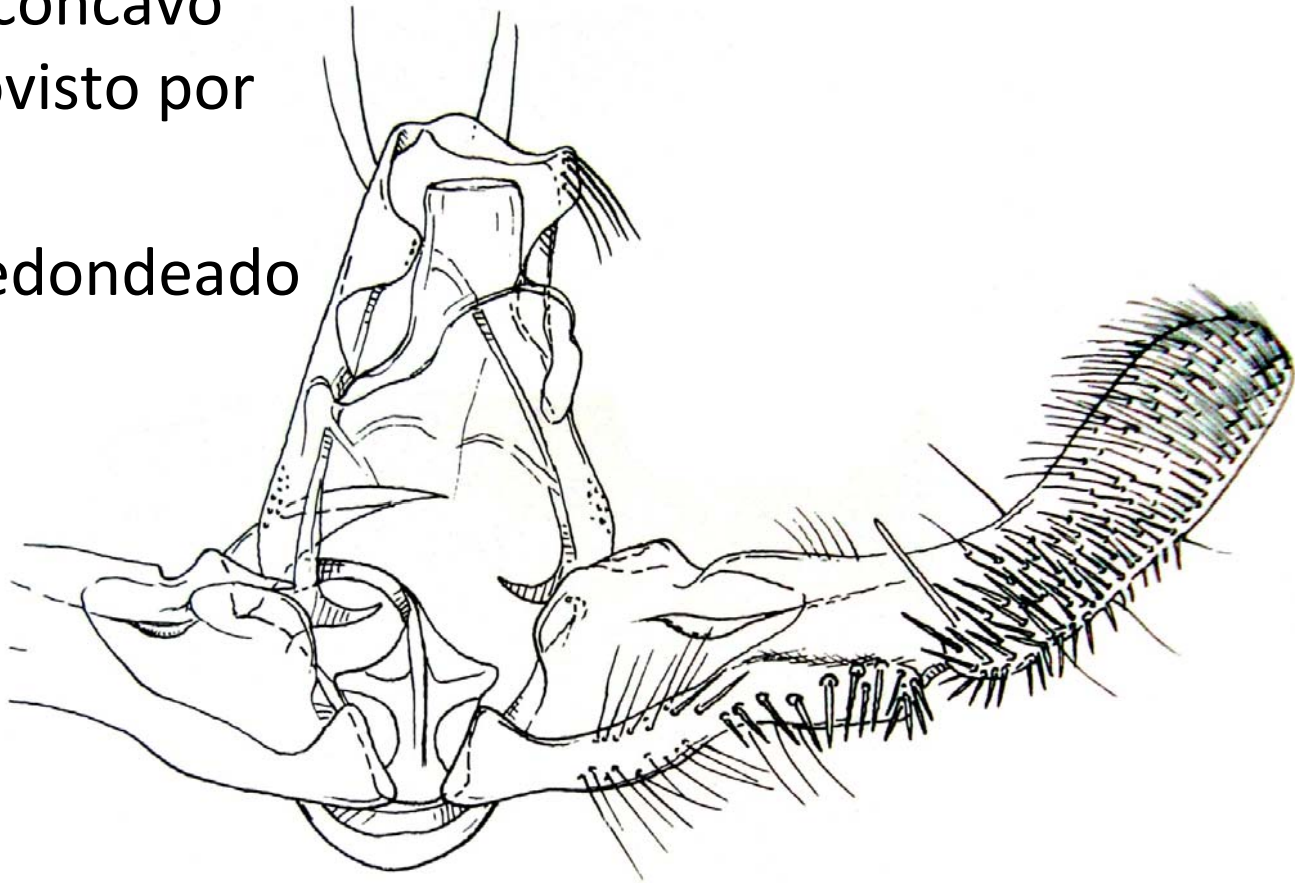


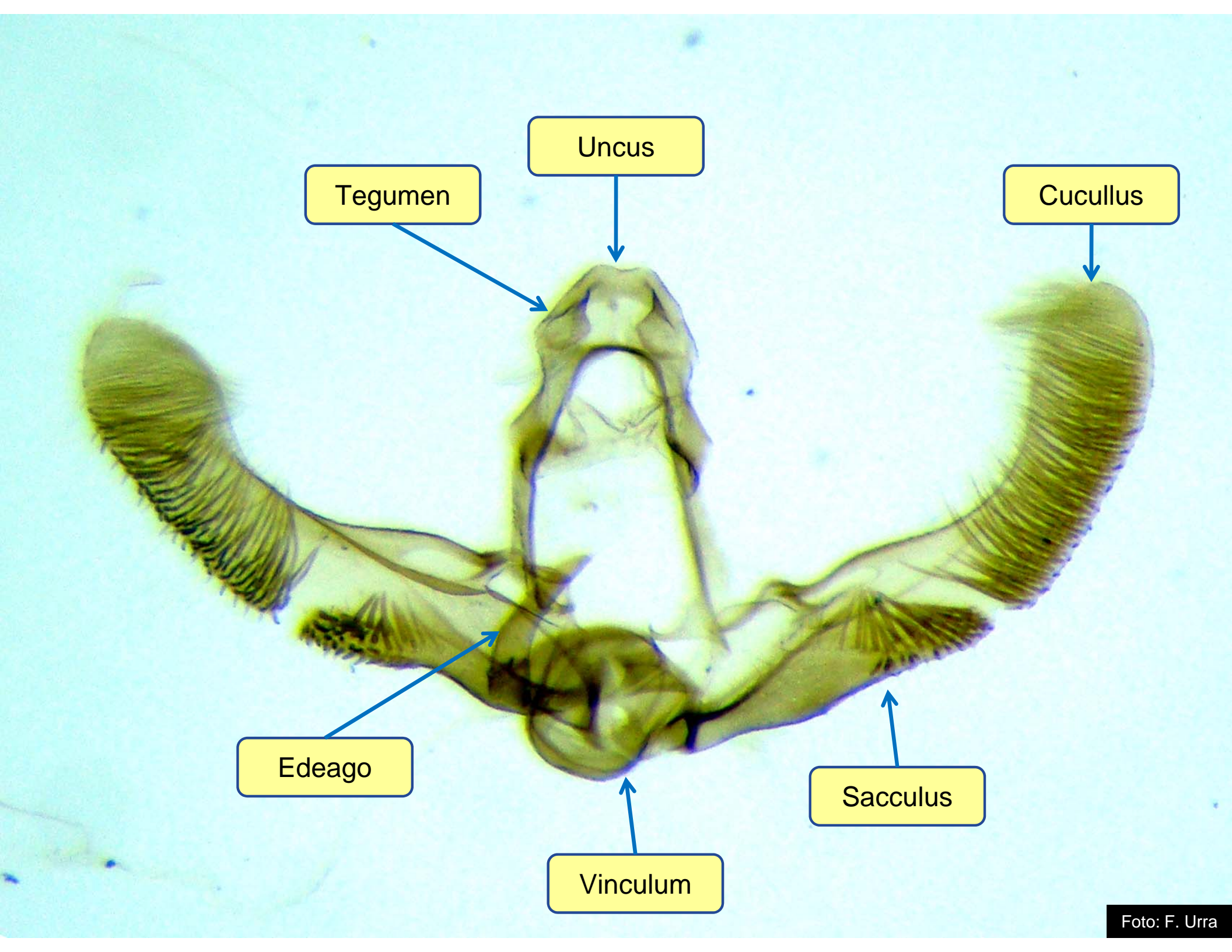
Venación



Genitalia masculina

- Uncus completamente atrofiado
- Socius pequeño
- Sacculus débilmente cóncavo postmedialmente provisto por numerosas espinas
- Ángulo del cucullus redondeado
- Edeago pequeño





Tegumen

Uncus

Cucullus

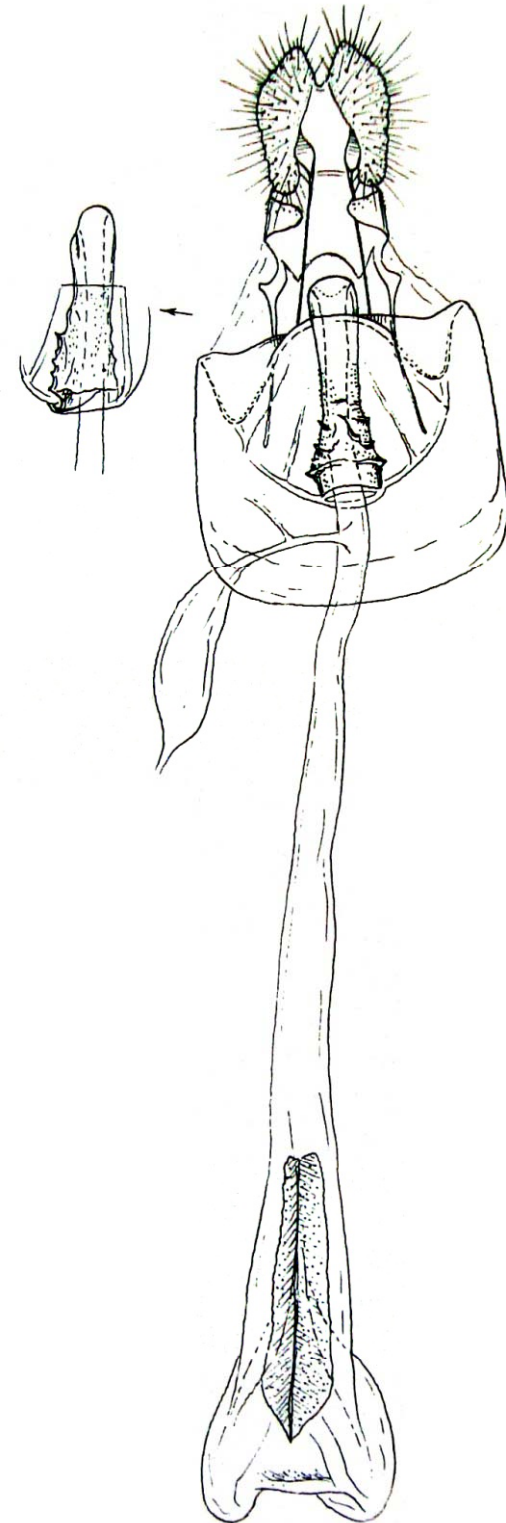
Edeago

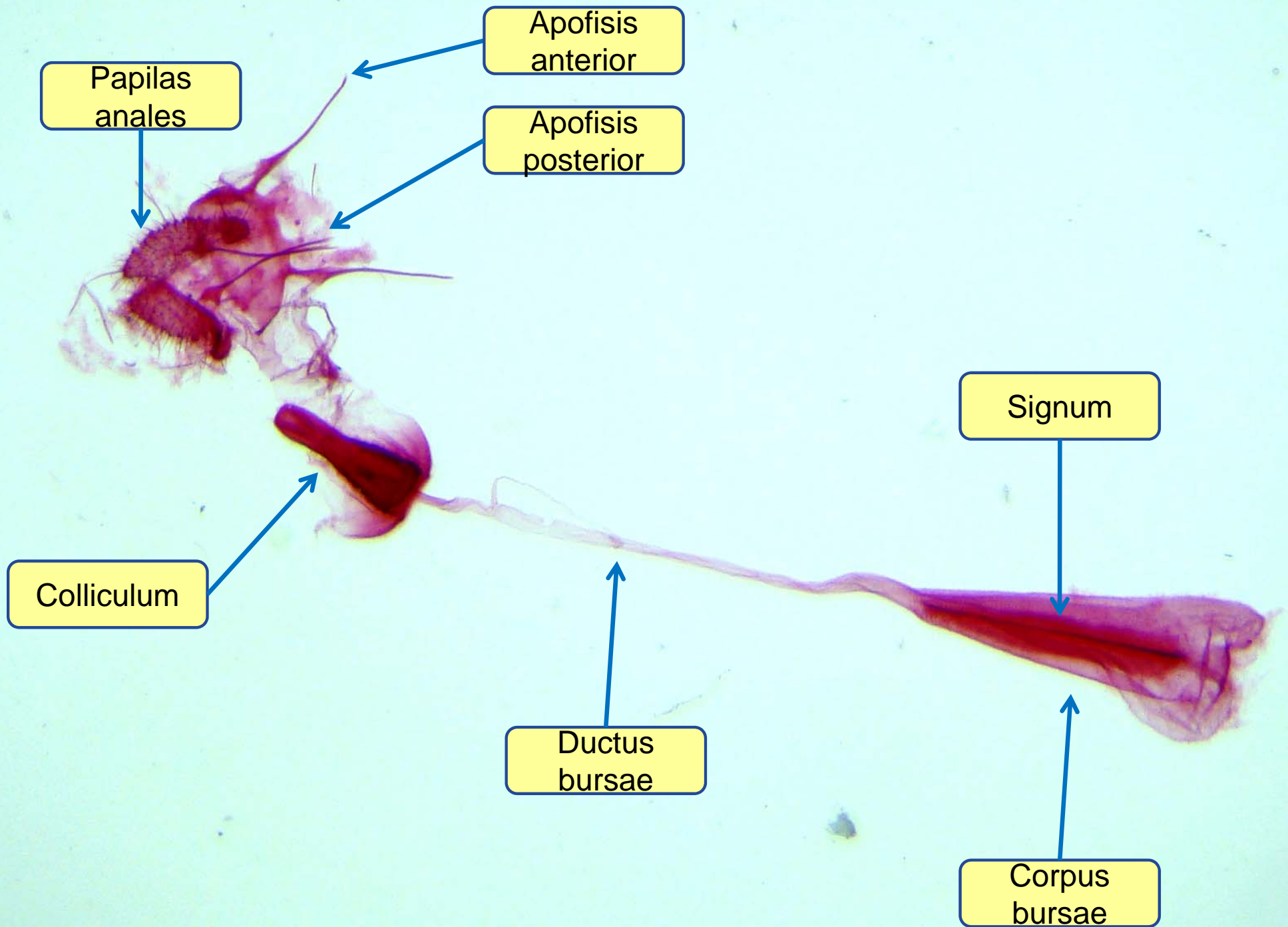
Vinculum

Sacculus

Genitalia femenina

- Parte tubular del sterigma delgada
- Signum largo, proximalmente puntiagudo, longitudinalmente doblado
- Colliculum delgado y largo

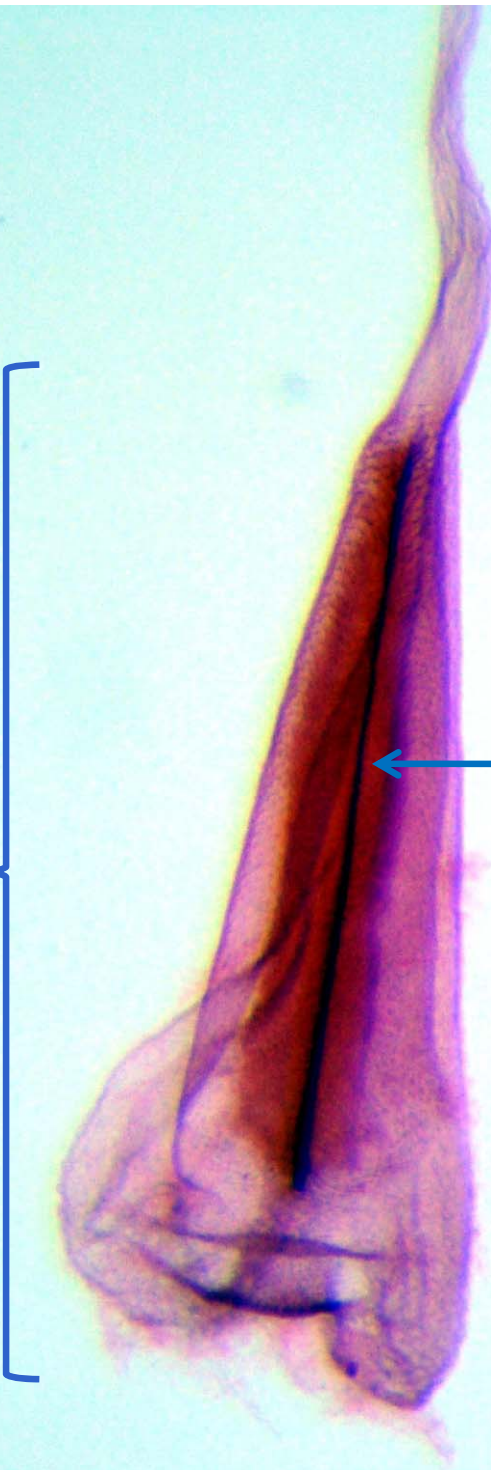




Corpus bursae

Ductus bursae

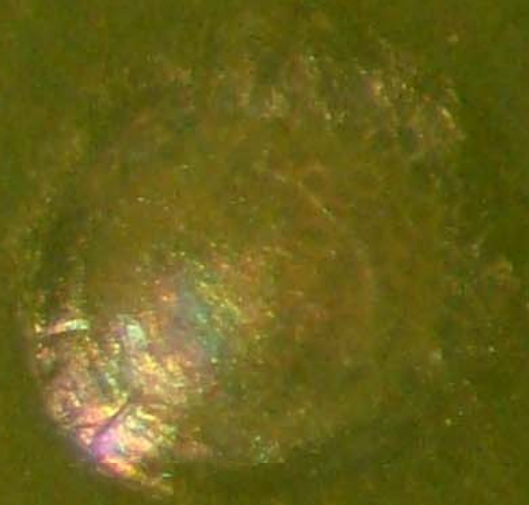
Signum



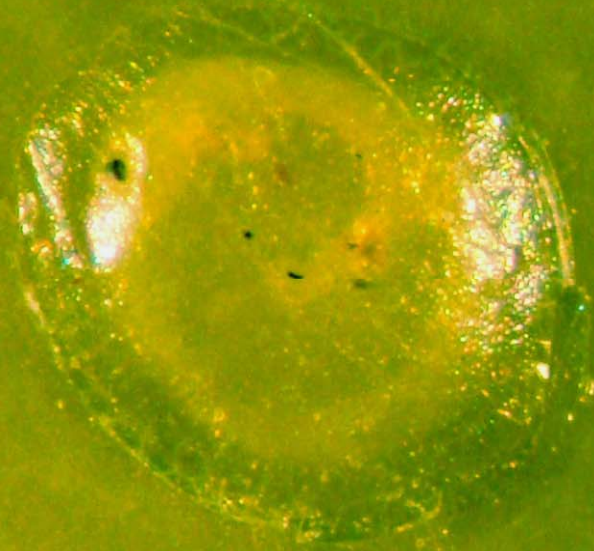
Huevo de *L. botrana*



Huevo blanco



Huevo amarillo



Huevo cabeza negra



Larva de *L. botrana*



Larva neonata (L1)

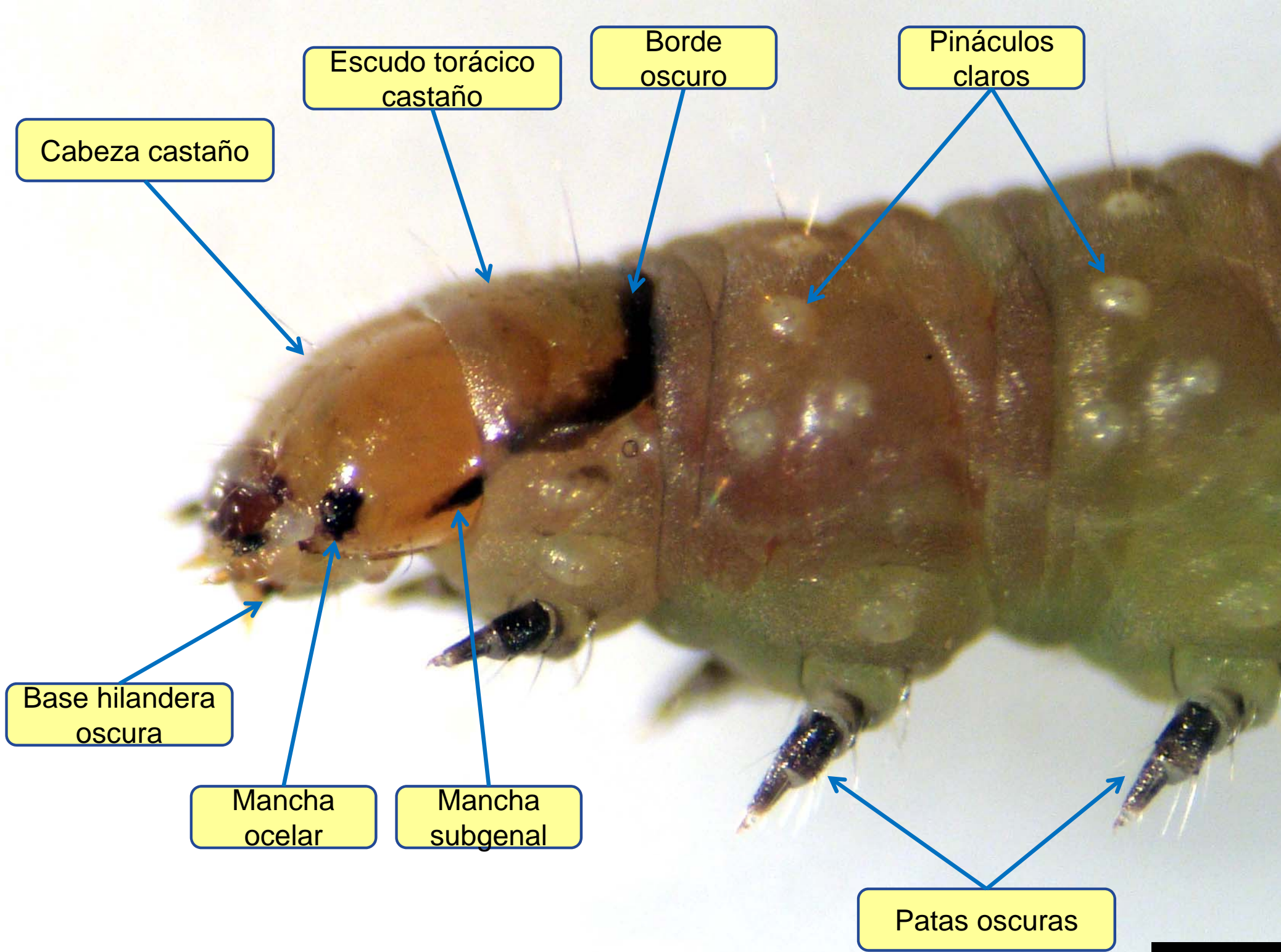


Larva 2° instar (L2)



Larva desarrollada (L5)

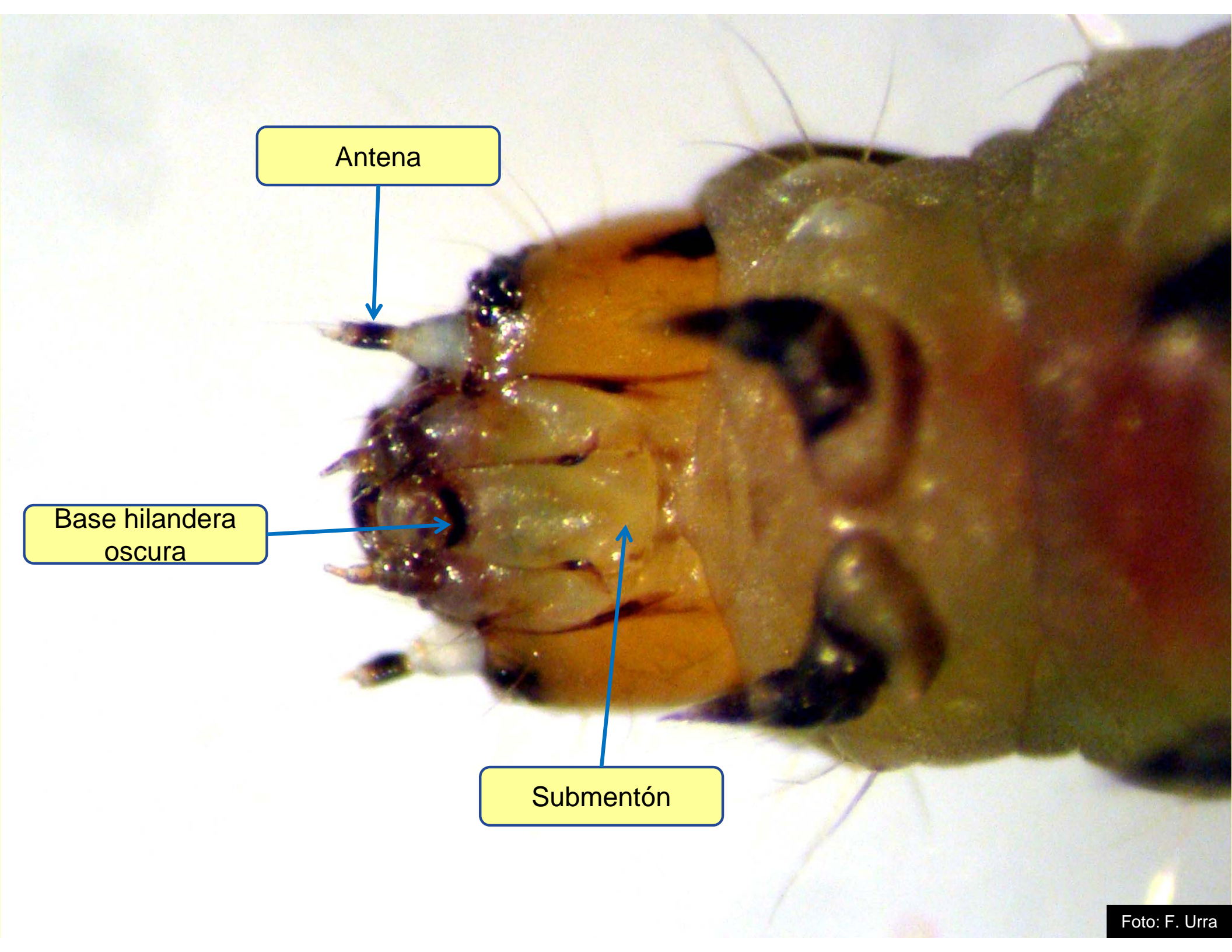


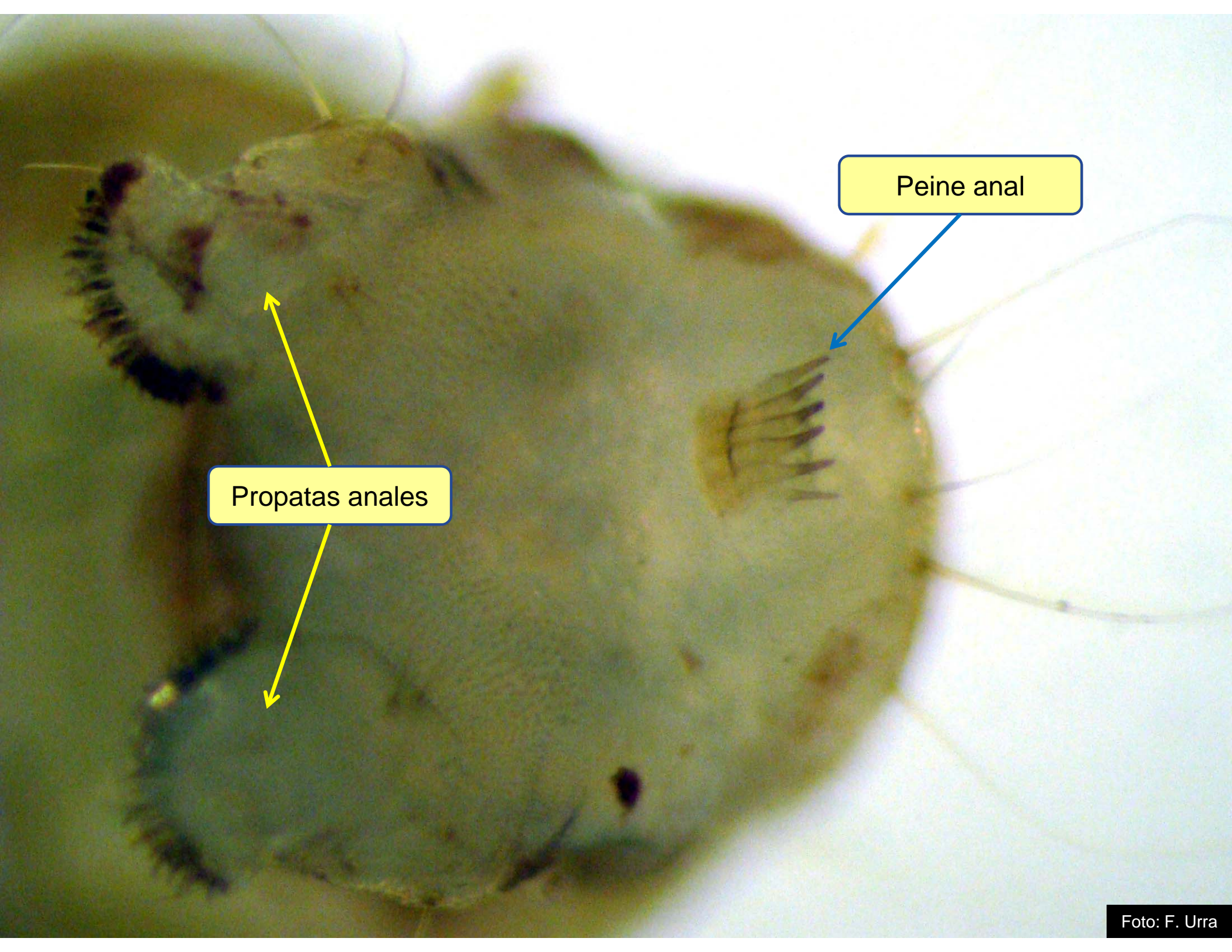


Antena

Base hilandera
oscura

Submentón





Propatas anales

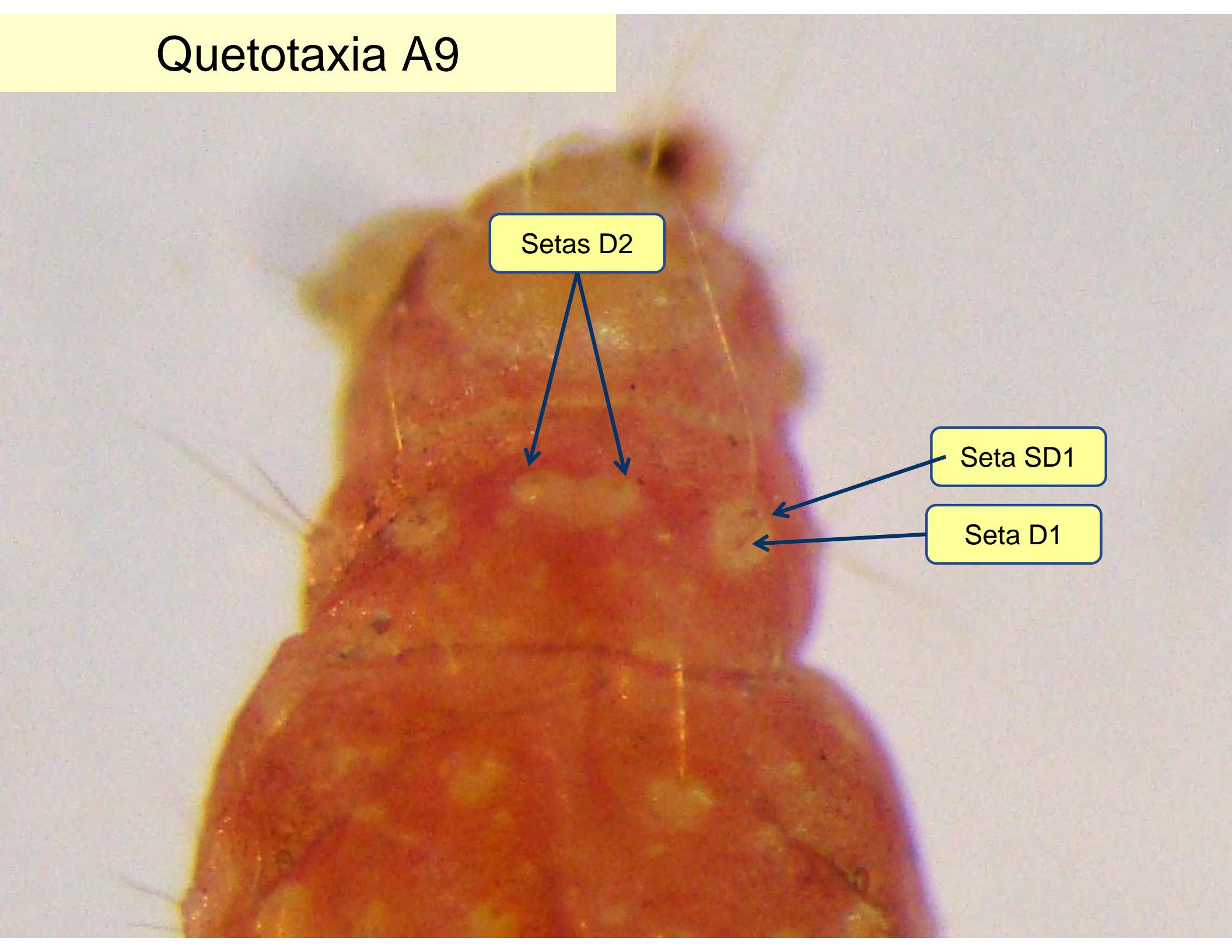
Peine anal

Quetotaxia A9

Setas D2

Seta SD1

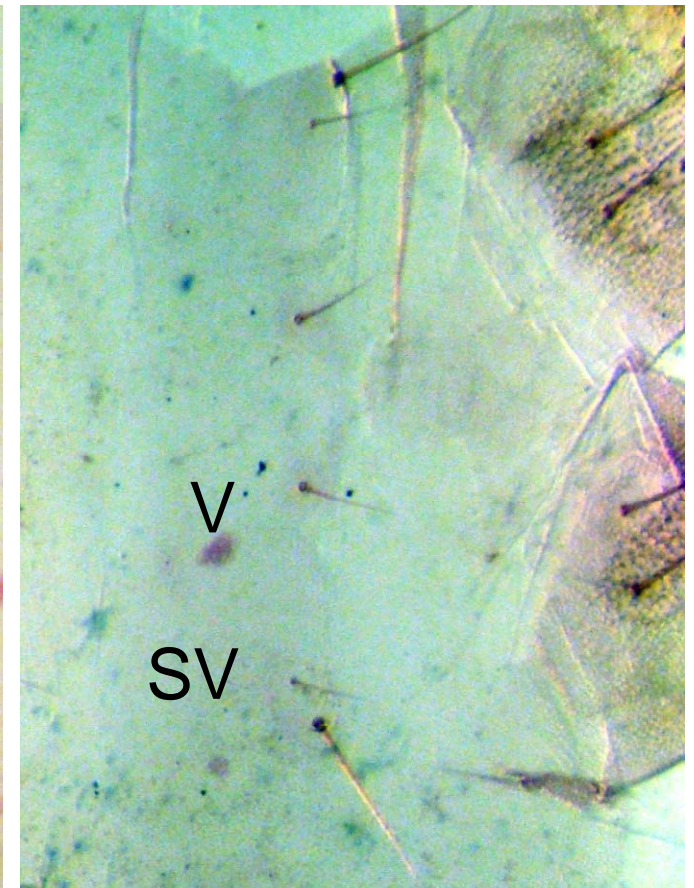
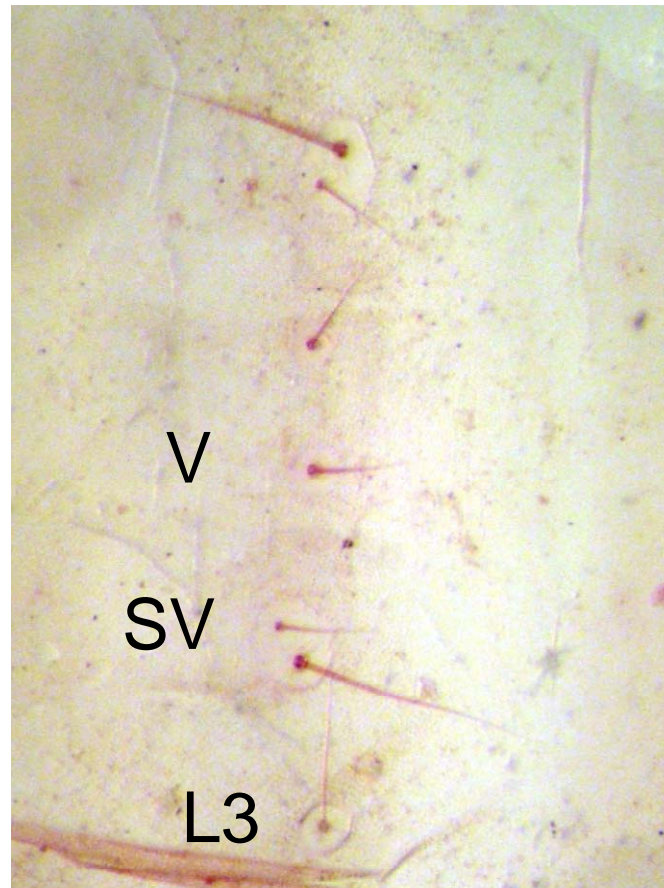
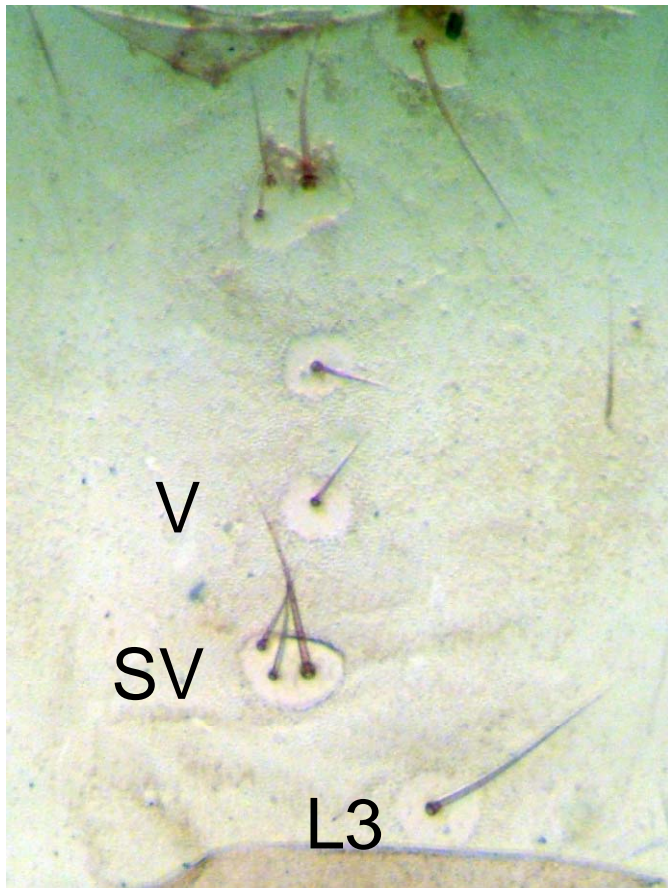
Seta D1



A7

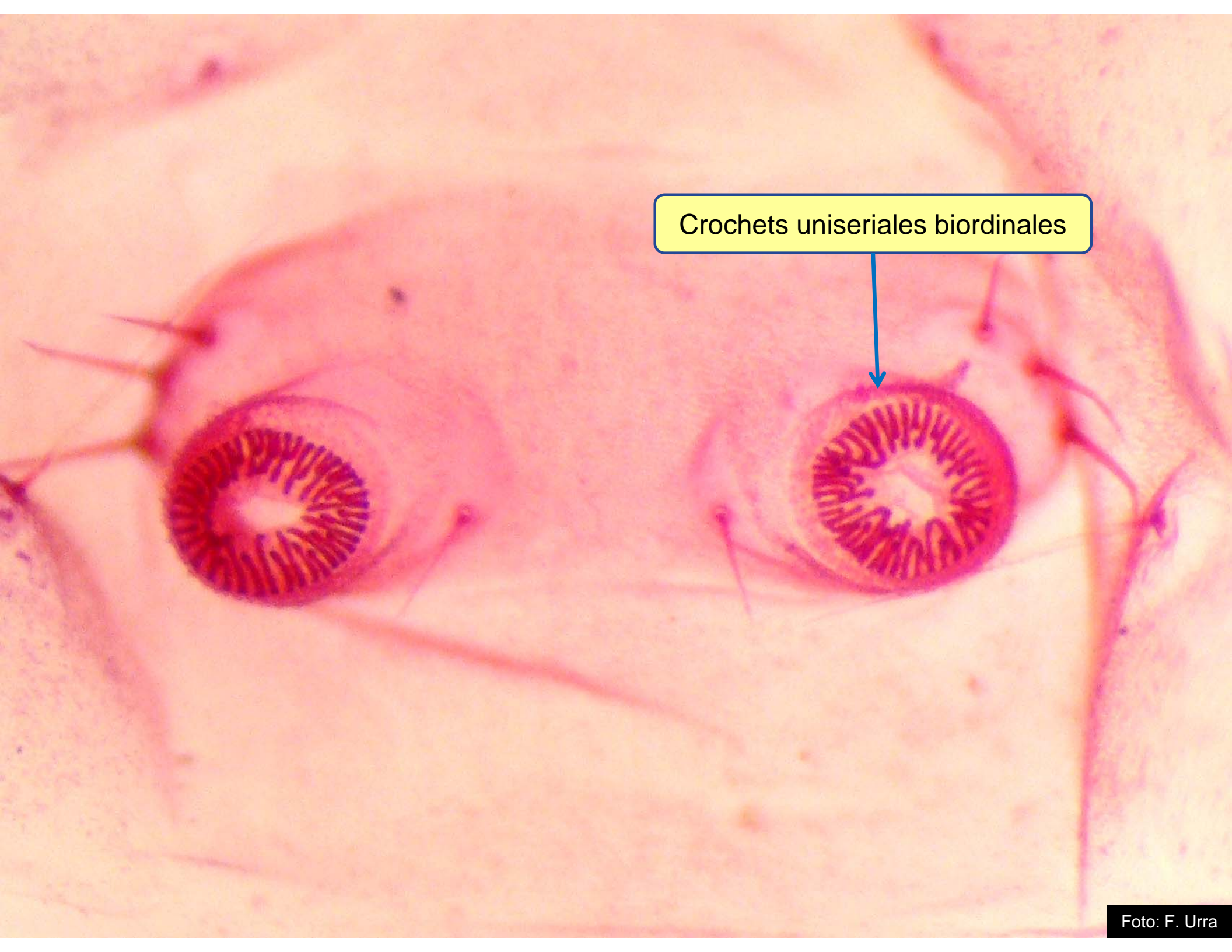
A8

A9

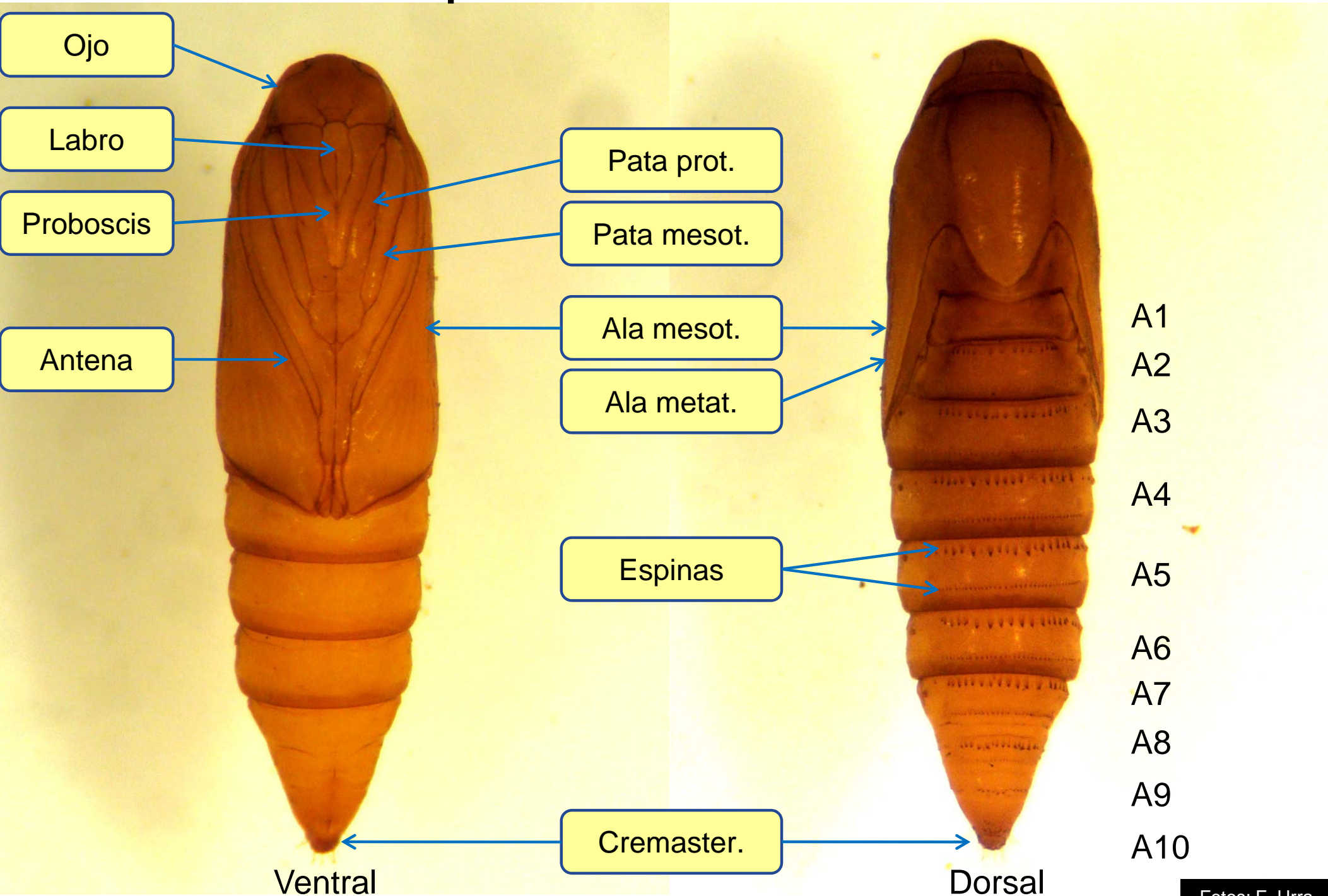


Setas subventrales A7,8,9 fórmula 3: 2: 2

Crochets uniseriales biordinales

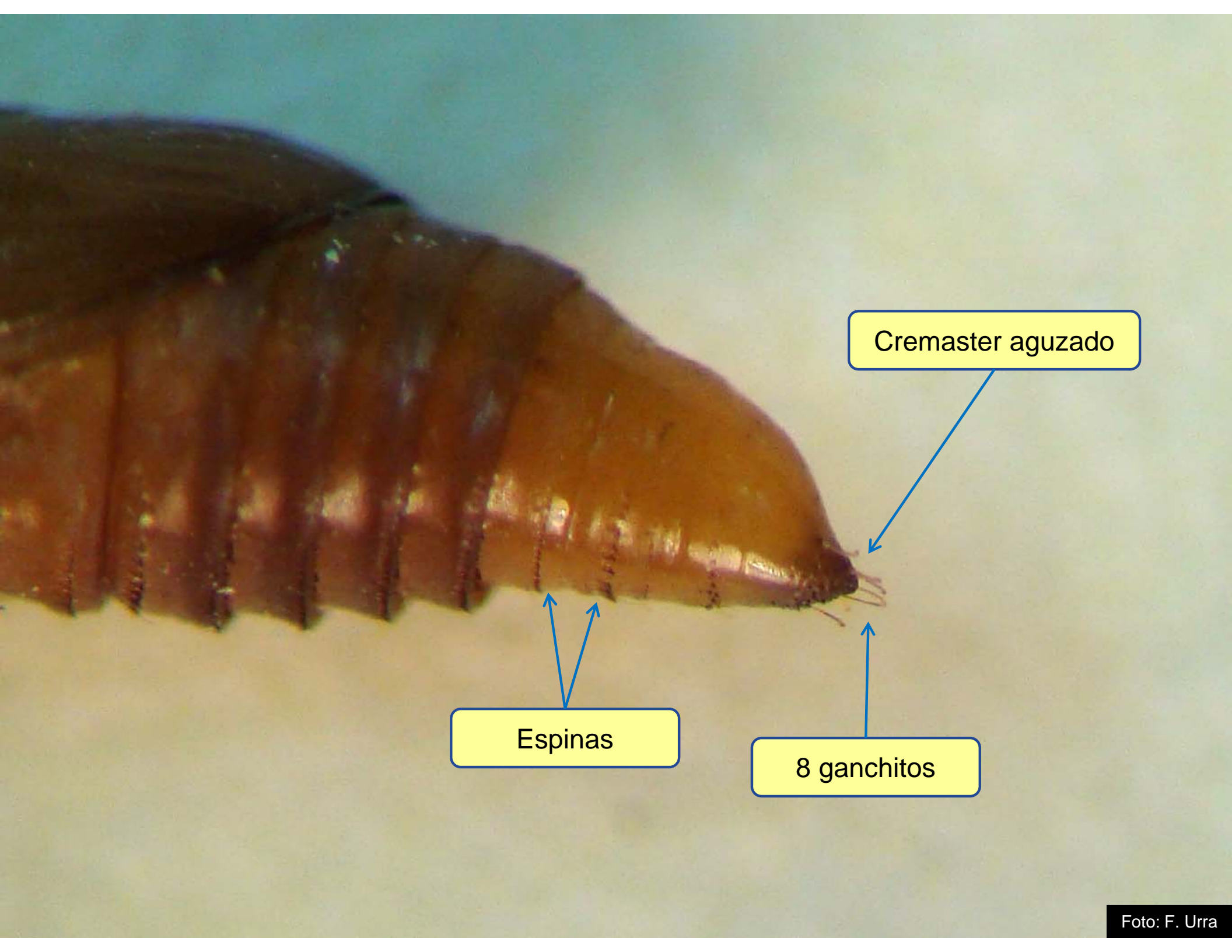


Pupa de *L. botrana*







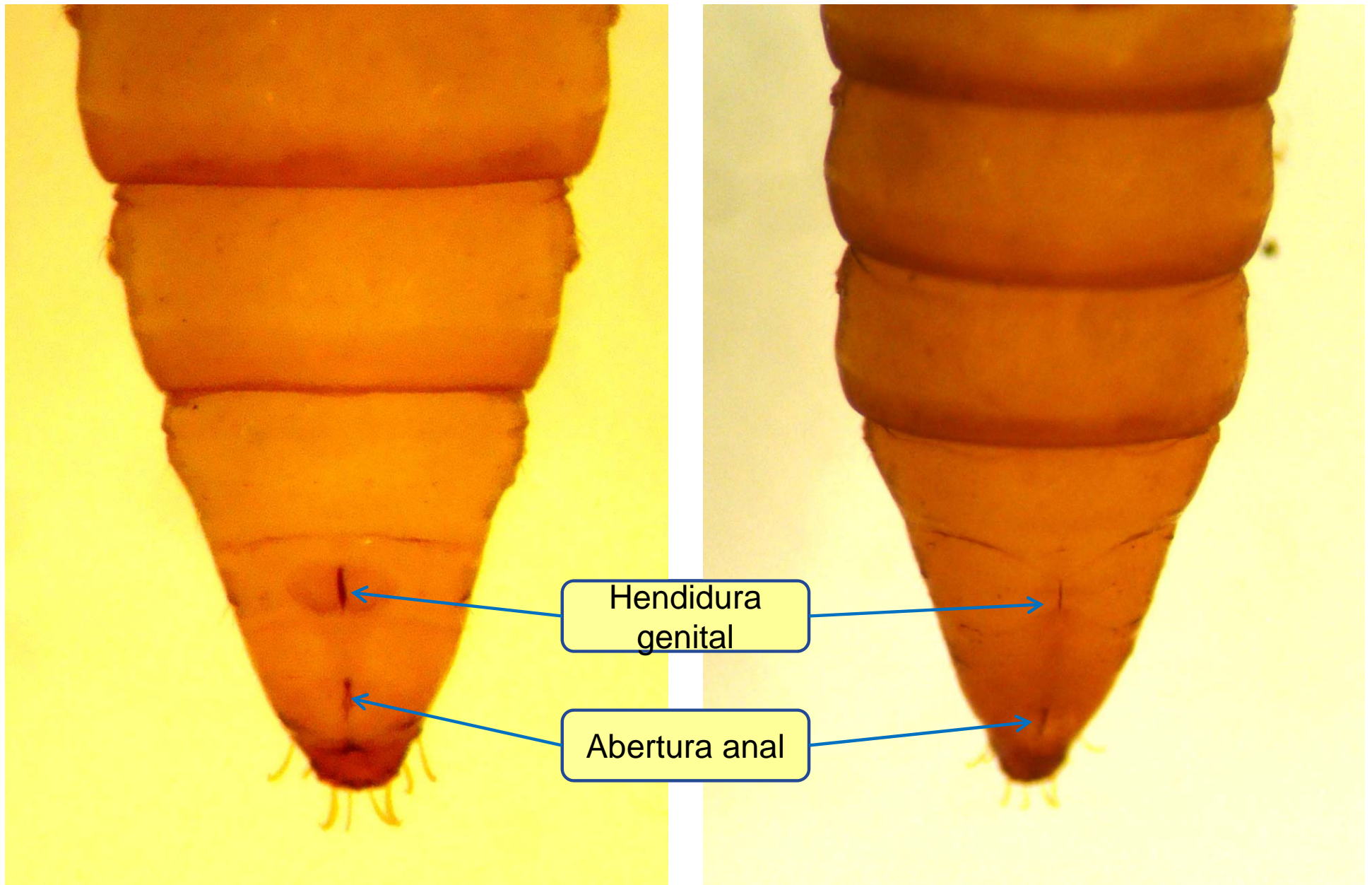


Cremaster aguzado

Espinass

8 ganchitos

Sexaje de pupas de *L. botrana*

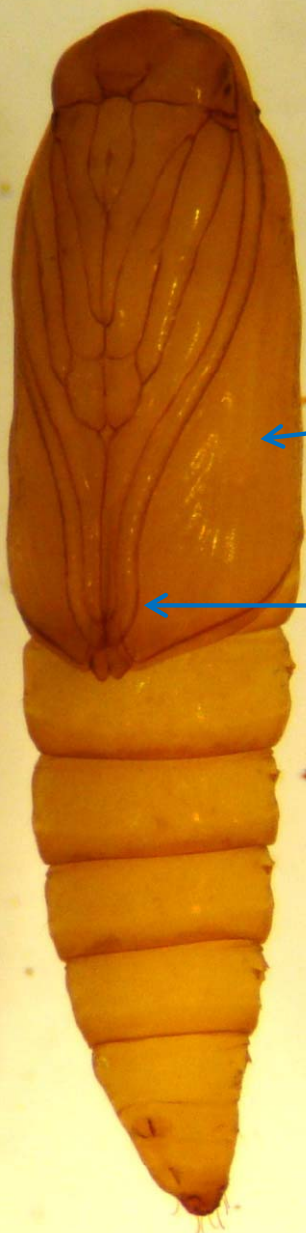


Macho

Hembra

Macho

Hembra



Ala

Antena