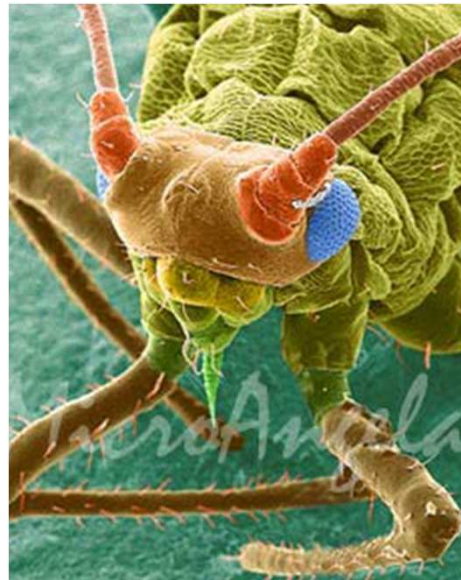
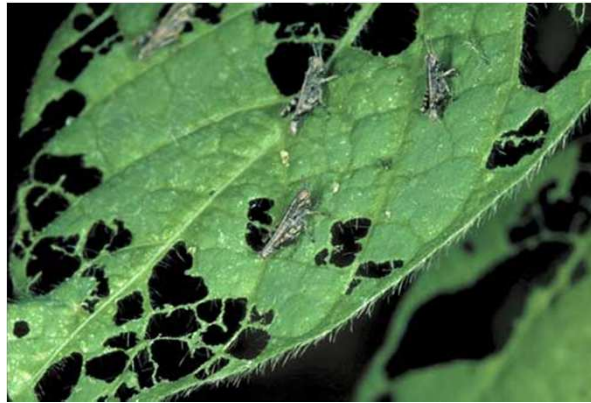


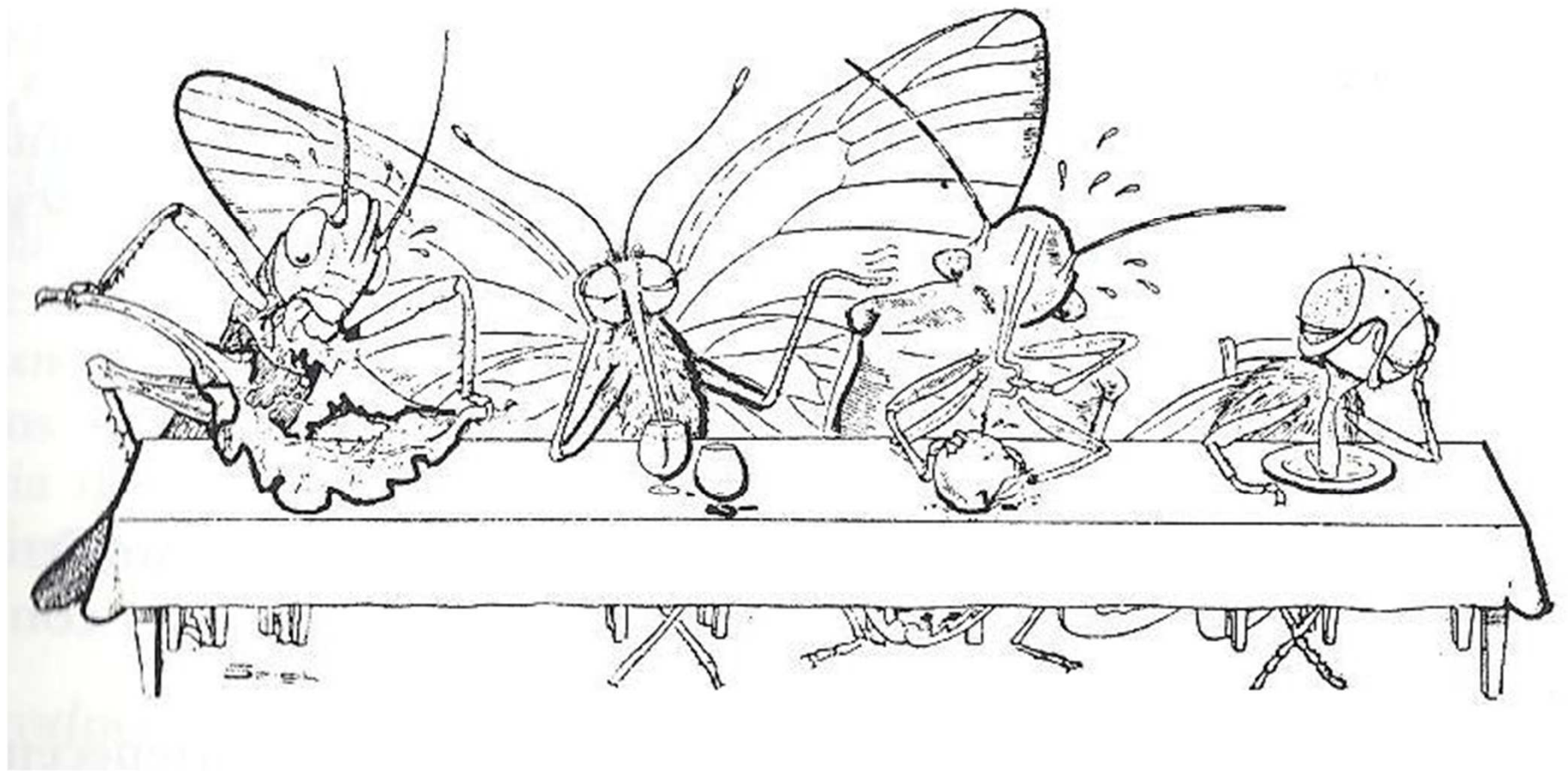
# Armaduras bucais e tipos de estragos

Elisabete Figueiredo

José Carlos Franco



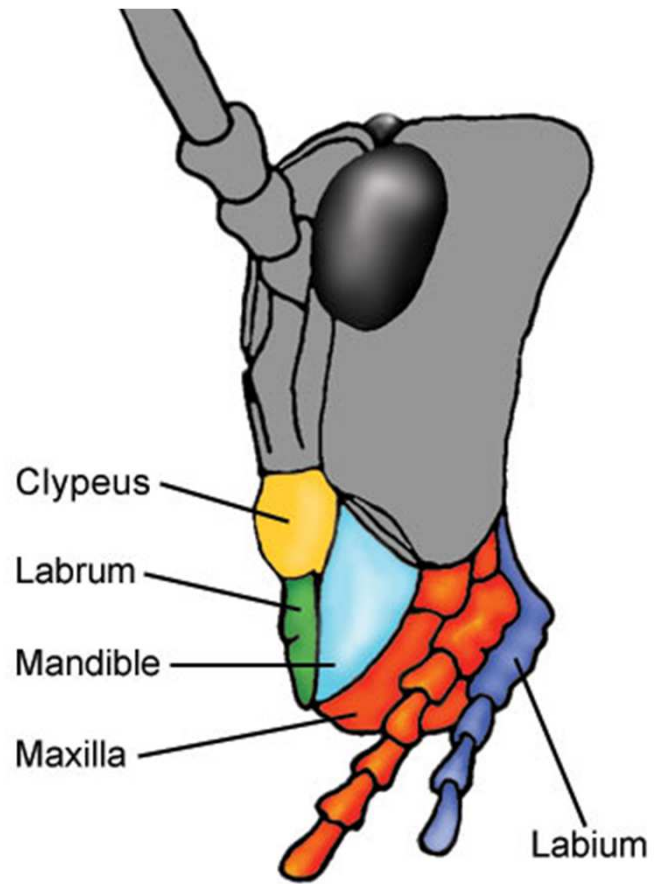
**Os estragos causados pelos insectos nas plantas resultam sobretudo da alimentação e a forma dos insectos se alimentarem depende da armadura bucal**



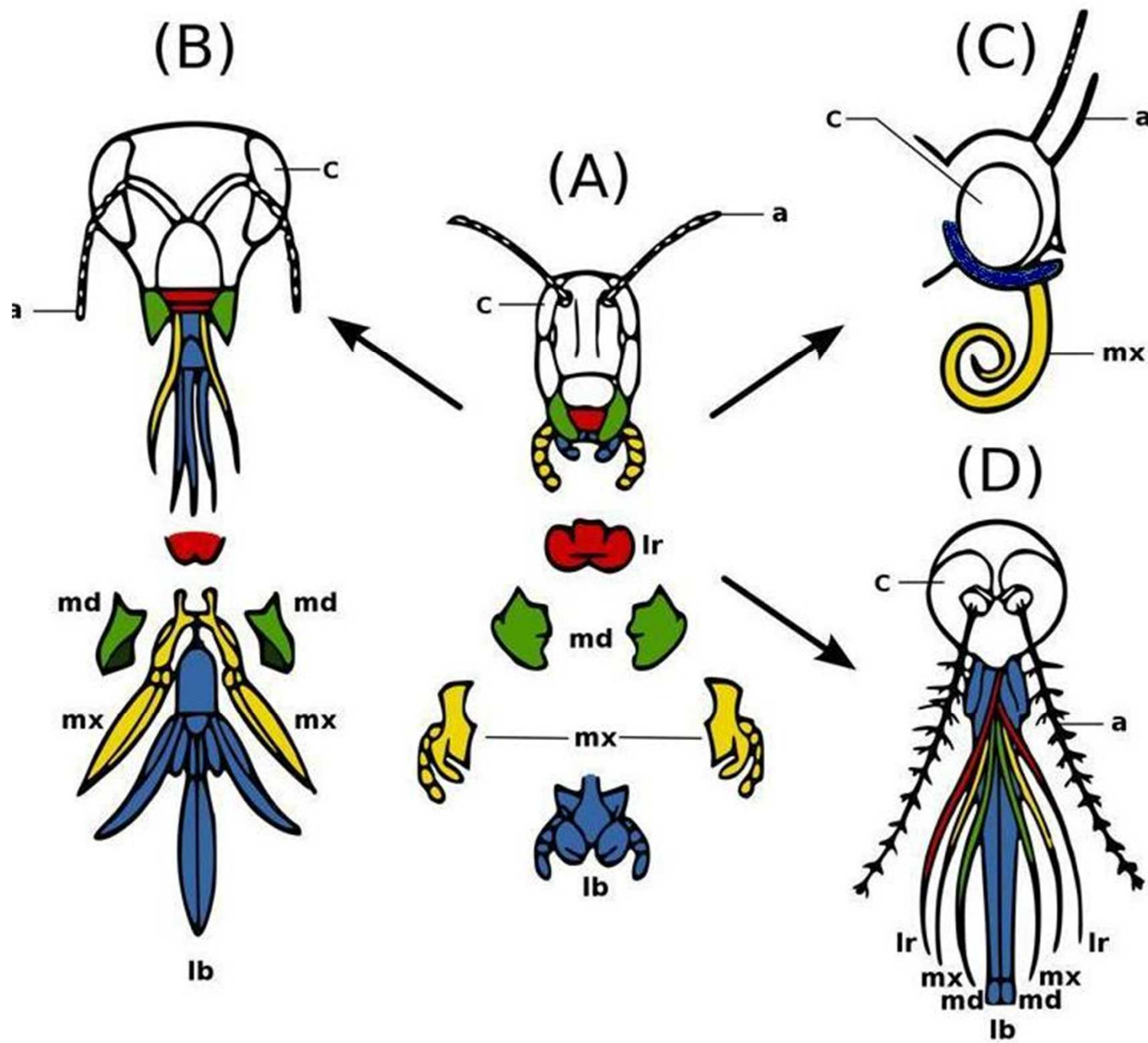
Cartoon de Spghi

# Armaduras bucais - tipos

- **Trituradora**
- **Ectossugadoras**
  - muscóide
  - libadora
  - lambedora-sugadora
- **Endossugadoras**
  - picadora-sugadora (e seus subtipos  
Incluindo escarificadora-assimétrica)

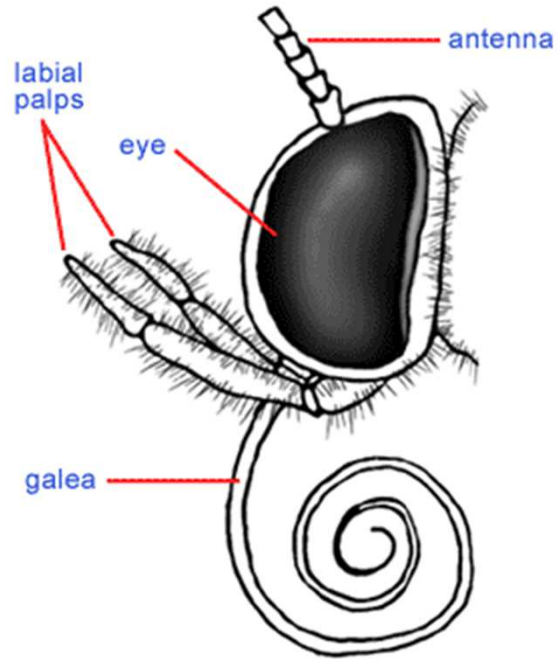


Trituradora



Adaptado de [www.wikipedia.org](http://www.wikipedia.org)

# Ectossugadoras



Libadora

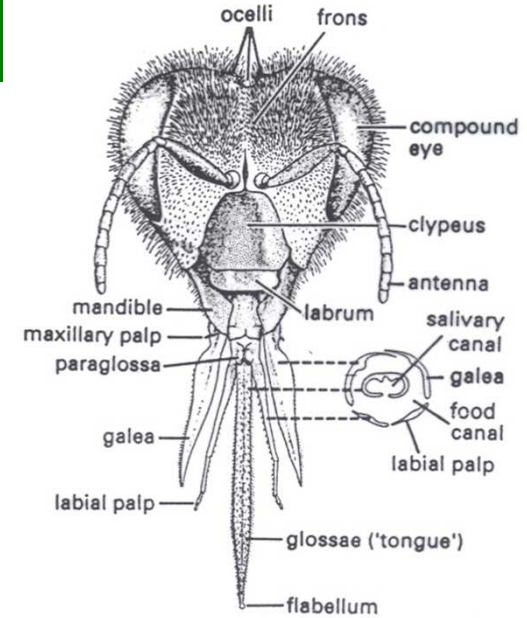
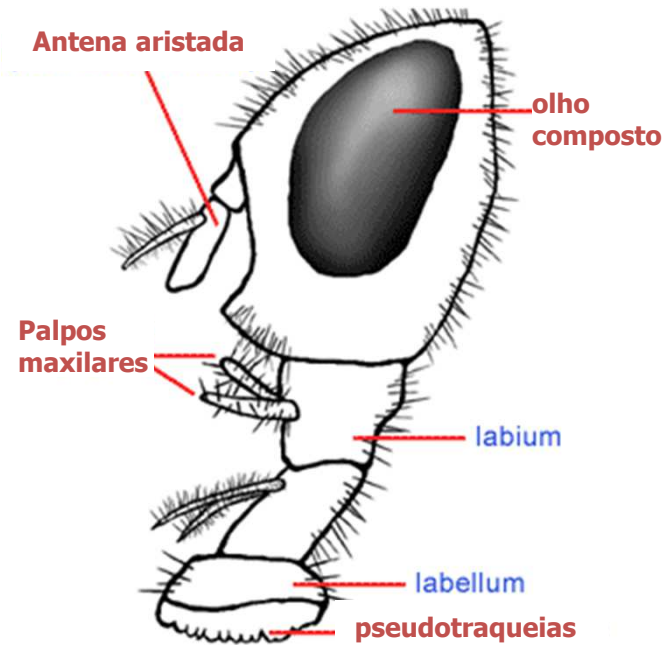
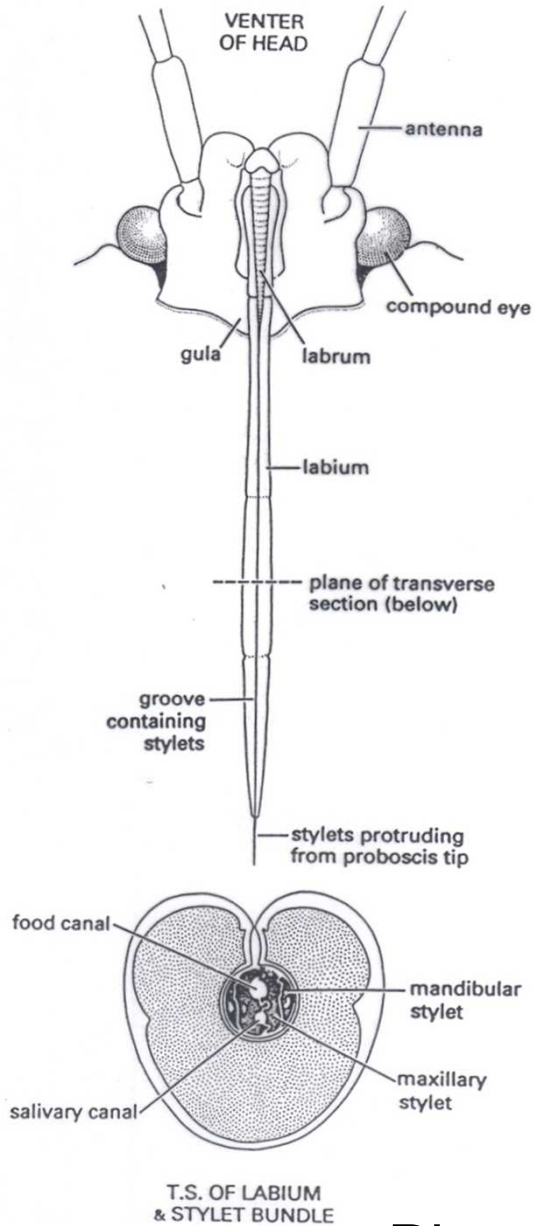


Fig. 2.11 Frontal view of the head of a worker honey bee, *Apis mellifera* (Hymenoptera: Apidae), with transverse section of proboscis showing how the 'tongue' (fused labial glossae) is enclosed within the sucking tube formed from the maxillary galeae and labial palps. (Inset after Wigglesworth, 1964.)

Lambedora-sugadora

Muscóide

# Endossugadoras



## Picadora-sugadora

# Escarificadora-assimétrica

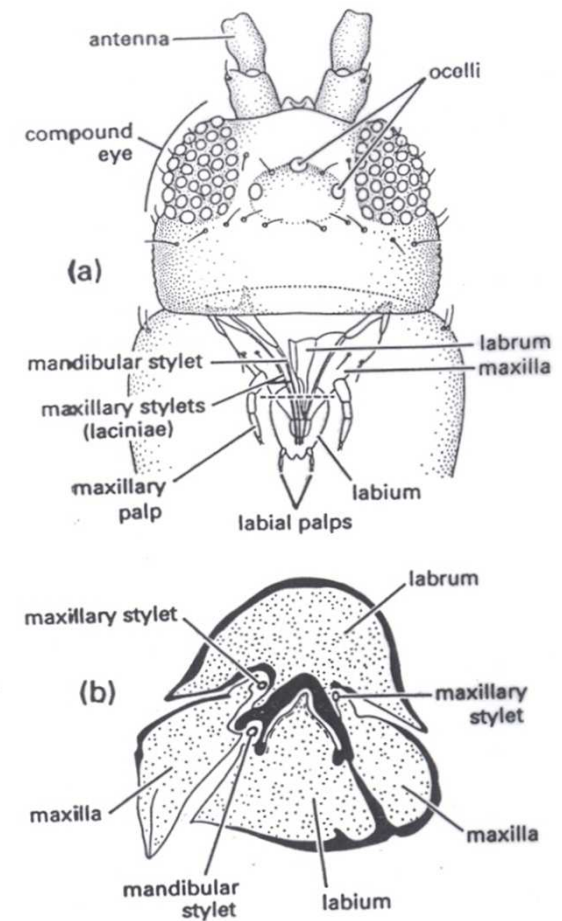


Fig. 2.13 Head and mouthparts of a thrips, *Thrips australis* (Thysanoptera: Thripidae): (a) dorsal view of head showing mouthparts through prothorax; (b) transverse section through proboscis. The plane of the transverse section is indicated by the dashed line in (a). (After CSIRO, 1970; Matsuda, 1965.)



# Estragos directos: trituradora

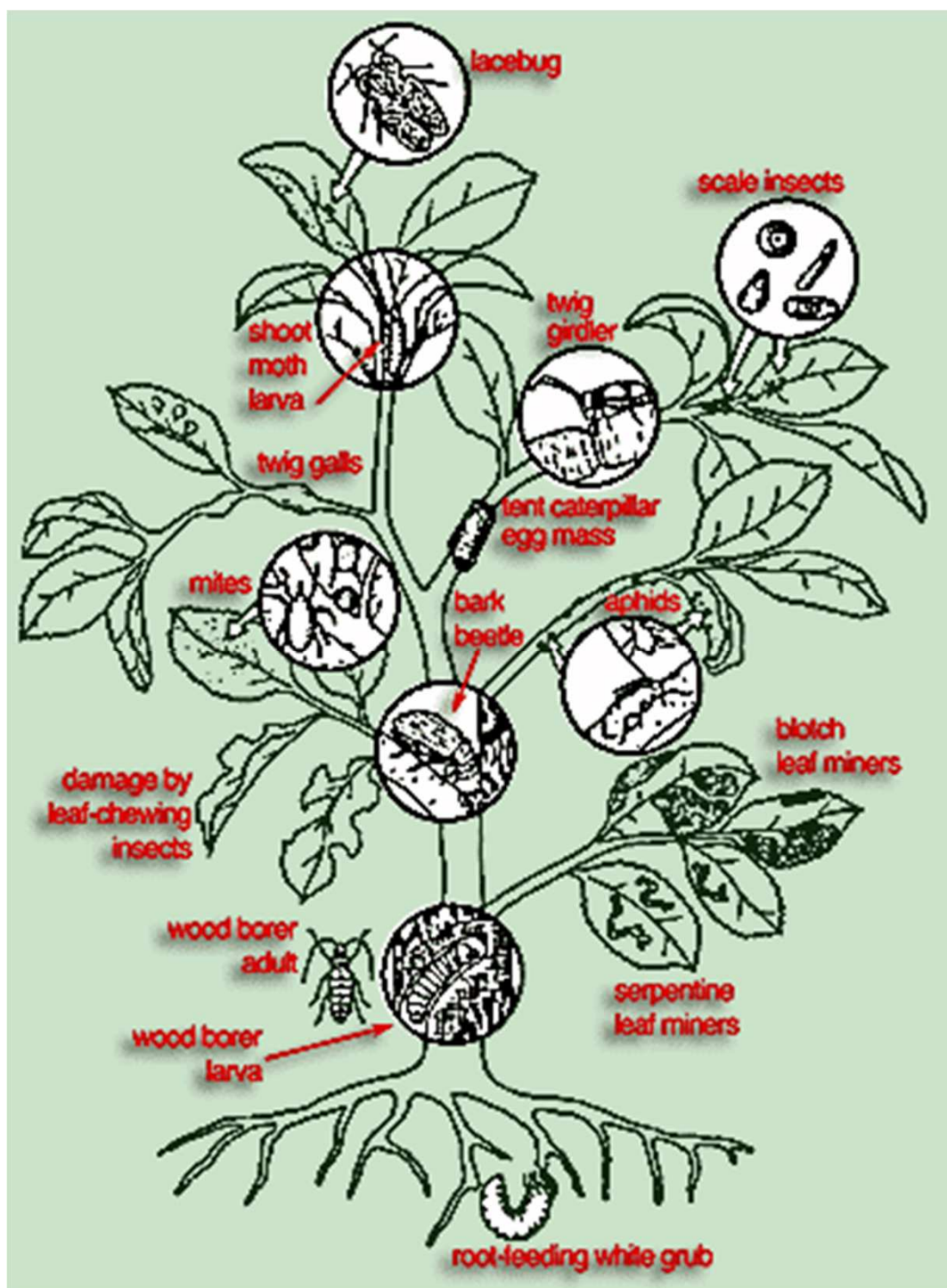
- Folhas: redução de área foliar
- Flores e frutos
- Sementes
- Caules (brocas)
- Gomos e rebentos (vegetativos ou florais)
- Raízes, bolbos e tubérculos

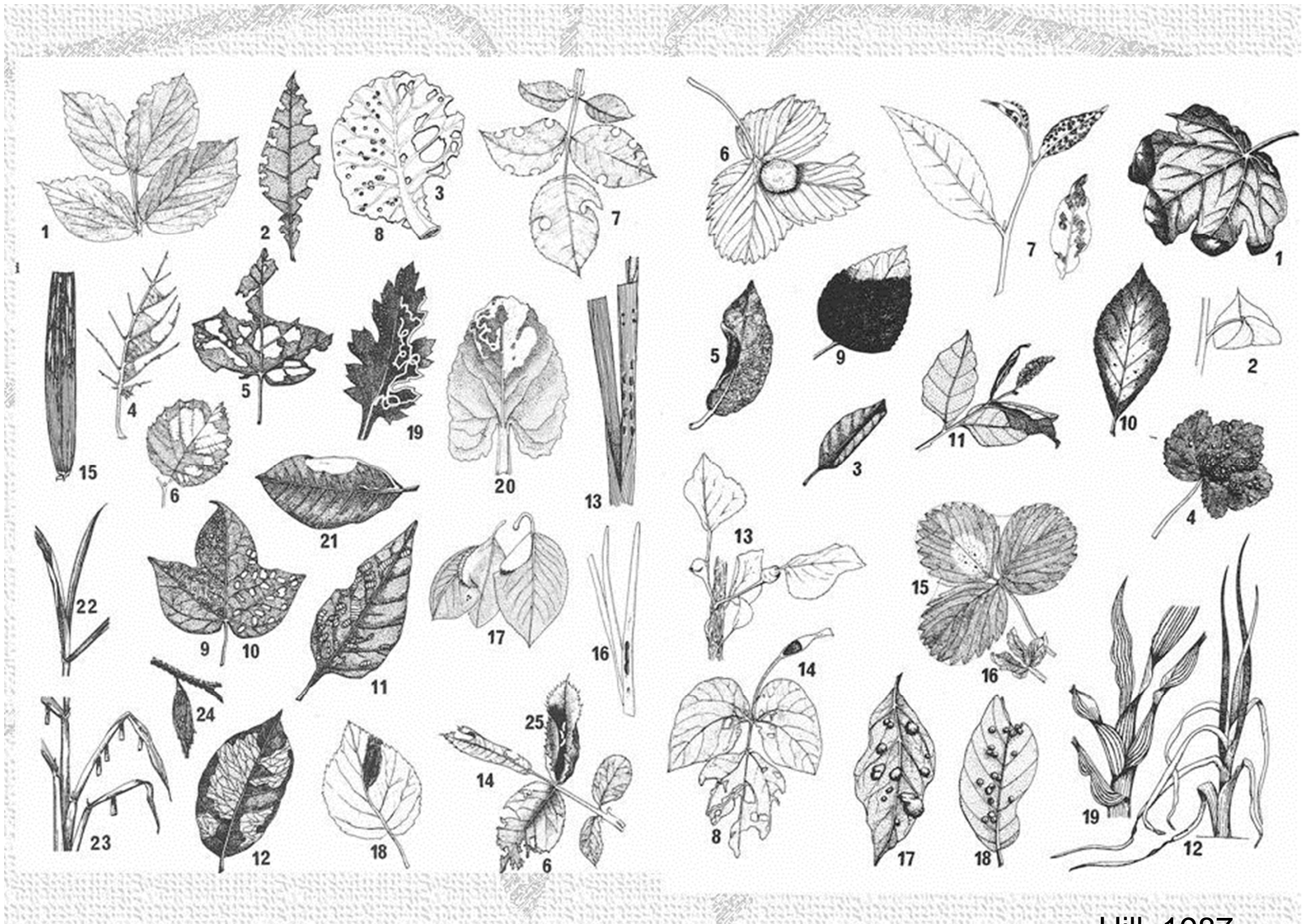
# Estragos directos: picadora sugadora

- Remoção de seiva
- Picadas em folhas, flores, frutos
- Abcisão de folhas, flores e frutos
- Fitotoxidade (e.g. necrose, descolorações, deformações)

# Estragos indirectos

- Portas de entrada para patogénios
- Transmissão de doenças
- Dificultar práticas culturais e colheita
- Atraso da maturação
- Infestação e perda de qualidade
- Melada - fumagina





Hill, 1987



© A. Latch

©dms 7-19-2009

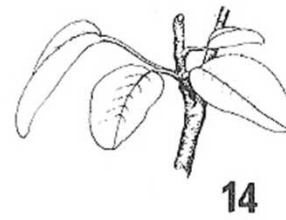
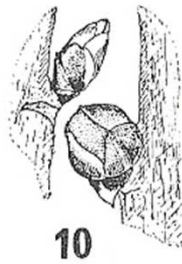
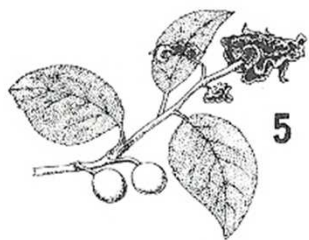
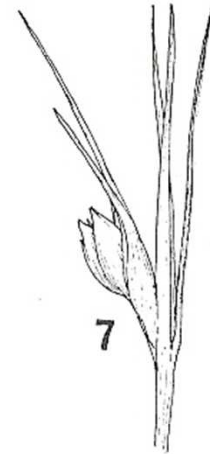
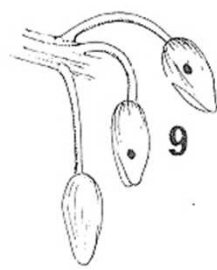
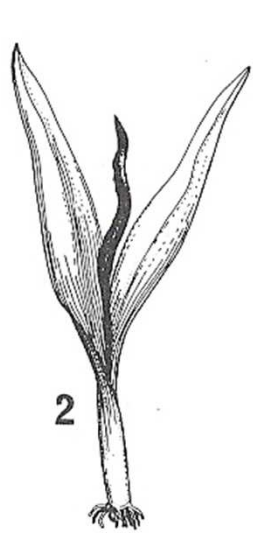
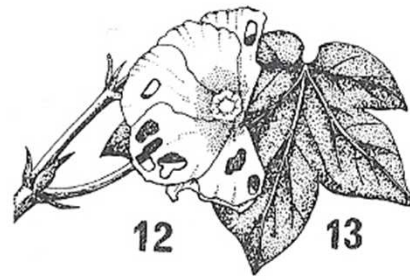








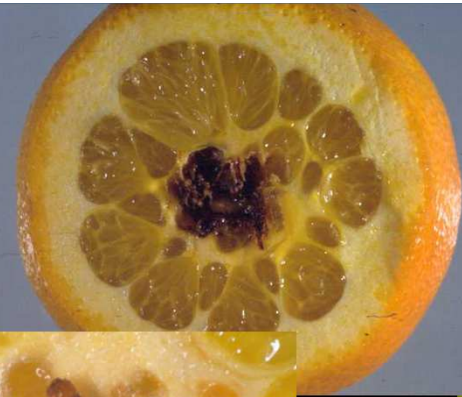




Hill, 1987



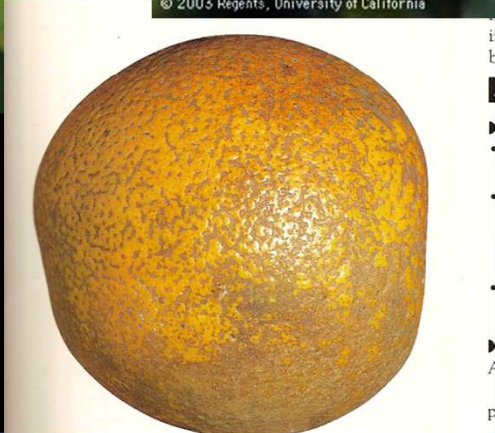




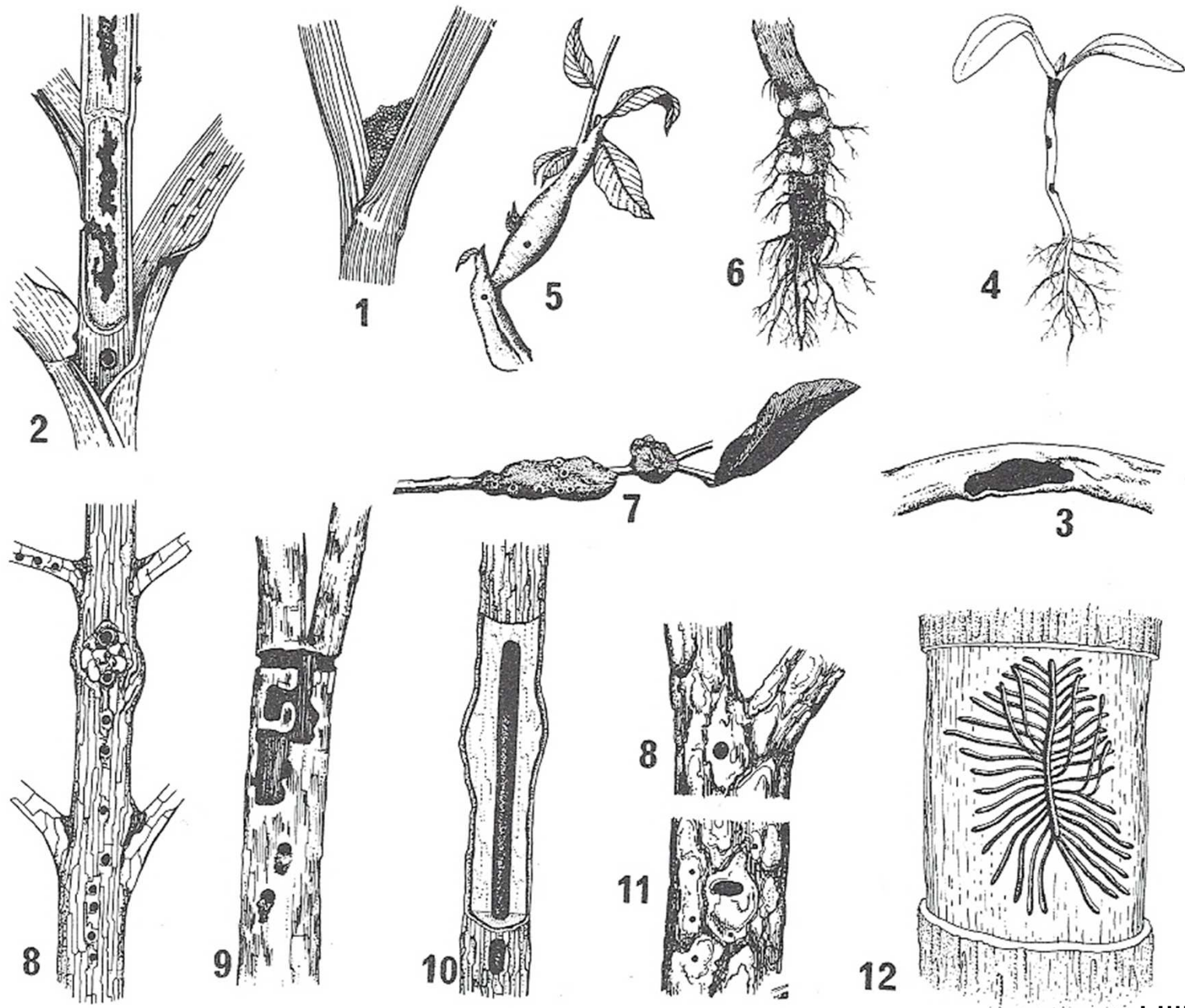




UC Statewide IPM Program  
© 2003 Regents, University of California









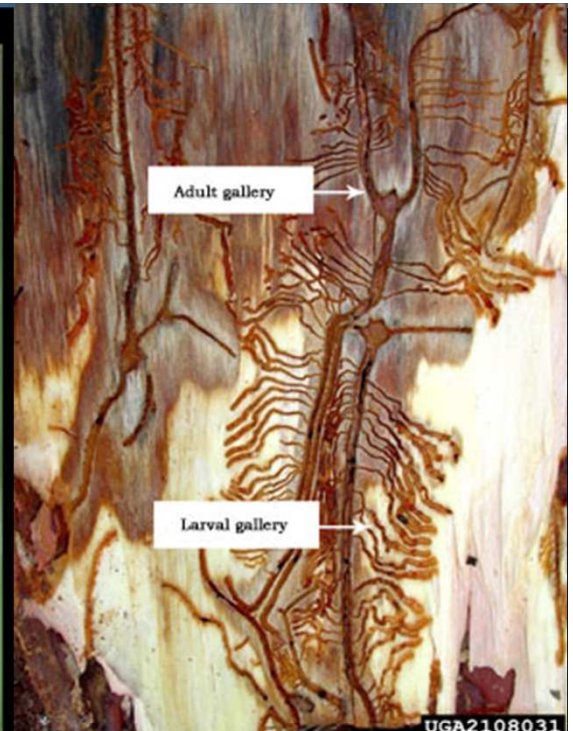
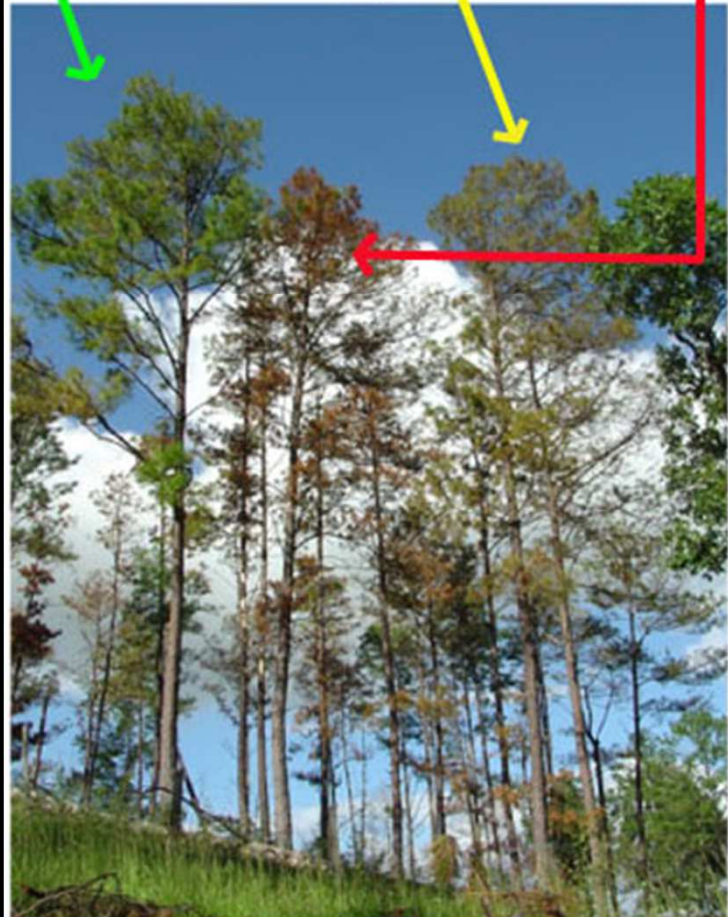
# Escolitídeos



Stage 1

Stage 2

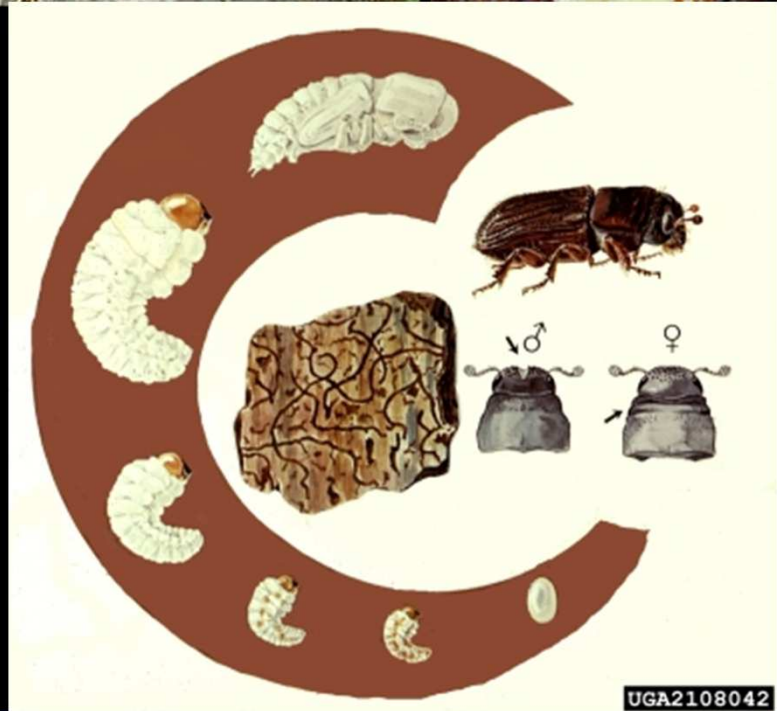
Stage 3



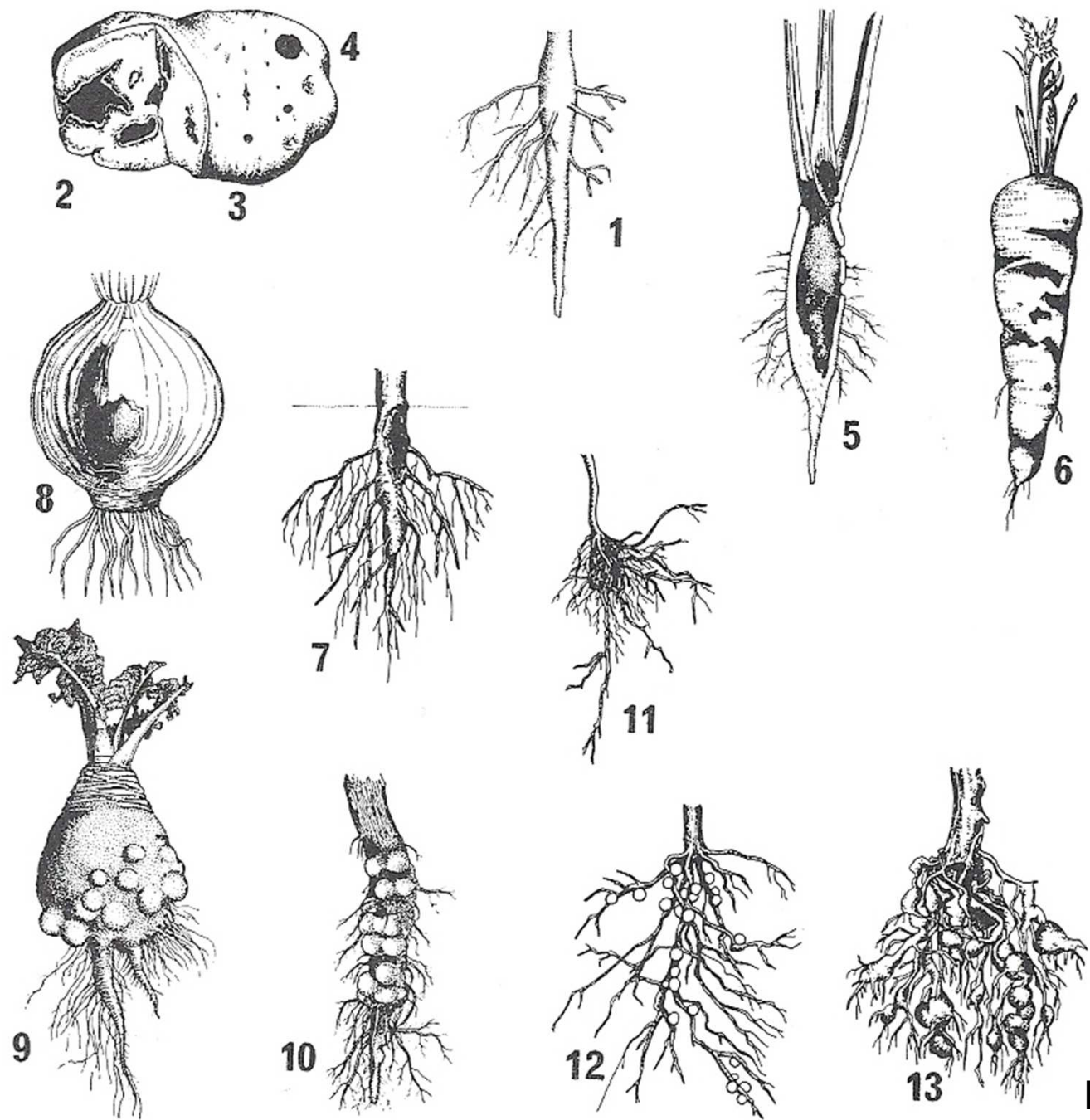
Adult gallery

Larval gallery

UGA2108031

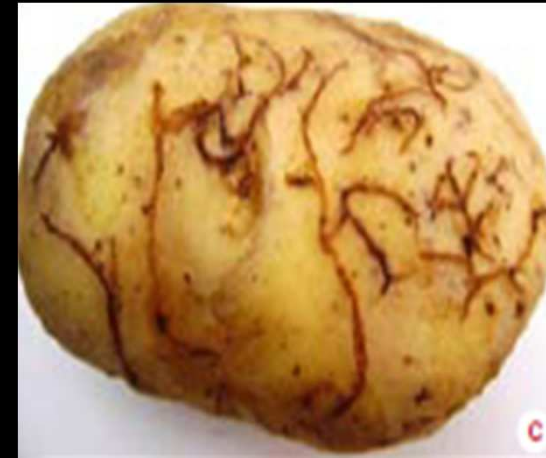


UGA2108042



Hill, 1987

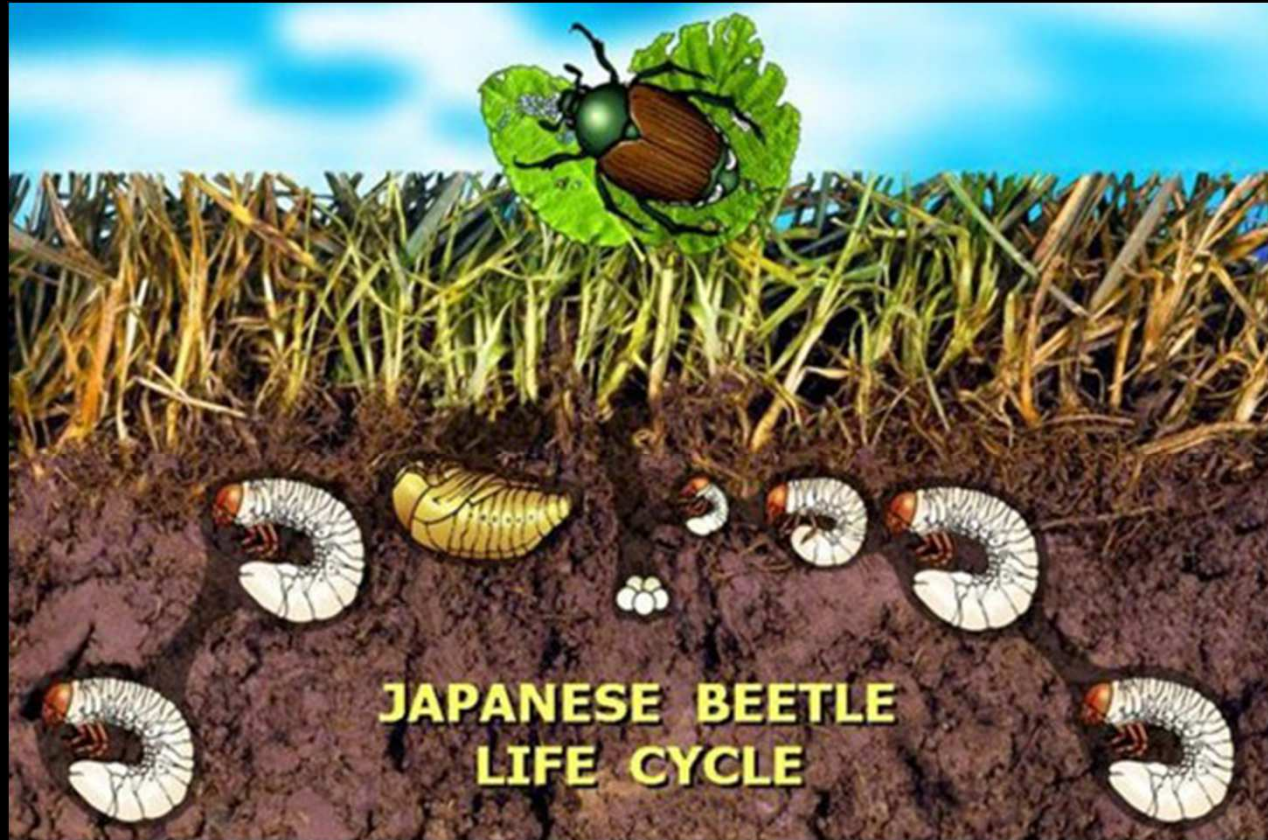
# alfinetes





Lawn damaged by masked chafer larvae





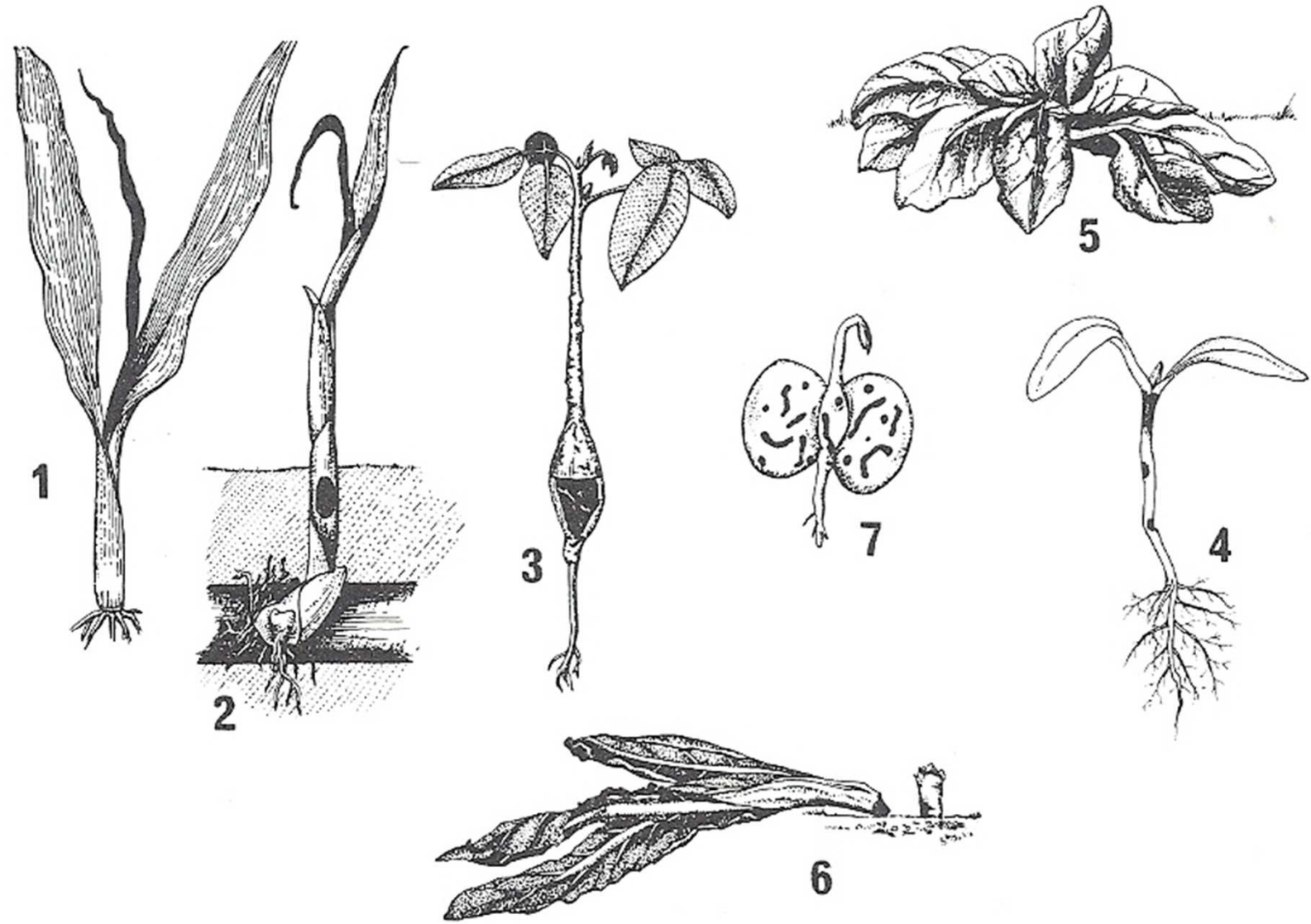
# JAPANESE BEETLE LIFE CYCLE

JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC



©MARLIN E. RICE







# Galhas ou cecídeas



© Miguel Barbosa



