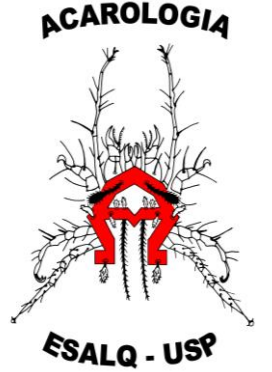




ESALQ



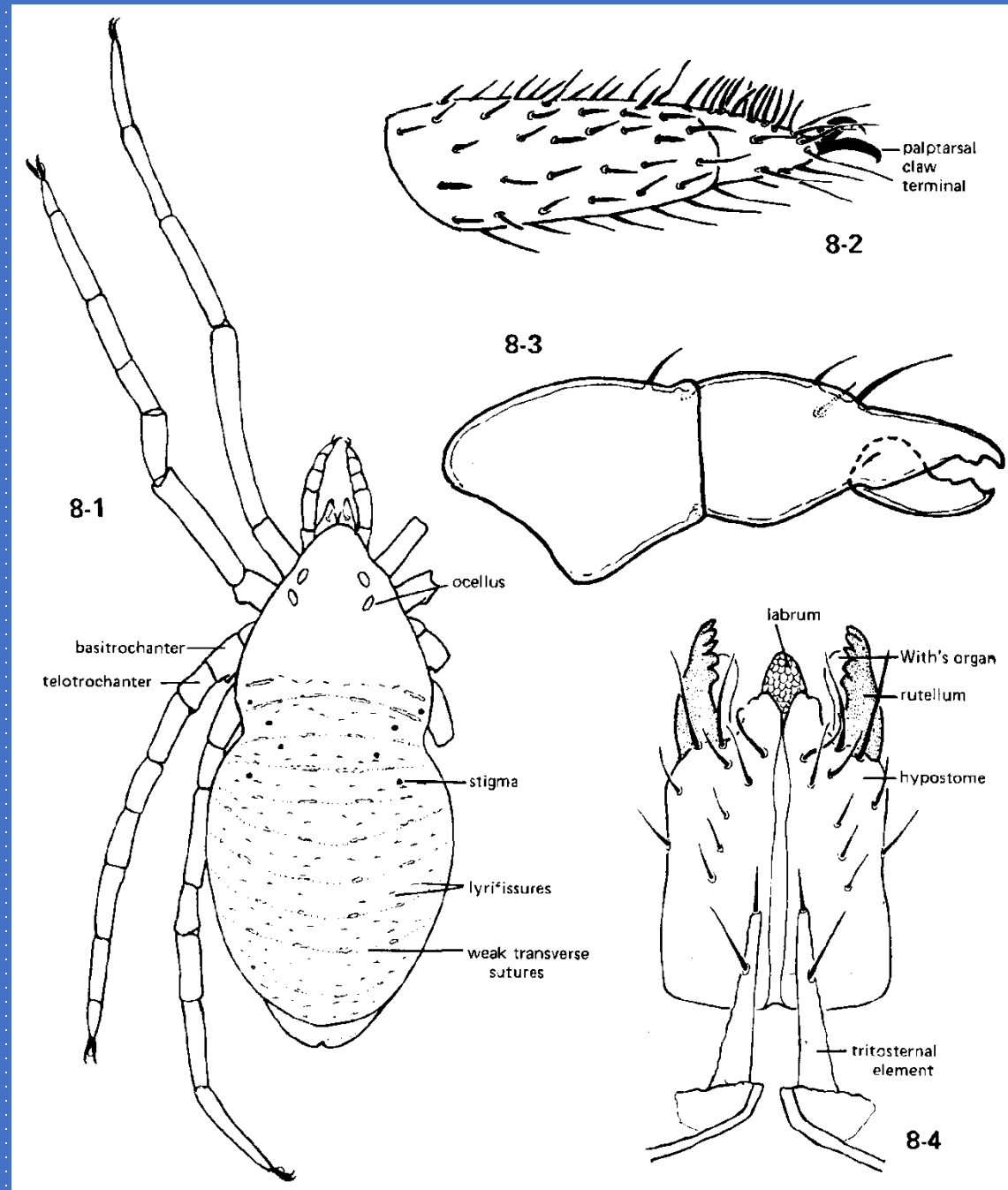
Aspectos Biológicos dos Ácaros

LEA0498 - Acarologia
Agosto 2023

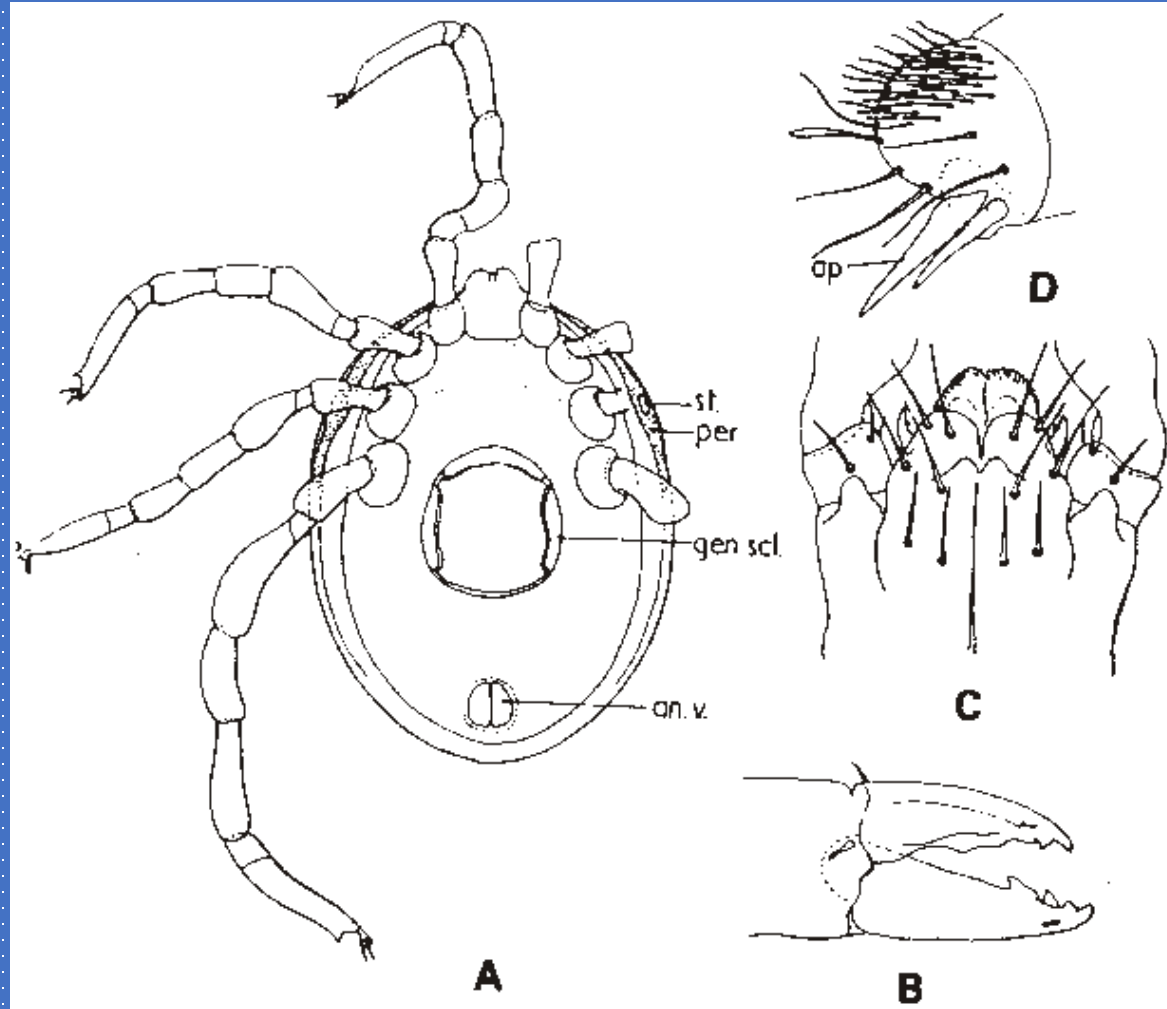
Grandes Grupos de Ácaros (ordens)

- Opilioacarida - x
- Holothyrida - x
- Ixodida - Carrapatos
- Mesostigmata – Principalmente predadores
- Trombidiformes – Principalmente fitófagos e predadores
- Sarcoptiformes – Principalmente detritívoros, fungívoros, parasitos

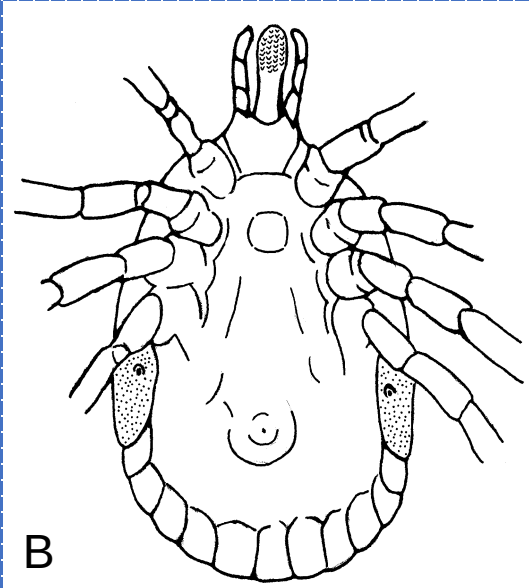
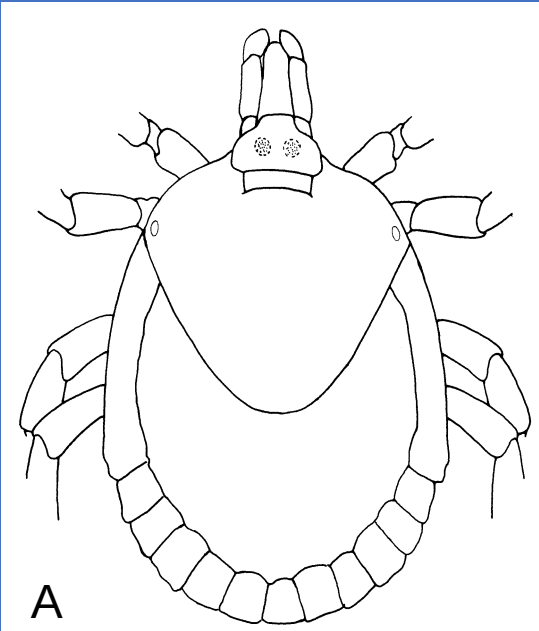
Opilioacarida



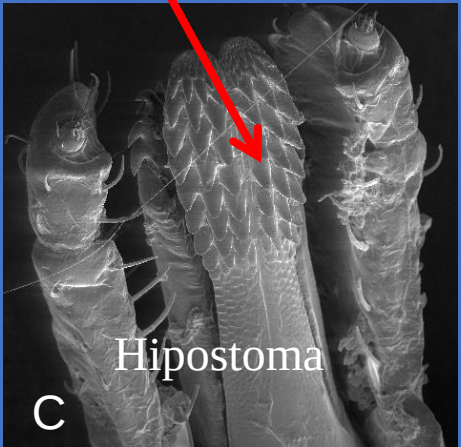
Holothyrida



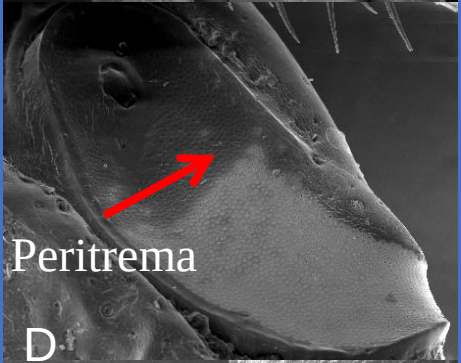
Ixodida



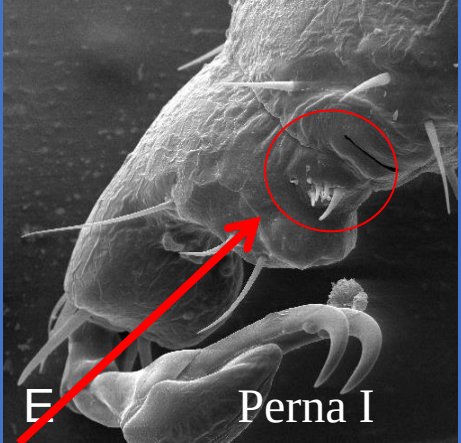
Ventre do gnatossoma



Hipostoma



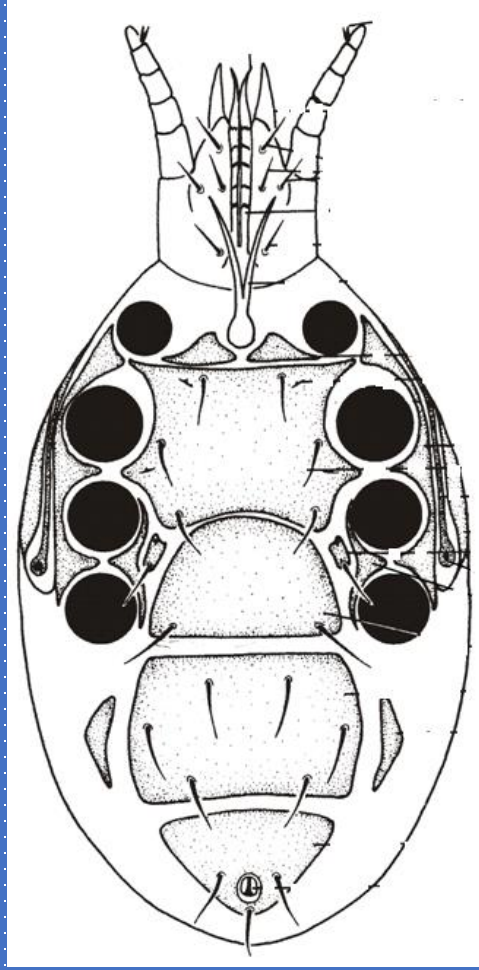
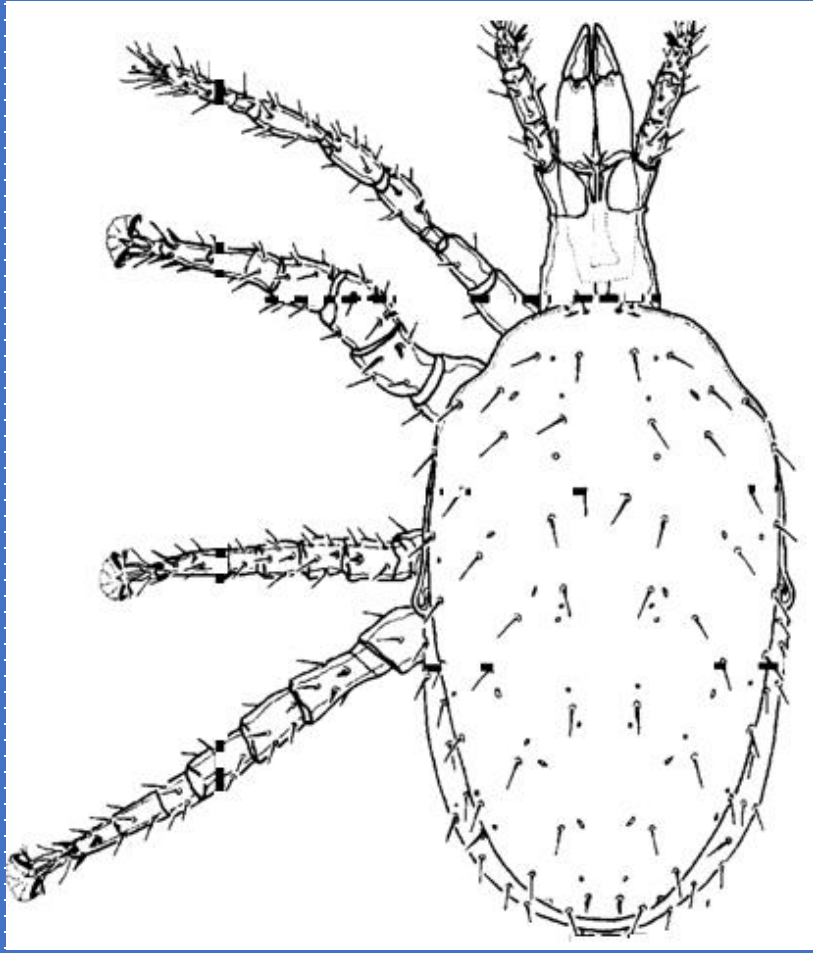
Peritrema



Perna I

Órgão de Haller

Mesostigmata



Trombidiformes



Tetranychidae

A



Tenuipalpidae

B



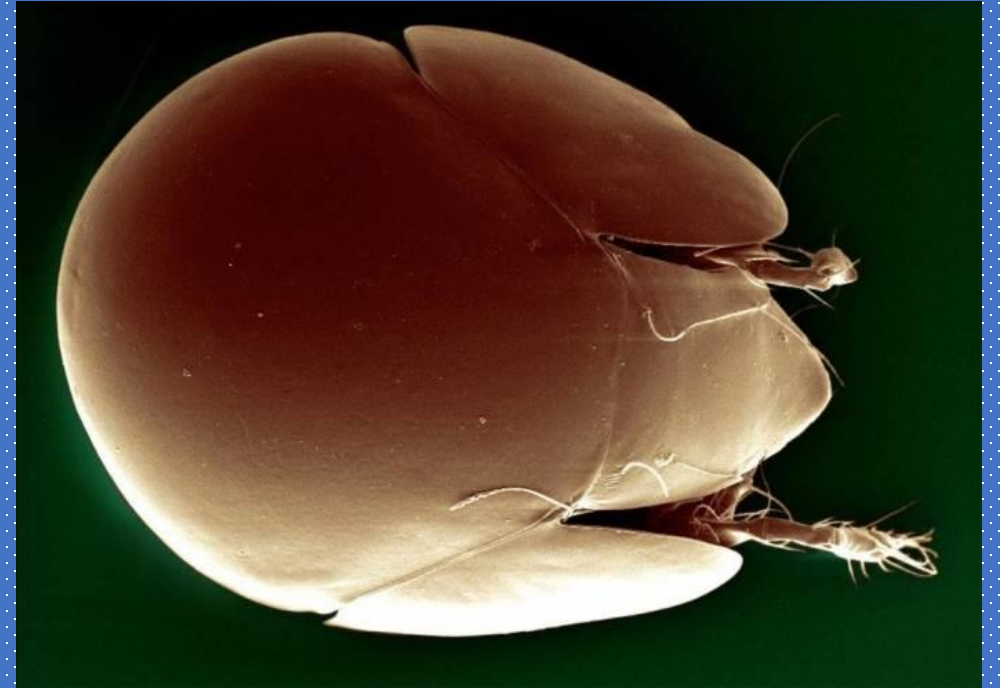
C

Tarsonemidae

Sarcoptiformes



A



B

A: Astigmatina
B: Outros Oribatida

Animais Pecilotérmicos (= Heterotérmicos)

X

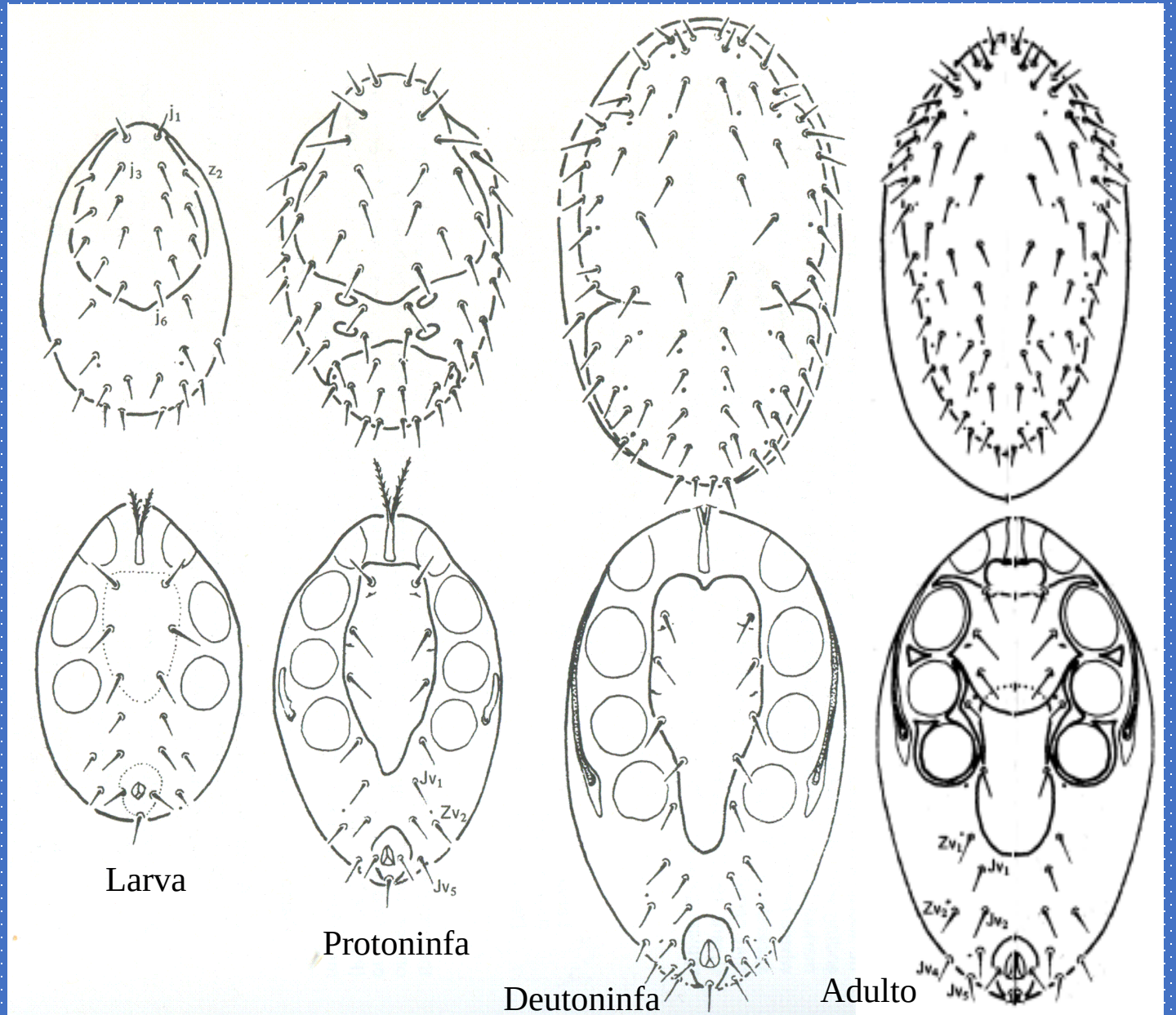
Animais Homeotérmicos

Fases de Desenvolvimento

GERAL

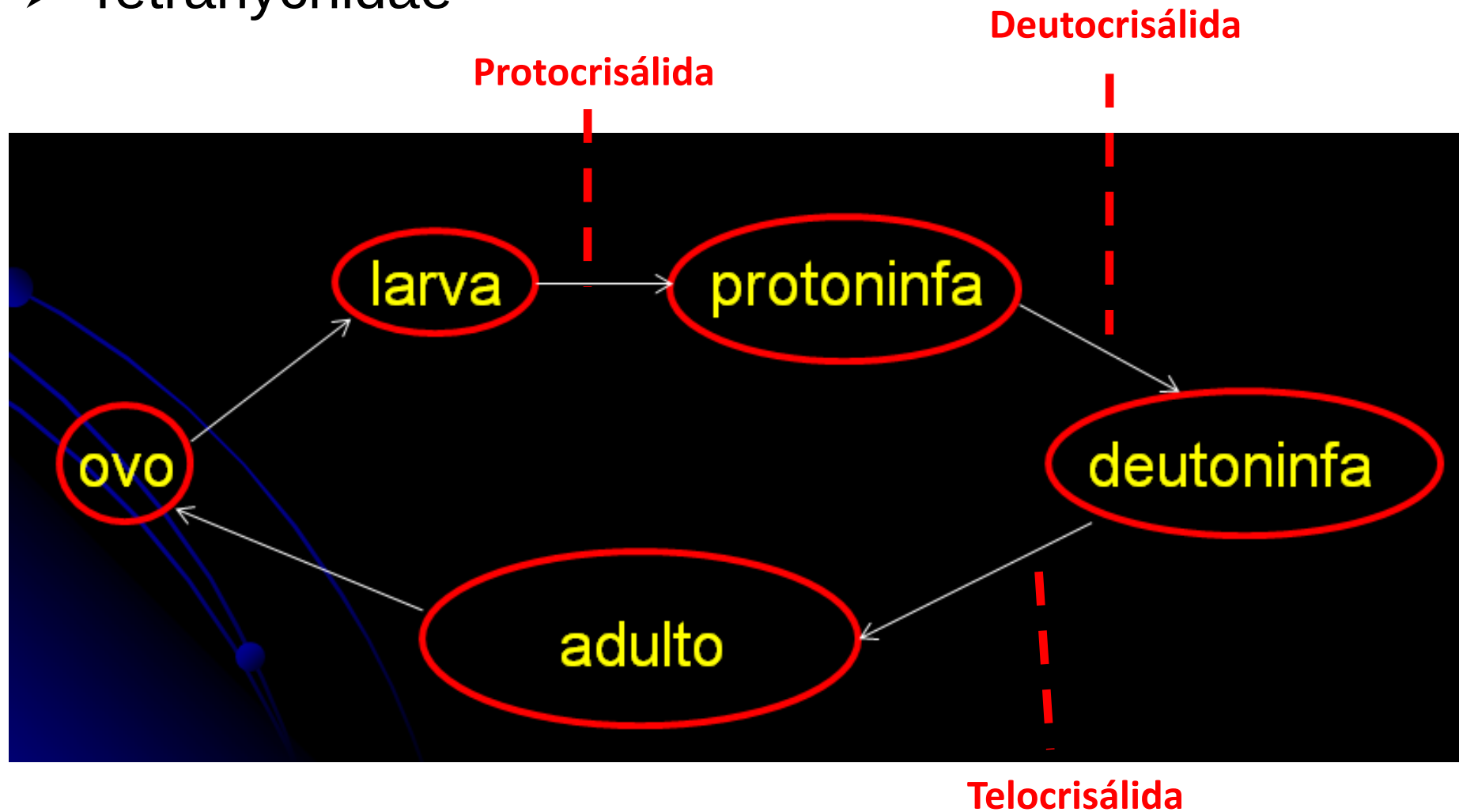
- Ovo
- Larva
- Protoninfa
- Deutoninfa
- Adulto (macho e fêmea)

Desenvolvimento ontogenético
(Laelapidae - Mesostigmata)

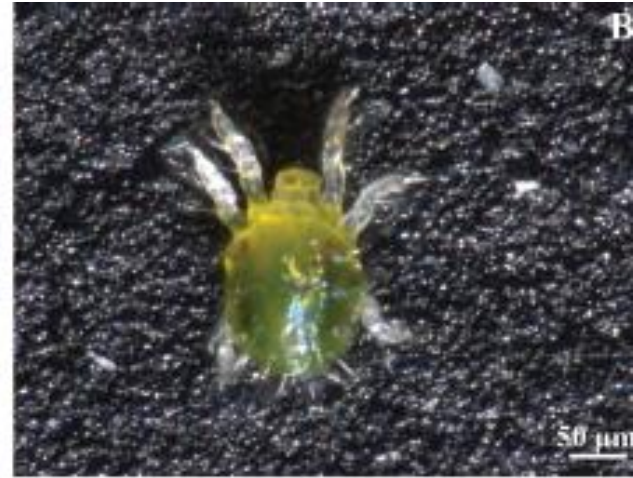
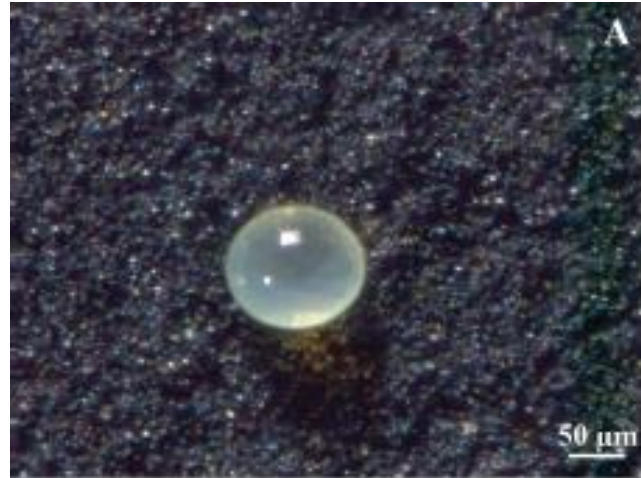


➤ Fases de desenvolvimento

➤ Tetranychidae



Tetranychus turkestani



➤ Dimorfismo sexual - Tetranychidae



Fases de Desenvolvimento

ASTIGMATINA

- Ovo
- Larva
- Protoninfa
- Deutoninfa
- Tritoninfa
- Adulto (macho e fêmea)

ERIOPHYIDAE

- Ovo
- Ninfa I
- Ninfa II
- Adulto (macho e fêmea)

TARSONEMIDAE

- Ovo
- Larva
- Pupa
- Adulto (macho e fêmea)

Ciclo de Vida

- Duração
 - Ovo-adulto – 7 a 10 dias
 - Adulto – 30 dias
- Capacidade reprodutiva
 - Poucas dezenas a cerca de 200 ovos/fêmea

Tipos de Reprodução

- Sexuada
- Partenogenética
 - Arrenotoquia
 - Telitoquia
 - Deuterótoquia
- Pseudo-arrenotoquia

Forma de reprodução - Tetranychidae

- Haplodiplóides
- Reprodução sexuada
 - fêmea
- Partenogênese arrenótoca
 - macho
- Transferência de esperma
 - Edeago
- Padrão de oviposição e razão sexual
 - Ao longo das nervuras, teias, ou tricomas
 - 3 fêmeas/1 macho



➤ Macho aguardando fêmea (telocrisálida)



➤ Dois machos aguardando fêmea (telocrisálida)

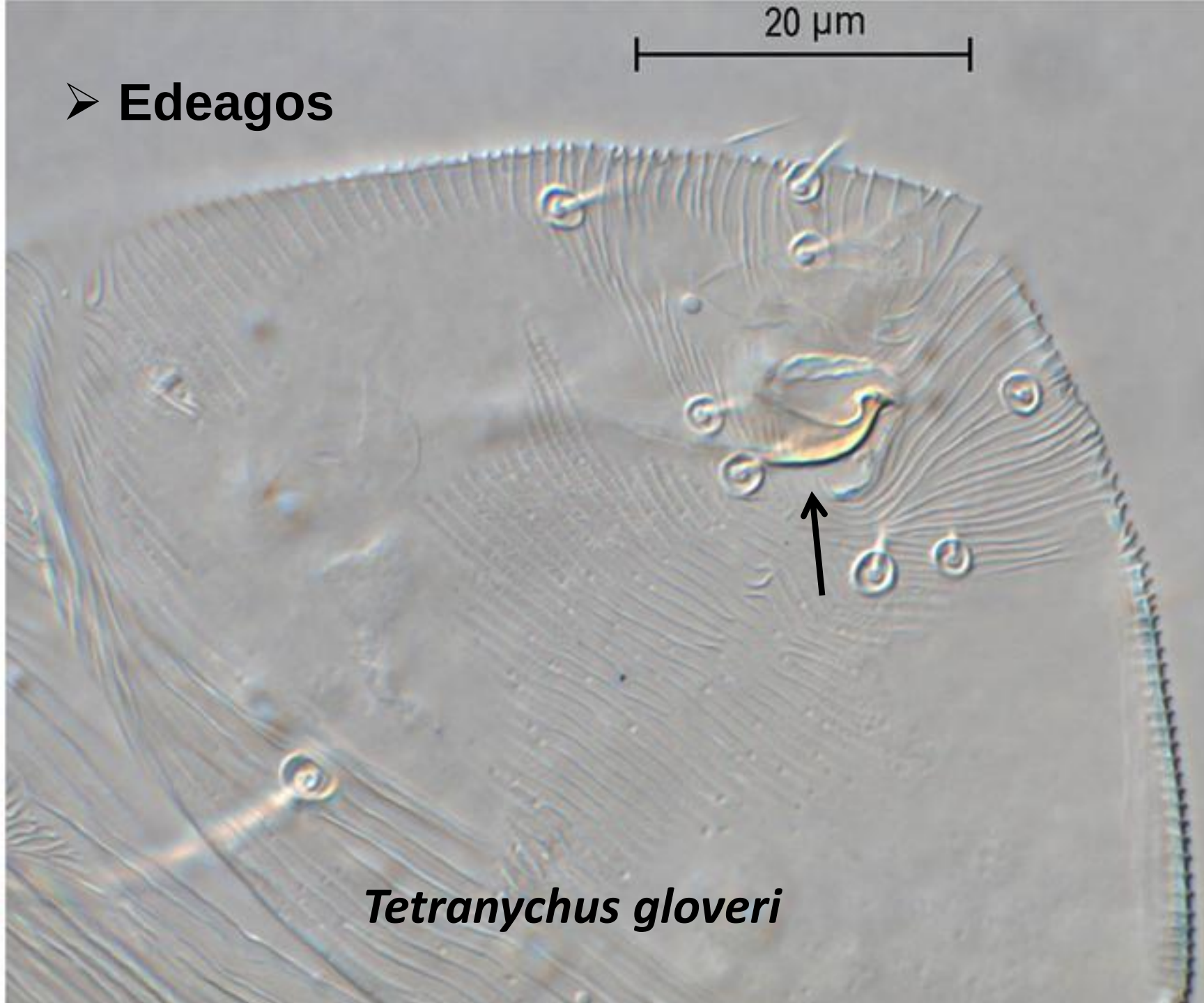


TIPOS DE TRANSFERÊNCIA DE ESPERMA

- Direta (edéago, quelíceras)
- Indireta
 - Tocospermia
 - Porospermia (podospermia)

20 μm

➤ Edeagos



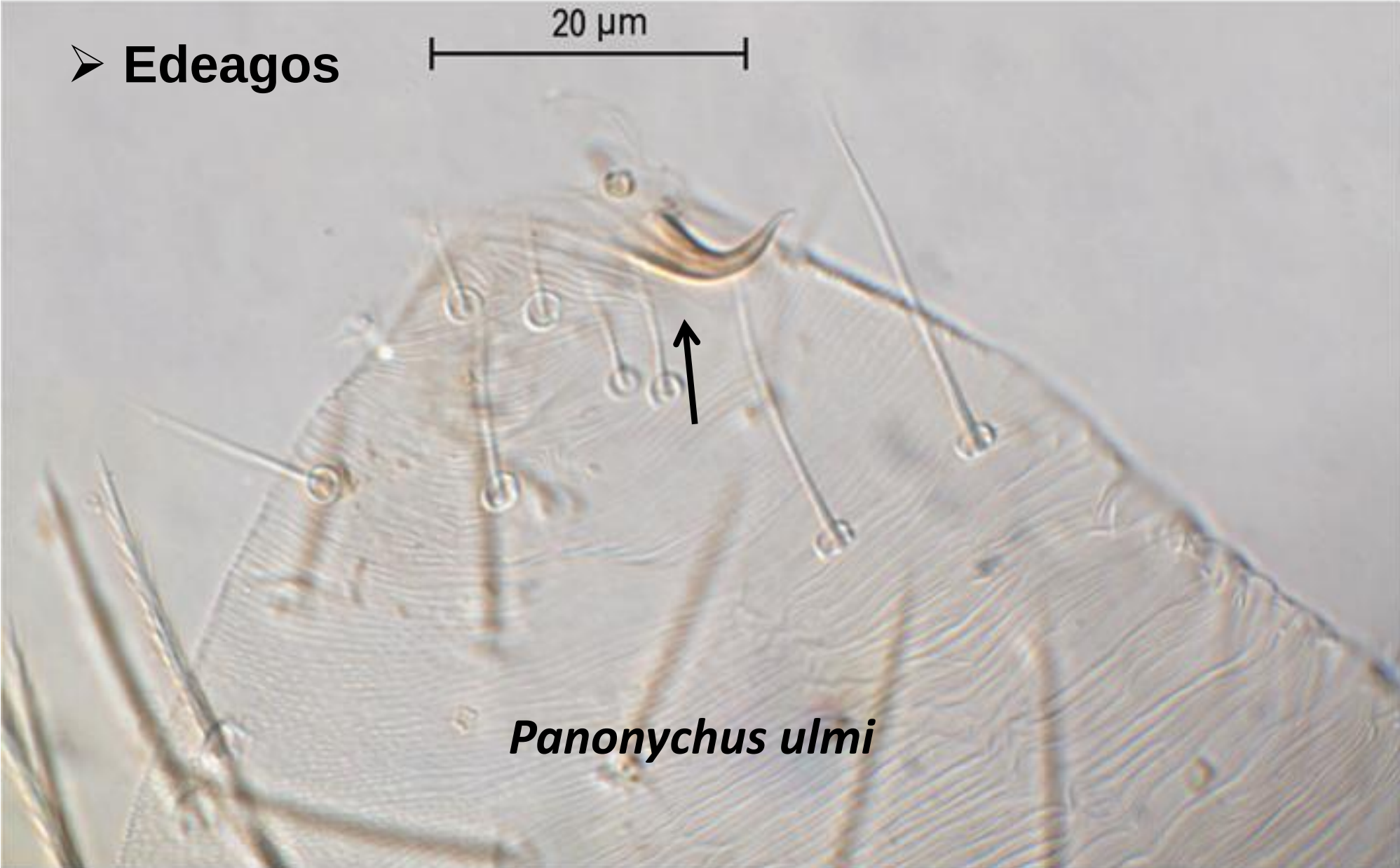
Tetranychus gloveri

➤ **Edeagos**

20 μm



Panonychus ulmi



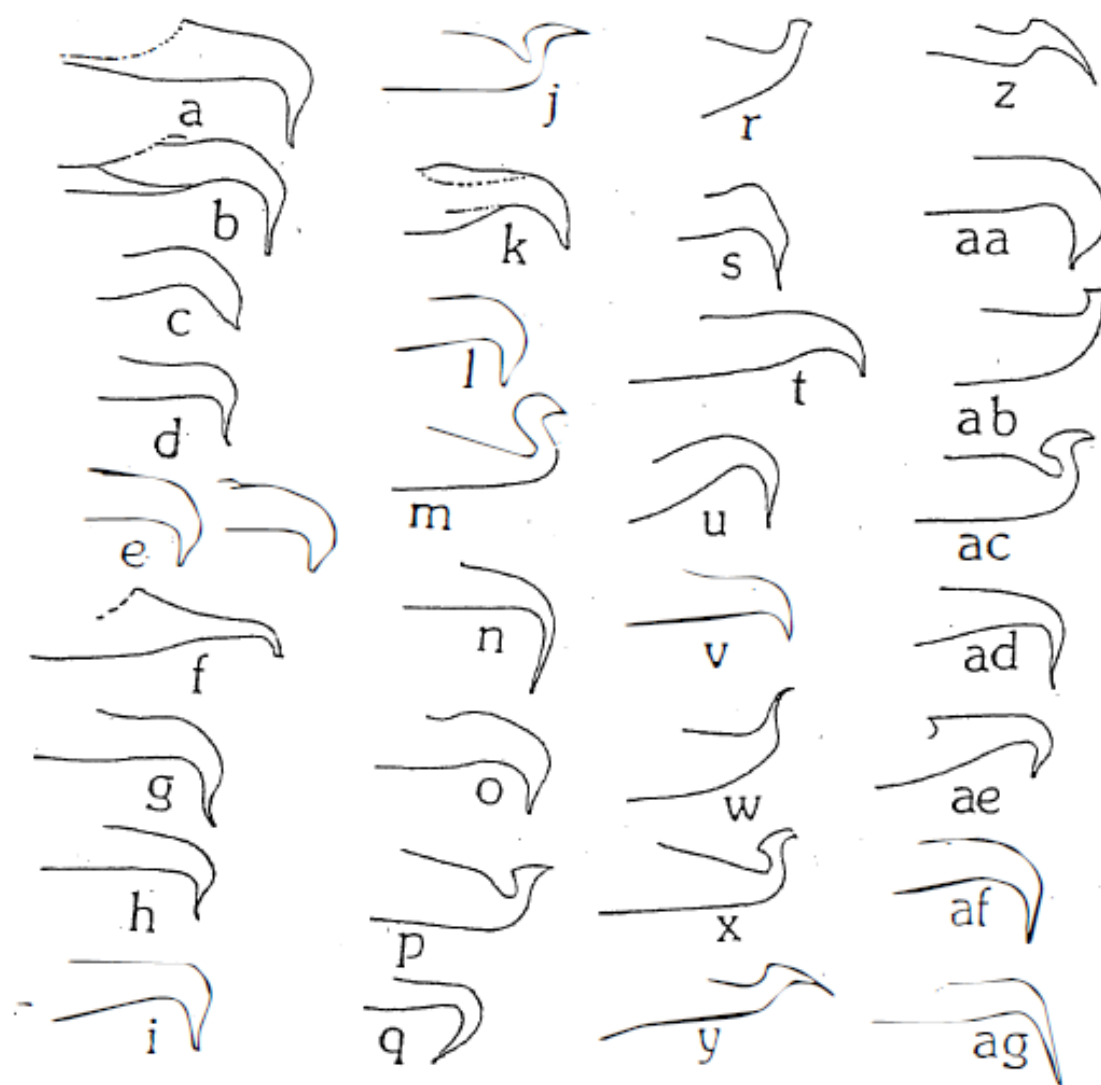
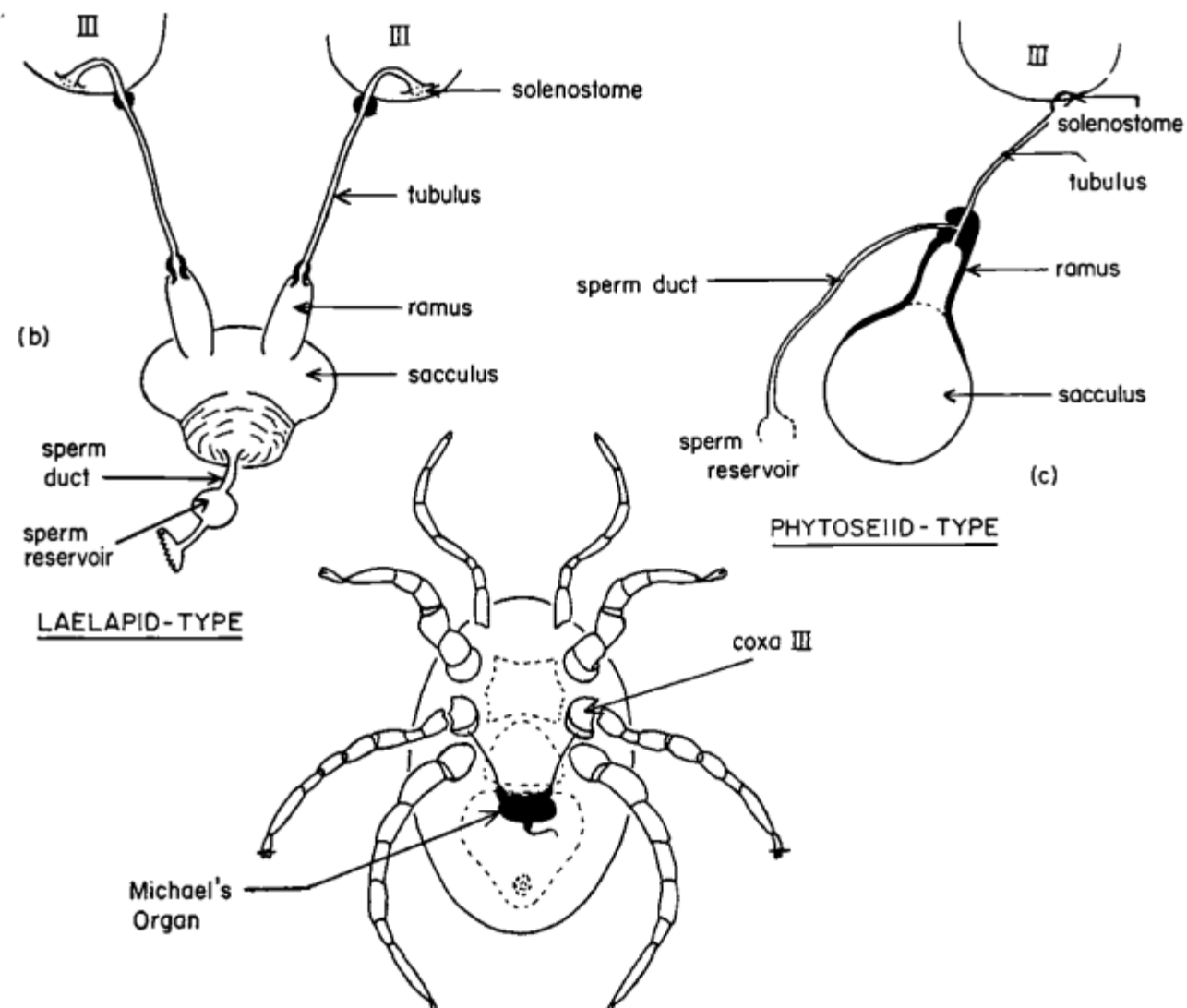
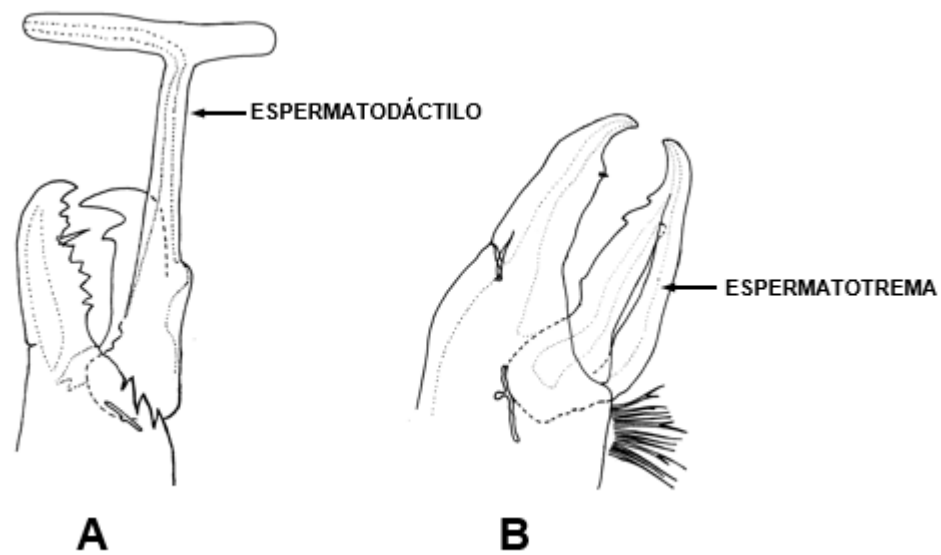
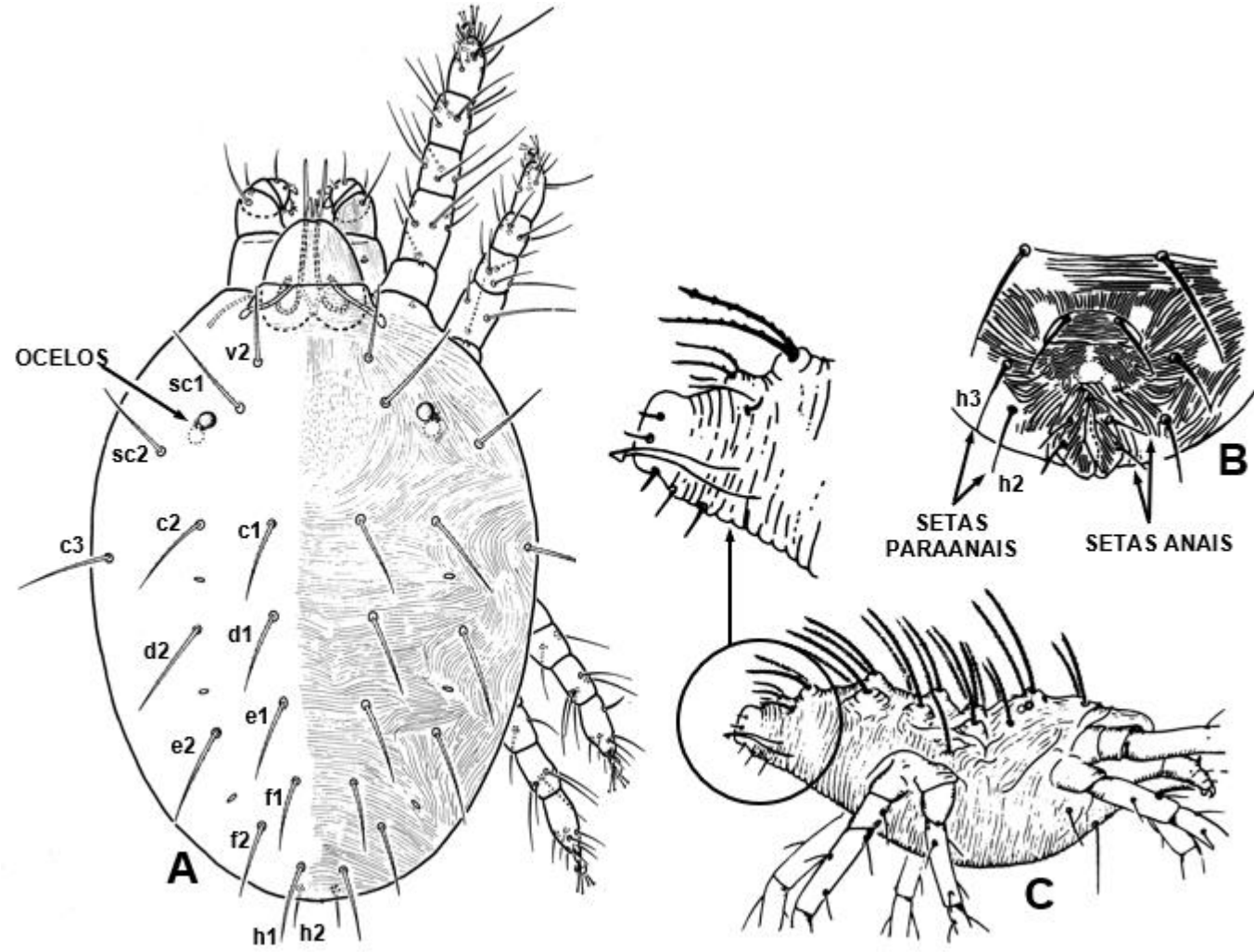


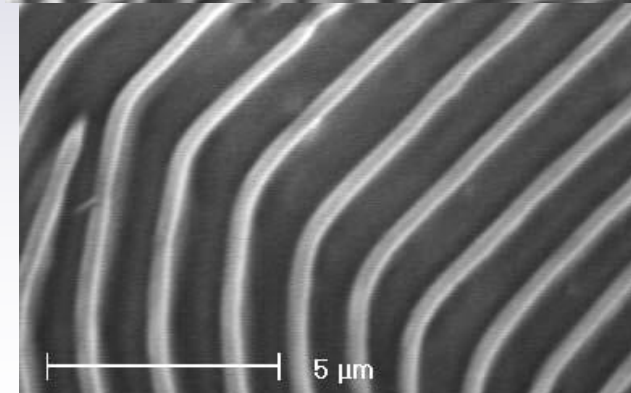
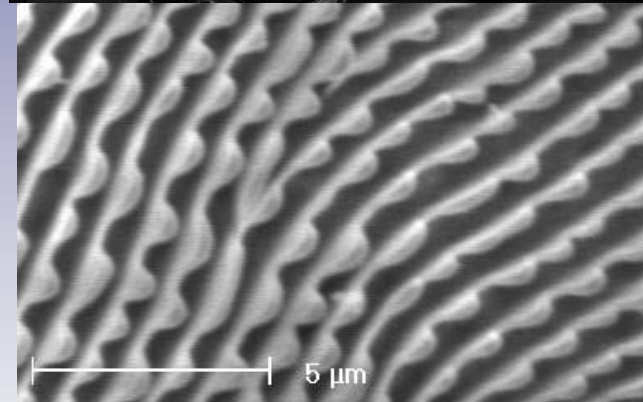
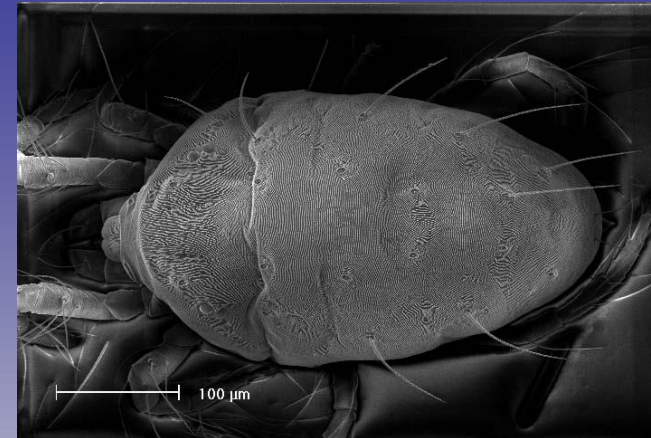
Fig. 164. *Oligonychus* aedeagi: a, *aceris*; b, *alpinus*; c, *bicolor*; d, *boudreauxi*; e, *coffae*; f, *coniferarum*; g, *cunliffei*; h, *endytus*; i, *gambelii*; j, *gramineus*; k, *hondoensis*; l, *ilicis*; m, *keiferi*; n, *laricis*; o, *letchworthi*; p, *macrostachyus*; q, *mülleri*; r, *modestus*; s, *newcomeri*; t, *perseae*; u, *pityinus*; v, *platani*; w, *plicarum*; x, *pratensis*; y, *pritchardi*; z, *propetes*; aa, *punicae*; ab, *saccaroides*; ac, *stickneyi*; ad, *subnudus*; ae, *ununguis*; af, *viridis*; ag, *yothersi*.





Diapausa

- Adultos: *Tetranychus*, *Eotetranychus*
- Ovos: *Panonychus*, *Oligonychus*
- Qualquer estágio: *Bryobia praetiosa*



Brasil

Perdas severas!!!!



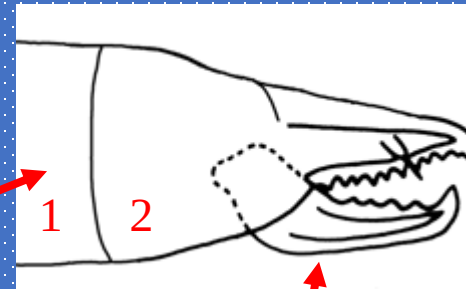
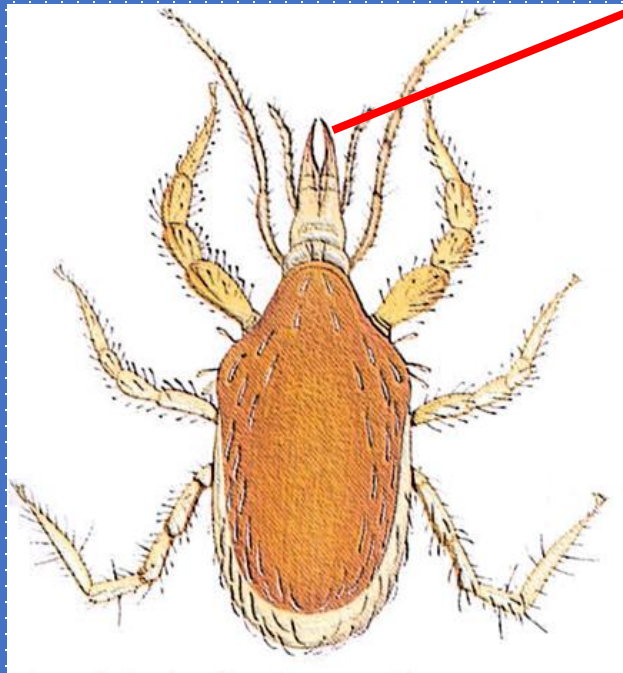
Hábitos alimentares

- Predadores
- Fungívoros
- Polenívoros
- Saprófagos
- Fitófagos
- Parasitos (hematófagos, etc)

Tetranychus urticae

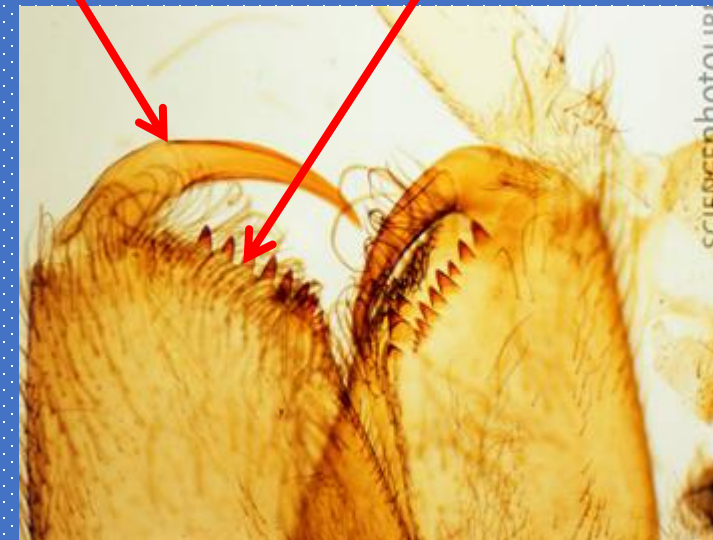


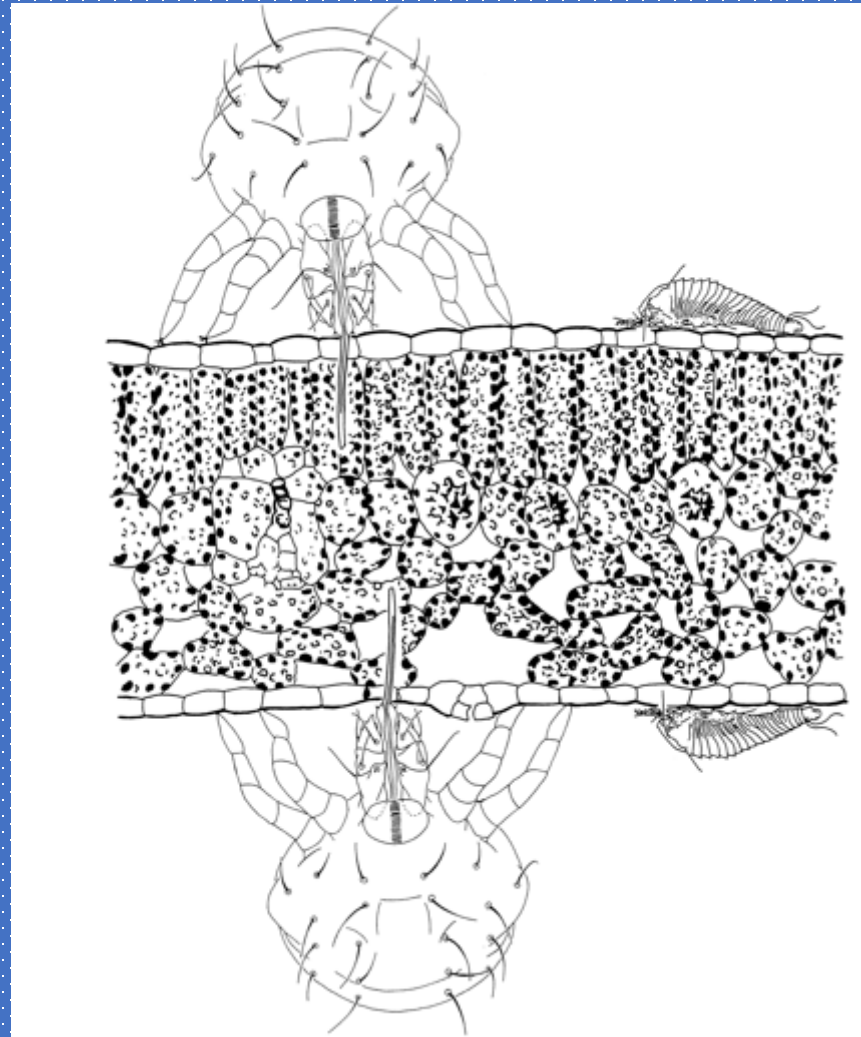
Cheliceriformes $\approx$ Chelicerata

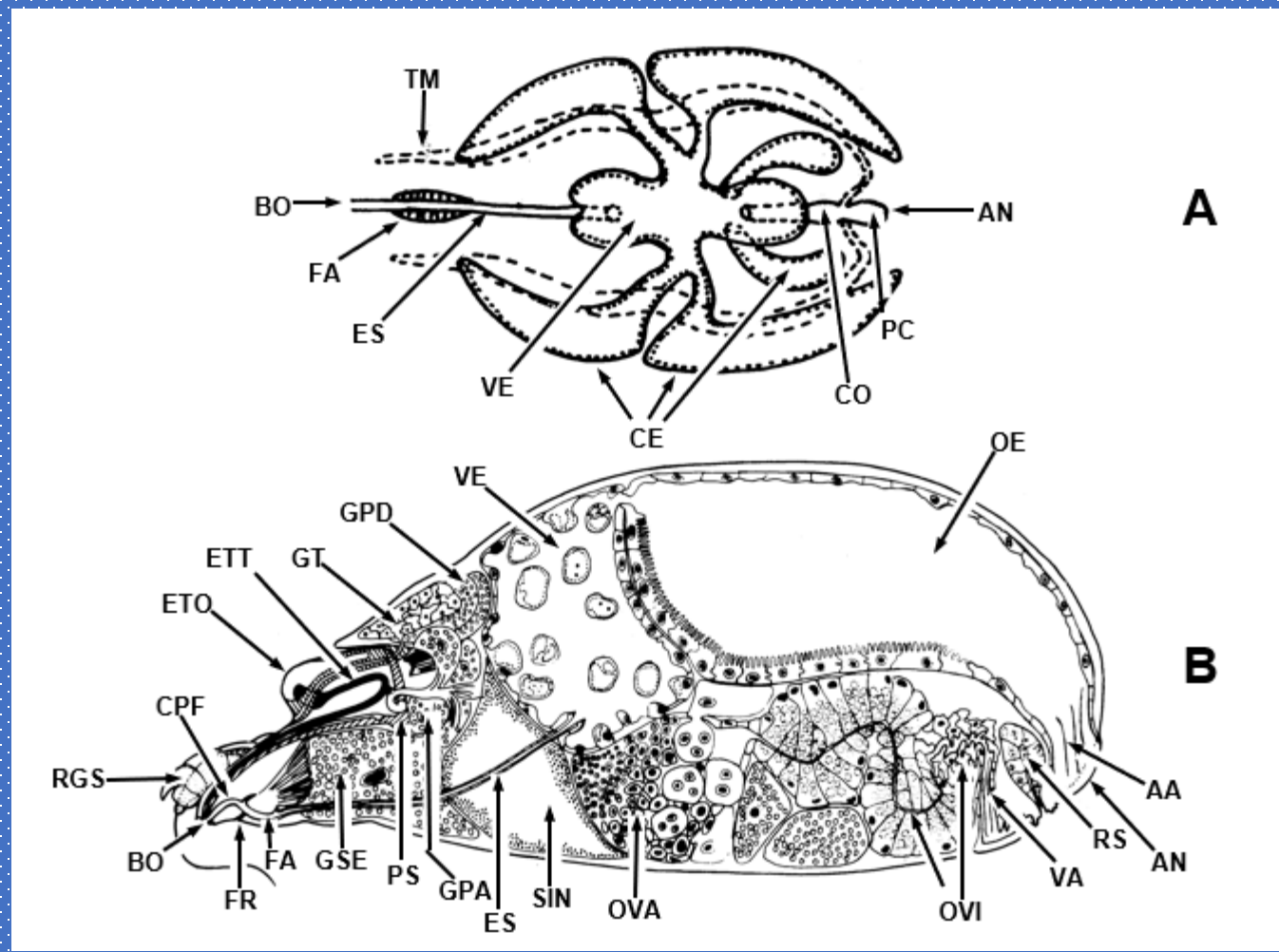


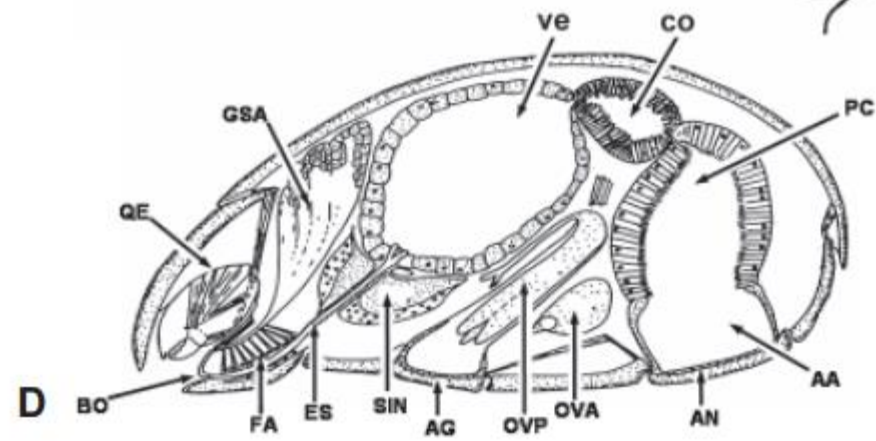
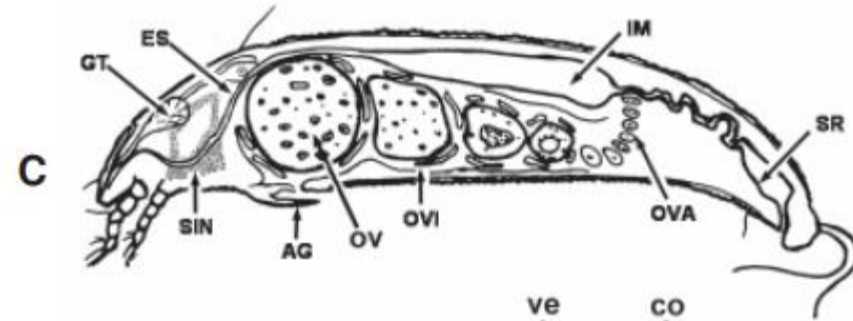
Dígito móvel

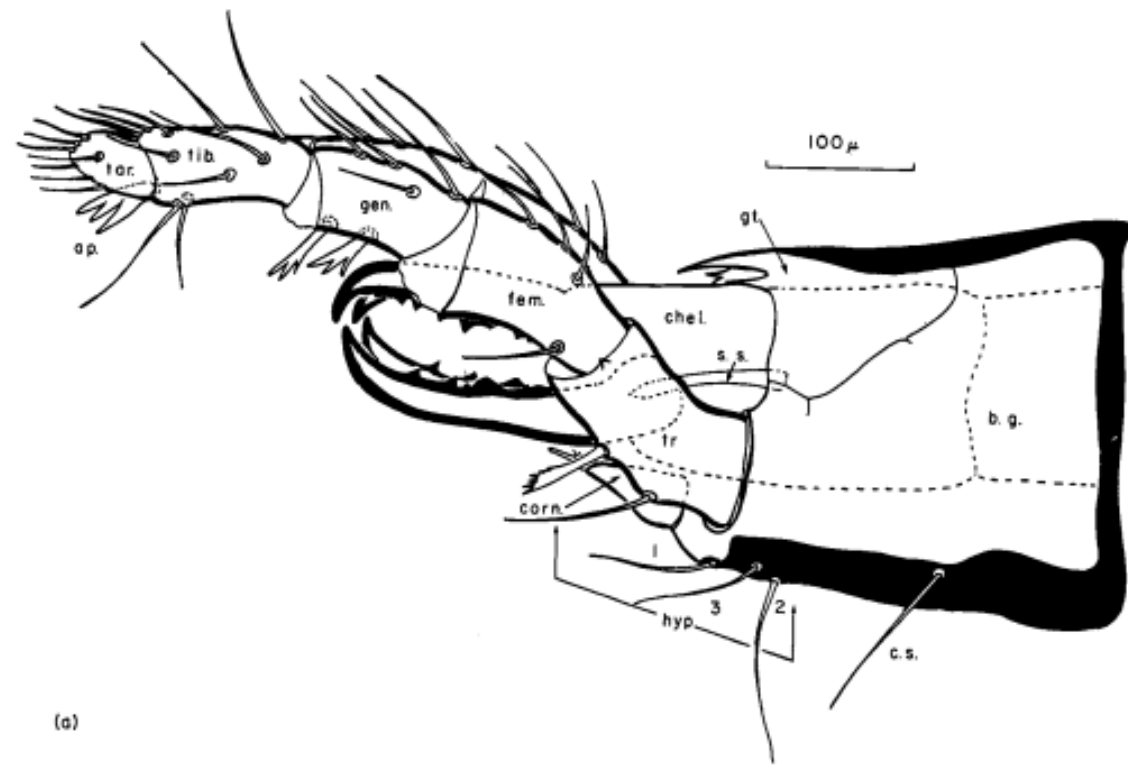
Dígito fixo



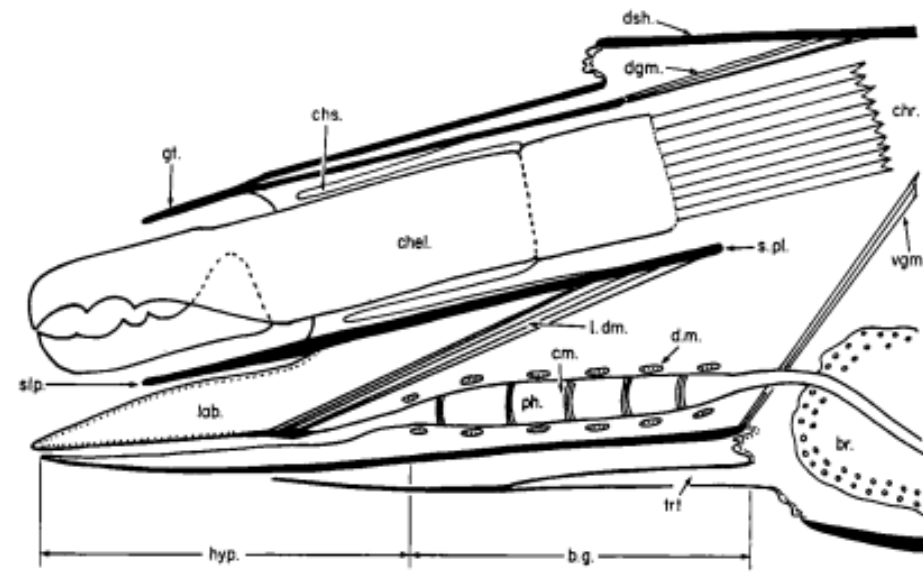








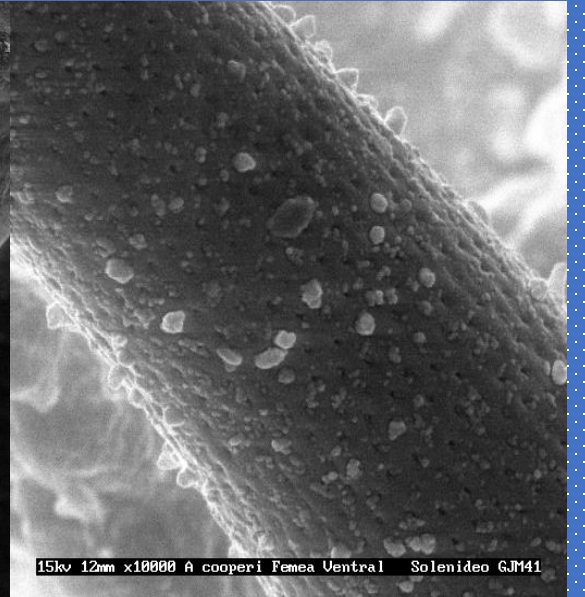
(a)



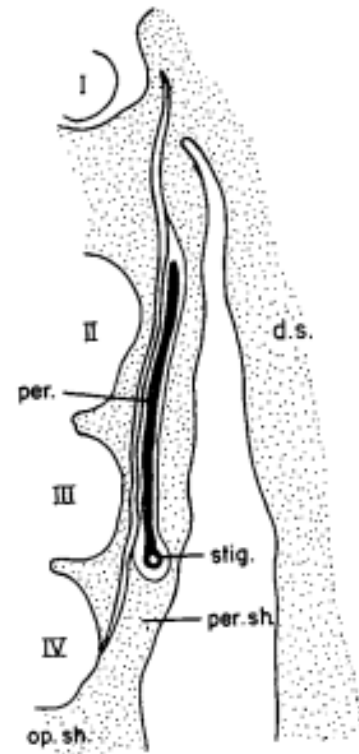
(b)

Sistema Nervoso + Órgãos do Sentido

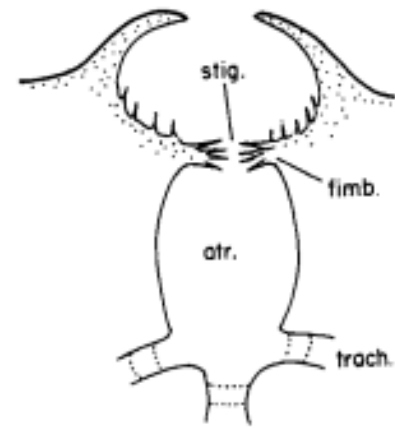
- Ocelos
- Setas: táteis, eupatídeos, solenídios, tricobótrias
- Lirifissuras



Sistema Respiratório



(a)

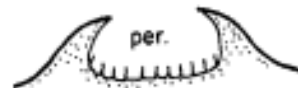


(b)

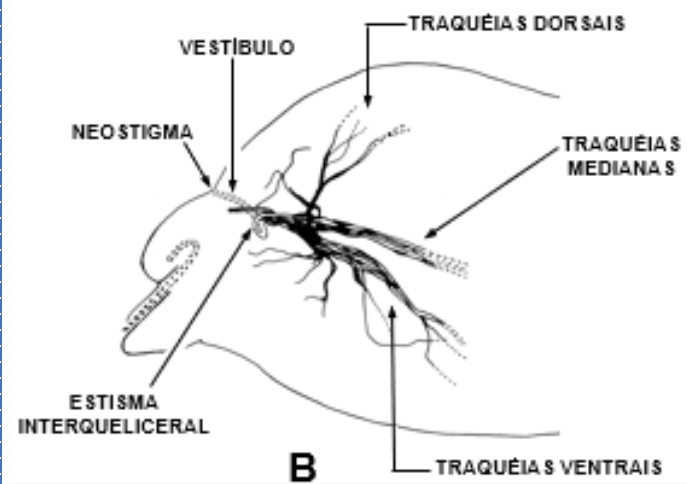
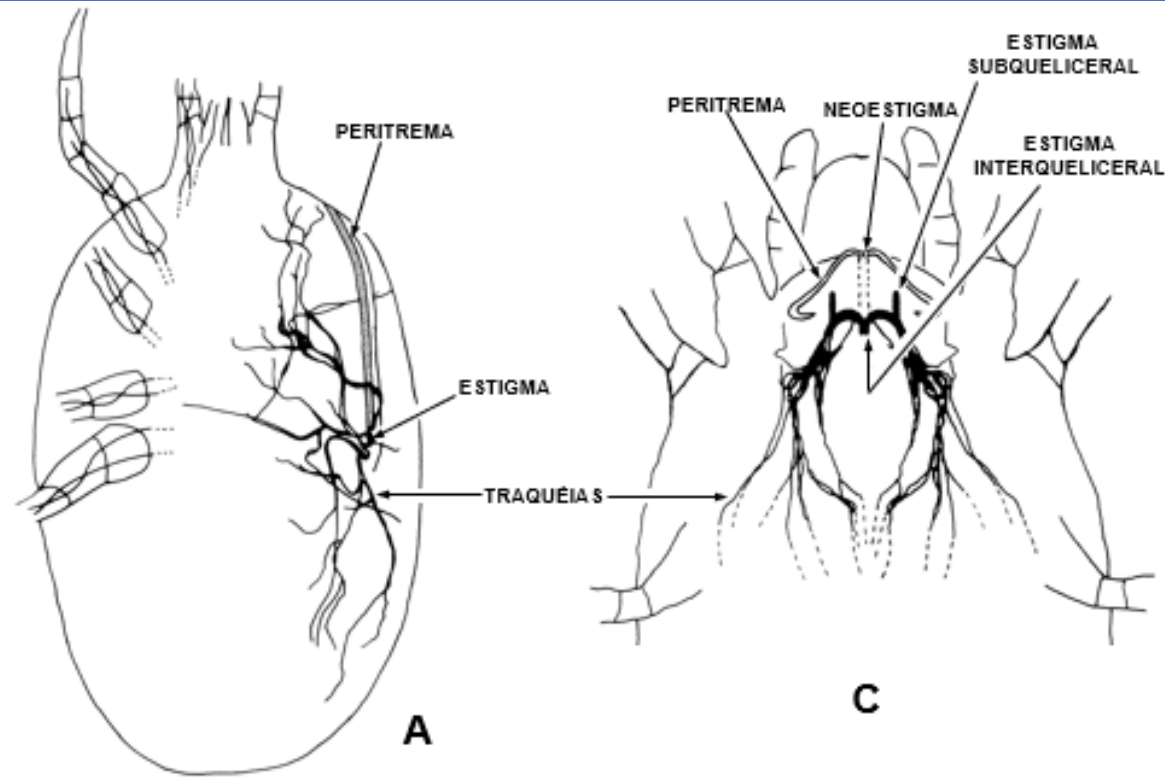
Peritrema e Traqueia

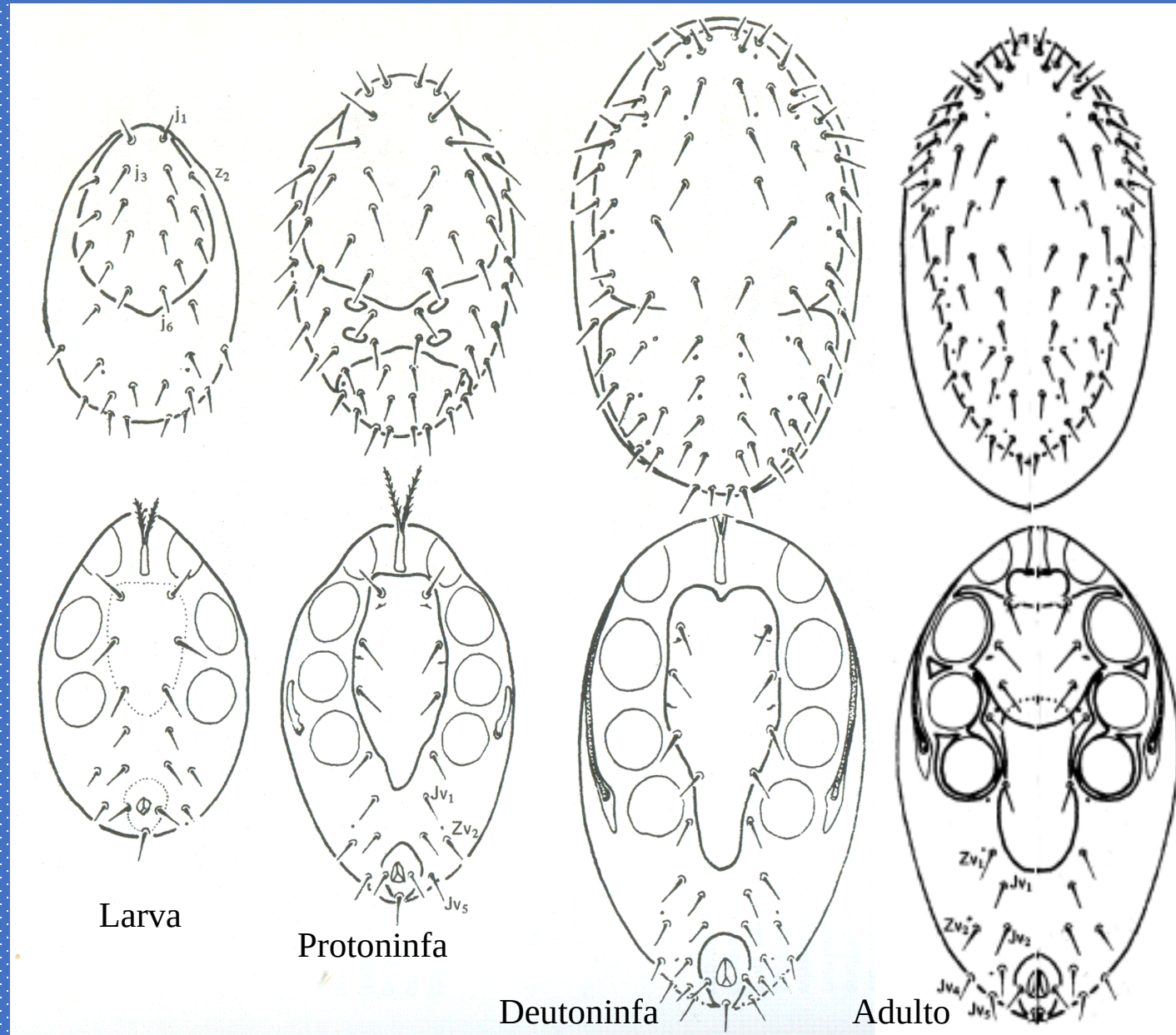


(c)

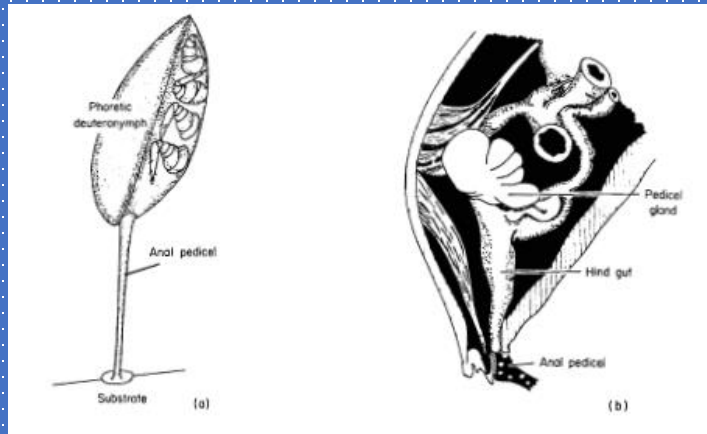


(d)





Dispersão



BALONISMO







Controle Natural das Populações de Ácaros