

# Ticks, Mites & Cyclops

# CLASS ARACHNIDA

## Ticks, Mites

### **General characters:**

Differ from insects in the **absence of wings, antennae**, and compound eyes.

There are **4 pairs of legs** in the adult.

Head and thorax may be fused together to form **cephalothorax** and abdomen, or all body segments are fused in one body sac (ticks and mites).

Development is by eggs (laid in batches or singly), then larva, and then several nymphal stages to adult.

# Parasitic Ticks

# Ticks

*Class Arachnida*



**Soft Ticks**

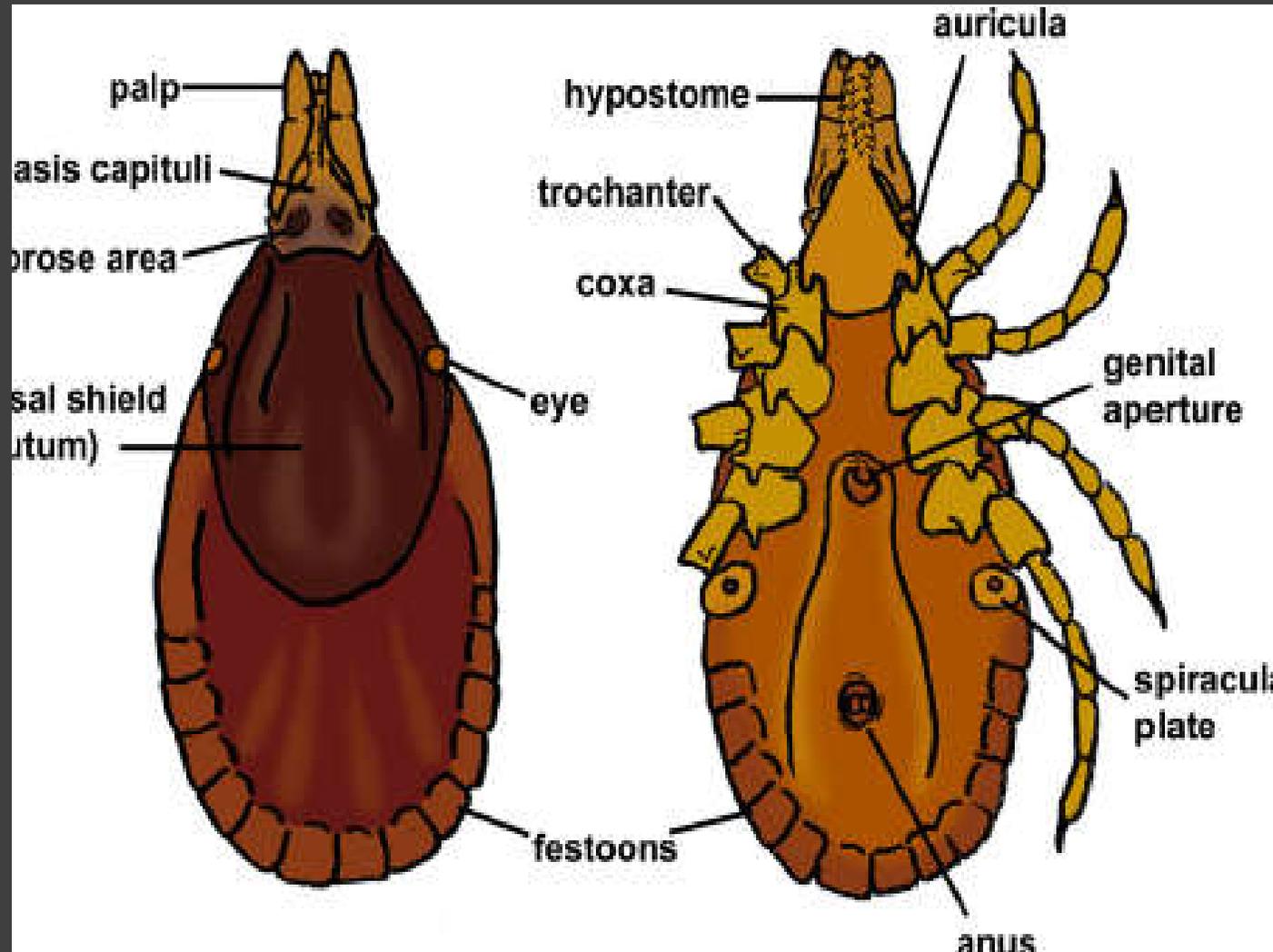
*Argasidae*



**Hard Ticks**

*Ixodidae*

# Hard tick



- 4 pairs of legs.
- Capitulum (false head).
- Festoons posteriorly.
- Dorsal surface:-

if covered all with scutum (no V-shape)..... male

if anterior part only covered with scutum (V-shaped)..... female



Female hard  
tick



Female hard tick



Male hard tick

# Female hard tick



Male hard tick



# Soft tick

- No protruding capitulum.
- No festoons posteriorly.
- No sex differentiation

## Ticks

*Class Arachnida*



**Soft Ticks**

*Argasidae*



**Hard Ticks**

*Ixodidae*



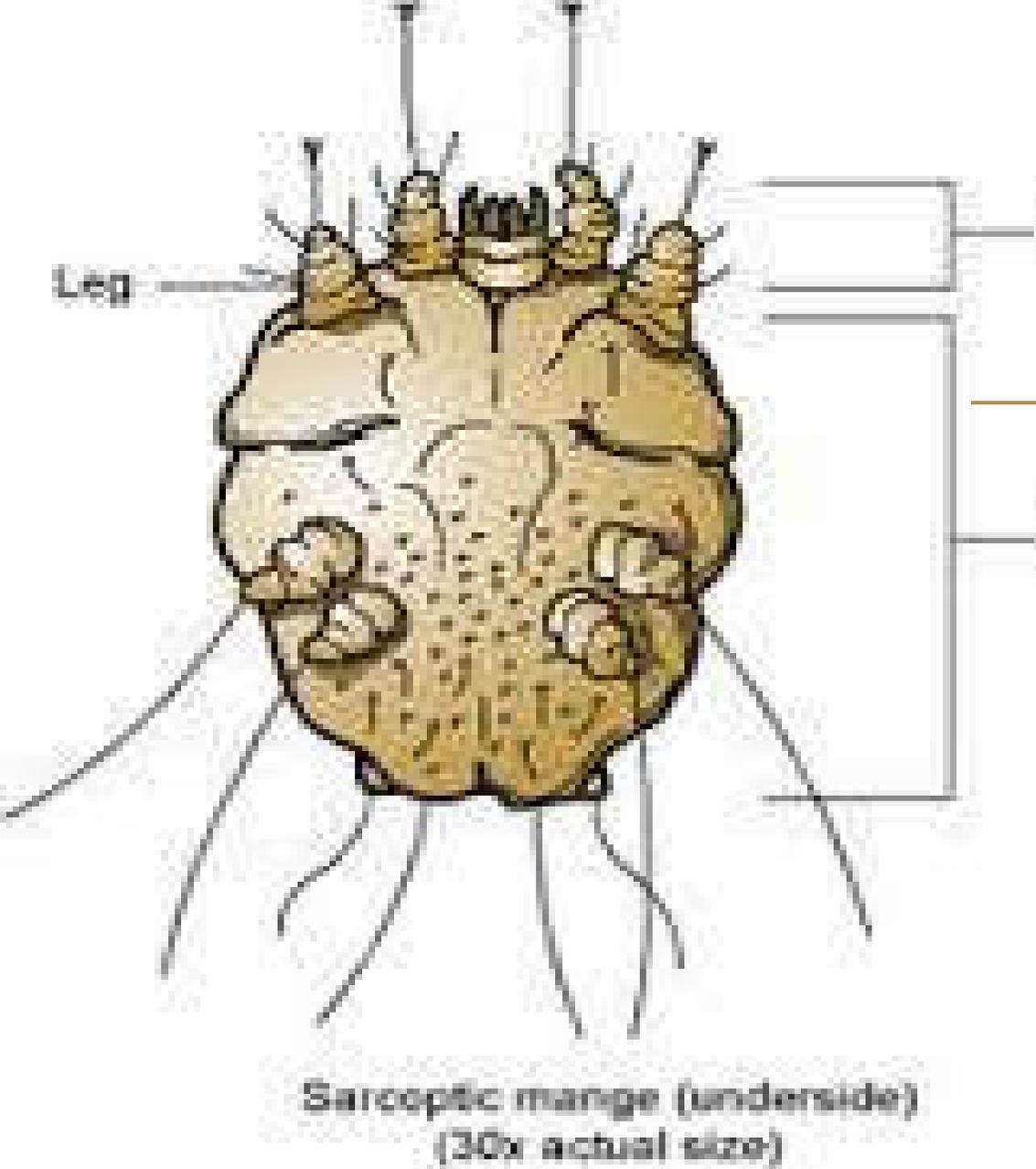
Soft tick

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# Medical importance of ticks

Hard ticks	Soft ticks
<p>1- Mechanical injury by the bite.</p> <p>2- Tick paralysis.</p> <p>3-Transmit:-</p> <p><b>viruses</b>:- encephalitis, Colorado tick fever.</p> <p><b>bacteria</b>:- tularemia</p> <p><b>spirochates</b>:- lyme disease (borrelia).</p> <p><b>Rickettsia</b>:- Q fever, rocky mountain fever.</p> <p><b>Protozoa</b>: Babesia</p>	<p>Q fever</p> <p>Endemic relapsing fever</p>

Mites



## *Sarcoptes scabiei* (itch mite)

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- **4<sup>th</sup> leg:**

- if end with sucker.....male

- if end with bristle...female

**Incomplete metamorphosis.**

**Medical importance:-** scabies.

**Breeding places:-** interdigital, flexors (wrist, elbow), groin, axilla

# Morphology

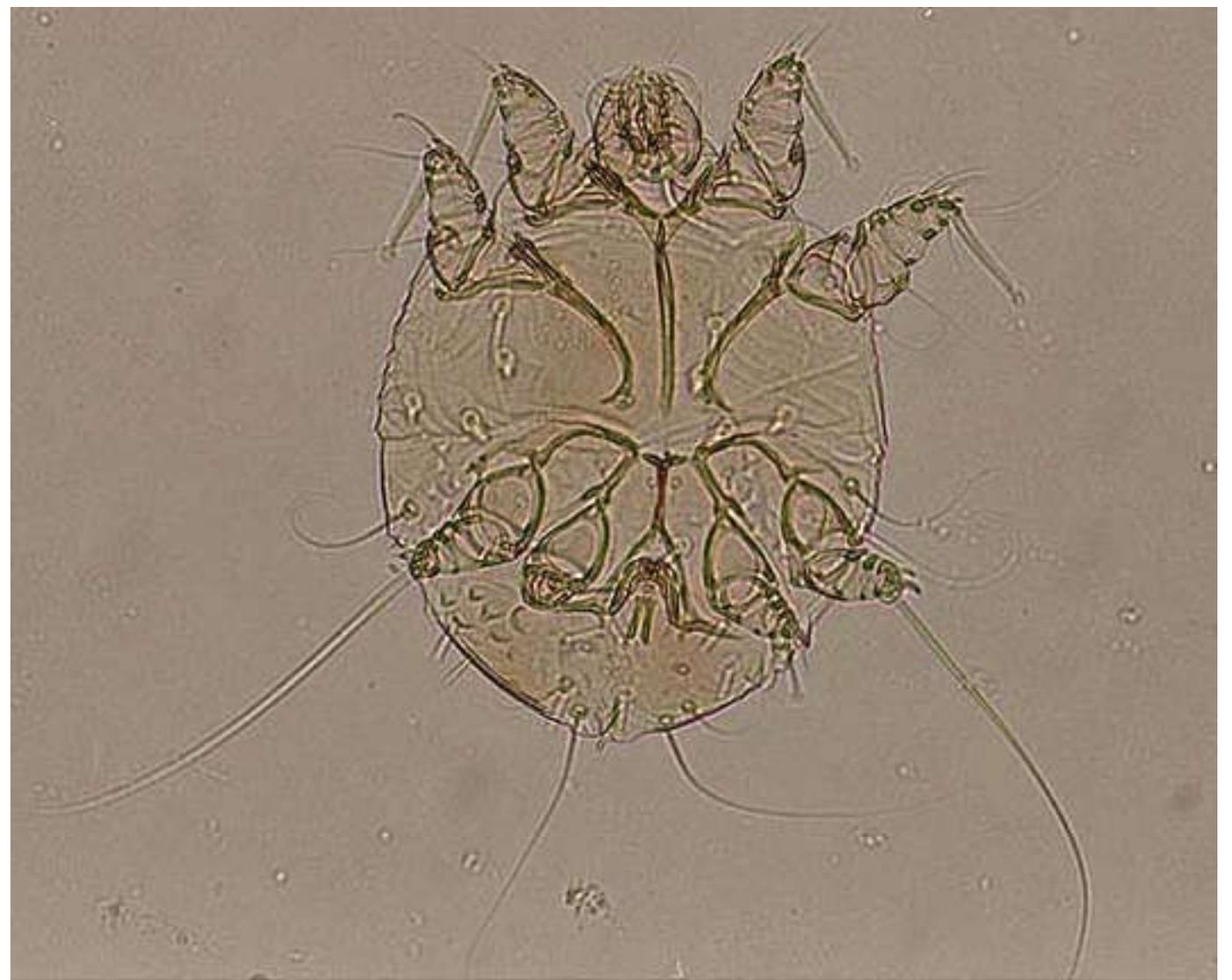
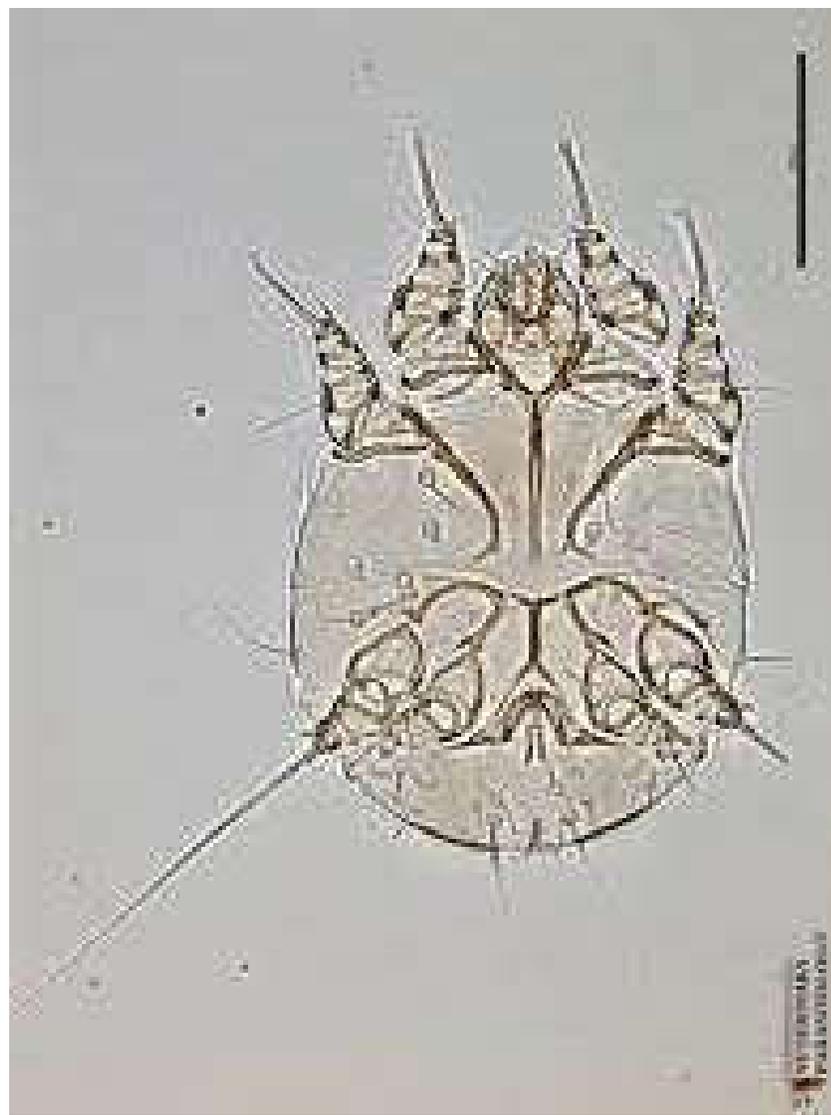
Small, oval, dorsally convex and ventrally flattened.

Male measures 200-300  $\mu$ , and female measures 350-450  $\mu$ .

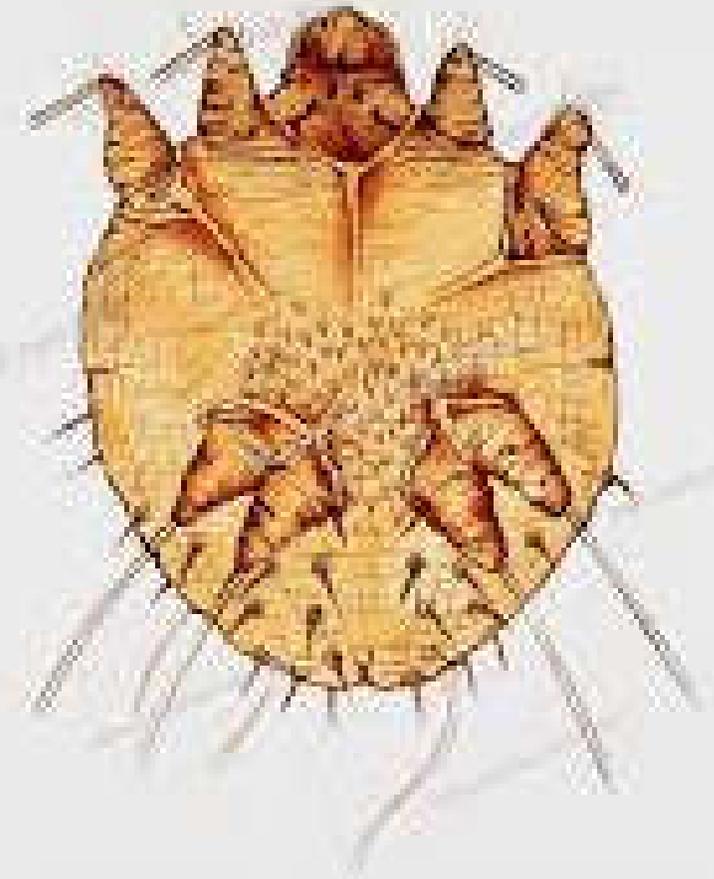
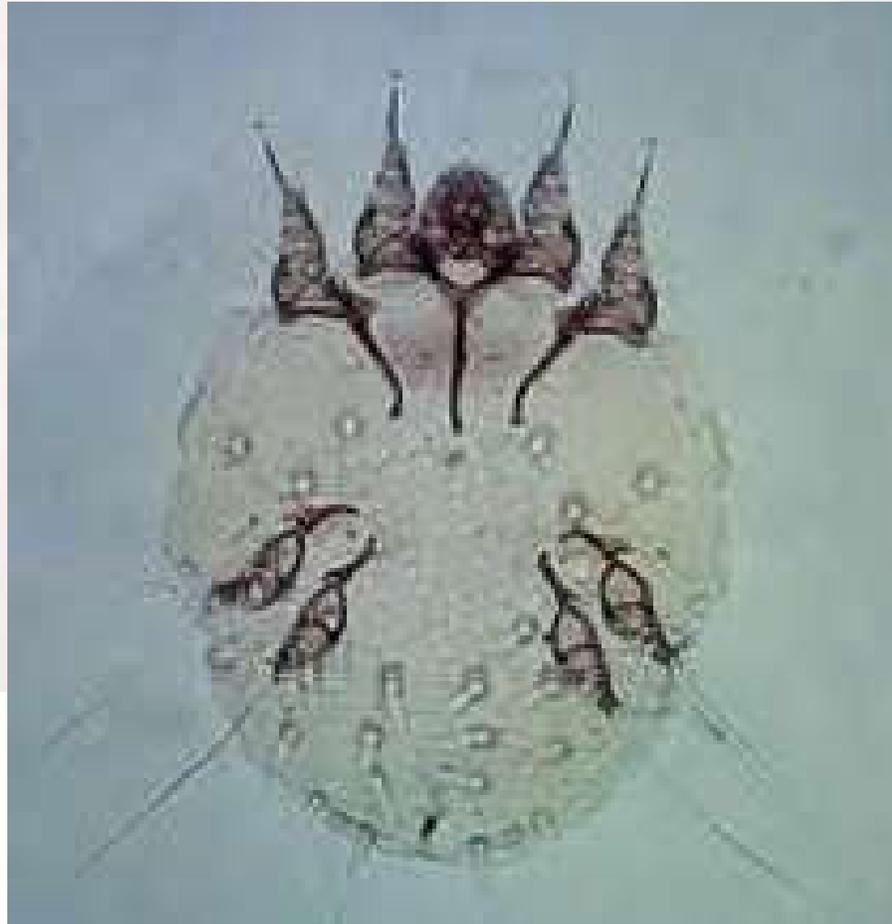
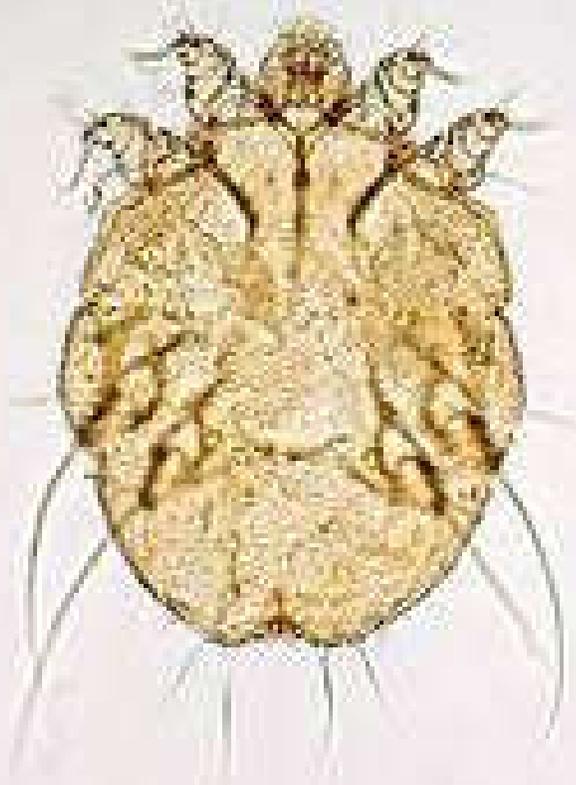
The tegument has dorsal striations arranged in fields interrupted by hairs, spines or setae (rooted long bristles).

**Legs are very short and telescoped.** The first pair of legs is anteriorly situated in the anterior notothorax. The posterior notogaster bears the second pair.

The first pairs of legs end in long tubular process ending with bell-shaped suckers and claws. The second pairs end with bristles in the female, the 4<sup>th</sup>. pair ends in suckers and claws in the male.



Male *Sarcoptes scabiei*



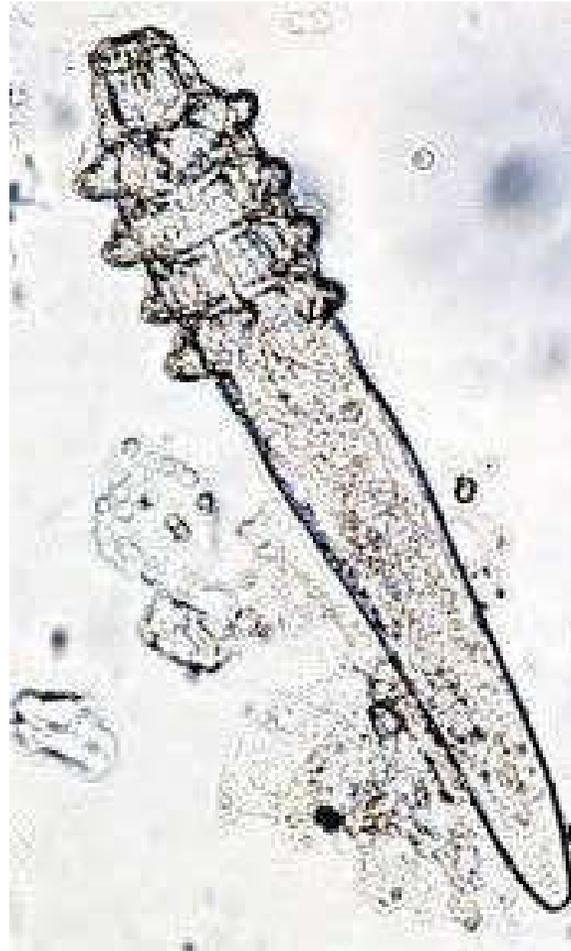
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Female *Sarcoptes scabiei*

# *Demodex folliculorum*

**Breeding places:-** hair follicles, sebaceous glands.

**Medical importance:**  
**Acne, blephritis**



# Morphology

It is a small, **worm-like** parasite, 0.4 mm. long.

The cephalothorax is distinct from the transversely striated elongate abdomen.

The capitulum is protruding and membranous.

The **4 pairs of legs** are **short**, 5-segmented, and end with claws.

Class *crustacea*

***Cyclops***

# Female Cyclops

## Breeding places:-

Fresh water

## Medical importance:- 3D

*Diphyllobothrium latum*

*Diphyllobothrium mansonii*

*Dracunculus medinensis*

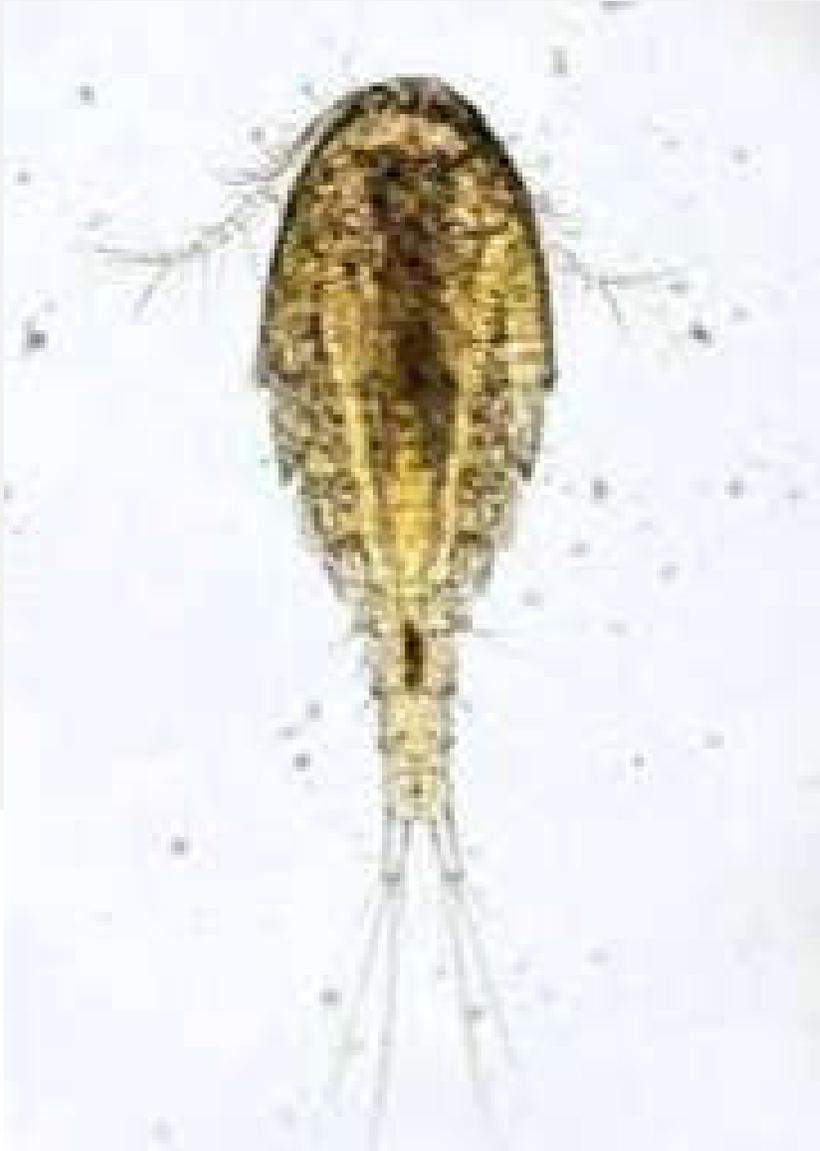


The body is **pear-shape**, broad anteriorly, 1-3 mm in length and divided into cephalothorax covered by the carapace and abdomen.

The **cephalothorax** has **two pairs of antennae**, the first has 17 segments and the second has 4 segments. It is broad, 5 segmented, the first is the biggest and carries anteriorly the mouthparts, and a single median eye dorsal to them.

On the next 4 cephalotoracic segments there are 4 pairs of biramous legs (pereopods).

**Abdomen** is 5-segmented in males and 4-segmented in females, carrying **egg-sacs** on the sides of the first segment. It ends biramously, and each ramus carries a bunch of long bristles.



1--200 μm--1

Male *Cyclops*

Thanks

