

# LIVING WITH MITES

## Getting to know the enemy

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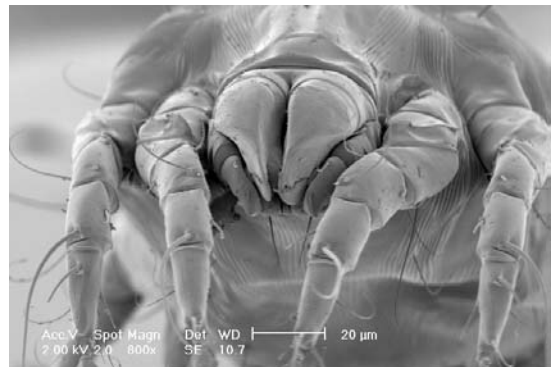
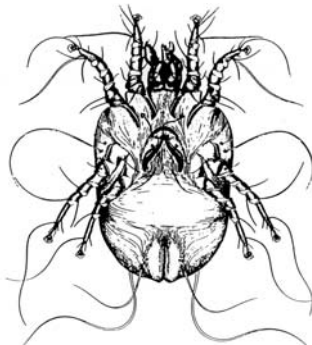
# Class ARACHNIDA



# Subclass ACARI



# Family PYROGLYPHIDAE

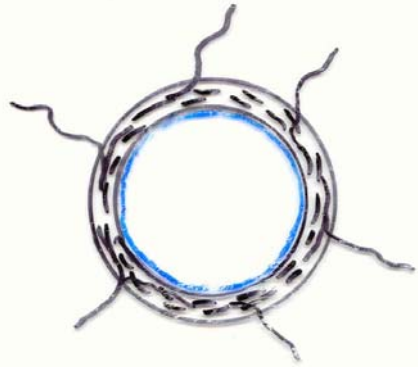


### Important species of House Dust Mite

*Dermatophagoides pteronyssinus*  
- the commonest species in Europe

*Euroglyphus maynei*  
- the second most common species in the UK

*Dermatophagoides farinae*  
- the commonest species in America



### Where in the home do mites live?

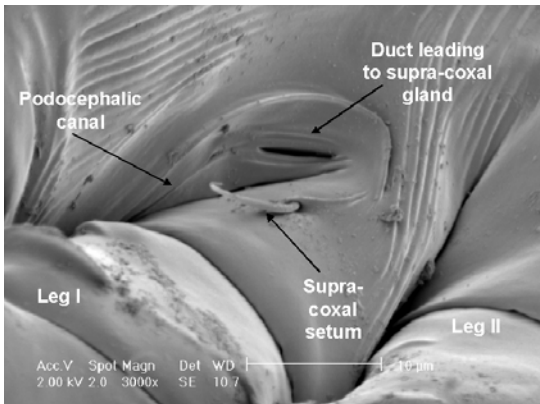
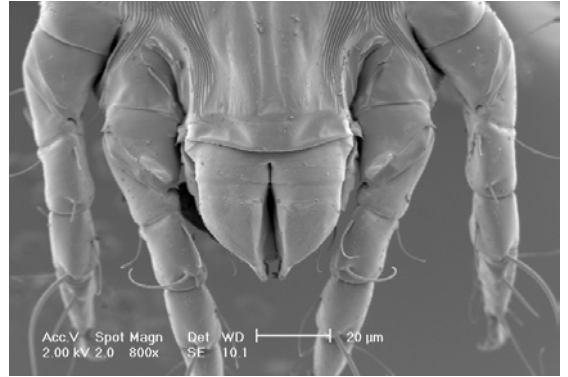
- In beds
- In carpets
- In upholstery and soft furnishings
- On soft toys

### How do mites lose water?

1. By evaporation through the permeable surfaces of the body
2. During bodily functions such as:
  - digestion
  - reproduction
  - excretion
  - feeding
  - oviposition

## How do mites gain water?

1. Ingestion with food
2. From the oxidation of carbohydrates and fats
3. Passive absorption
4. Active absorption



## Effect of RH

High levels of relative humidity are crucial to HDM survival:

- In order for the supracoxal gland to succeed in capturing moisture from the surrounding air (the active pump)
- To enable them to absorb moisture from the air passively through their outer layers
- To moisten their food: this makes it edible, encourages mould growth (which is nutritious) and provides additional moisture

## Effect of Temperature

Extremes of temperature are detrimental for mite growth.

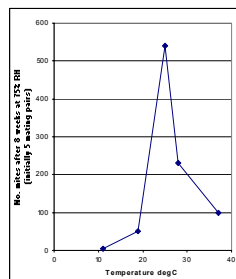
As temperature rises up to about 30°C:

- Egg production increases (with a sharp fall off thereafter)
- Egg to adult development time decreases
- But adult female longevity also decreases

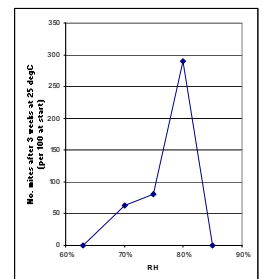
Low temperatures affect eggs and juvenile life stages less than adults

## Effects of temperature & RH

on *D. pteronyssinus* mites



from van Bronswijk 1981



Average of 2 experiments reported by van Bronswijk 1981