

Classification

- Phylum Arthropoda contains the following Classes :
- 1 **Insecta** (insects),
- 2 **Arachnida** (spiders, mites, ticks, scorpions, etc),
- 3 **Chilopoda** (centipedes)
- 4 **Diplopoda** (millipedes)
- 5 **Crustacea** (crabs, shrimp, lobsters, water fleas, etc).



Indirect impairment

- 1 **Mechanical transmitting vector**
They play the role as a passive carrier of pathogens.
- 2 **Biological transmitting vector**
The arthropod is used by pathogens not only as a vehicle but also as an environment for development and/or reproduction to their infective stages.

Class Chilopoda:

1. examples – centipedes
2. main body parts – many segments
3. number of legs – one pair per segment
4. terrestrial
5. carnivorous
6. head has large antennae
7. first body segment modified as **poison** claws

The impairment of arthropods to humans

- 1 Direct impairment:
 - 1a : harassment and blood sucking
 - 1b: sting and inoculation of poison
 - 1c: allergic reaction
 - 1d: parasitism : such as myiasis, scabies, etc.

Class Insecta – the insects

1. examples – flies, ants, wasps, bees, beetles, dragonflies, butterflies, cicadas mayflies, grasshoppers, crickets....
2. main body parts – 3 – head, thorax and abdomen
3. number of legs – 3 pair (six)
4. mostly terrestrial



Class Chilopoda

- 15-175 pairs of legs
 - 1 pair per segment
- Can be very large in tropical regions
- Flattened bodies
- 1st segment app. modified as poison claws
- Predatory
 - Move quickly in search of prey (earthworms, insects, etc.)



Class Crustacea

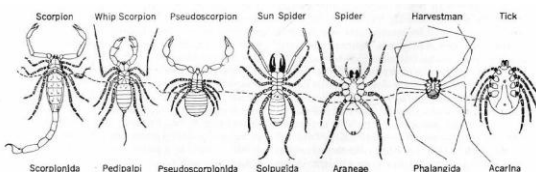
1. examples – crabs, lobsters, crayfish, shrimp, barnacles
2. body parts – two to three
3. number of legs – five pair (ten) usually
4. mostly marine

Class Diplopoda

- Millipedes
- 2 pairs of legs per segment
- Adapted for burrowing through soil
 - Move slowly (legs are short)
- Rounded bodies
- Eat plant matter

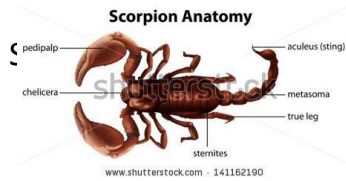


• Class Arachnida



Class Arachnida:

1. examples– spiders, scorpions, ticks, mites
2. main body parts – two – cephalothorax and abdomen
3. number of legs -four pair (eight)
4. mostly terrestrial



- Differ from spiders in 2 ways
 - Large pincerlike pedipalps
 - Large stinger on the last abdomen segment
- Usually nocturnal hunters
- Prefer tropical or desert climates

*Latrodectus*

Soft ticks



Ticks and mites

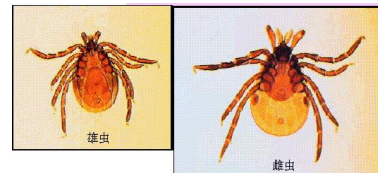
- Morphology:
- 4 pairs of legs
- (Adult)
- Egg ----- larva---- nymph---- adult

The relationships with diseases

Direct impairment:

- 1 sting and blood sucking
- 2 tick paralysis (caused by the poison of ticks to nervous system)

Hard tick



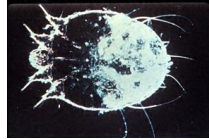
Scutum on its back

Male(left)

Female(right)

Scabies mite (*Sarcoptes scabiei*)

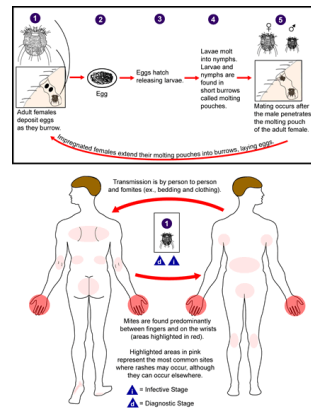
Scabies mite is the cause of scabies and is distributed worldwide



Indirect impairment:

- Tick-borne relapsing fever
- Q-fever
- Lyme disease
- Omsk Haemorrhagic Fever (OHF)
- Rossian Spring -Summer Encephalitis (RSSE)
- Kyasonur Forest Disease (KFD)
- Tick Borne Encephalitis (TBE)
- Crimean-Congo Haemorrhagic Fever (CCHF)

scabies

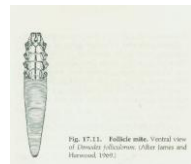


They are common mites found in humans. Opportunistic pathogenic mites



Demodex (follicle mites)

D. brevis
(in sebaceous gland)



D. folliculorum
(in hair follicle)

