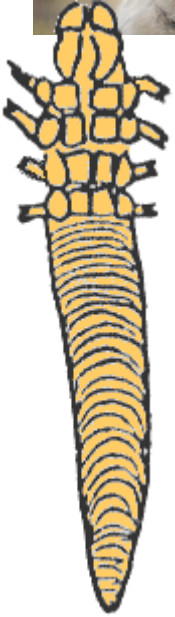
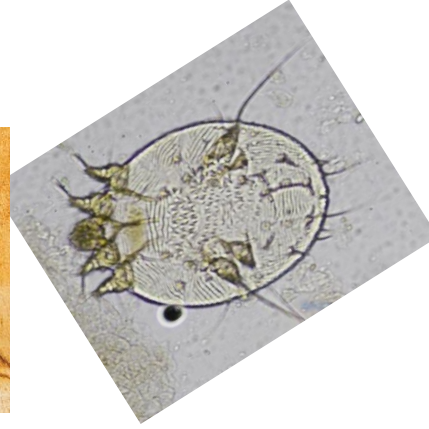
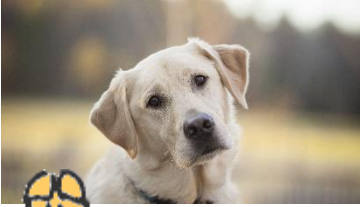




Class: Arachnida



डा. अजीत कुमार

परजीवी विज्ञान विभाग

बिहार पशुचिकित्सा महाविद्यालय

बिहार पशु विज्ञान विश्वविद्यालय

पटना-800014 (बिहार)

Phylum: Arthropoda

CLASSIFICATION:

Phylum: Arthropoda

Classes

Insecta

Flies, Lice,
fleas, bugs etc.

Arachnida

Order: Acarina
(Ticks , mites,
spider &
scorpions)

Pentastomida

Family: Linguatulidae
(Tongue worms)

Phylum: Arthropoda

CLASSIFICATION:

Phylum: Arthropoda

Classes

Insecta

Arachnida

Pentastomida

Subclasses: Apterygota
(Generally wingless insects)
and Pterygota

Subclasse: Pterygota

Divisions

Exoterygota

Endopterygota

Order: (1) Mallophaga (biting lice)
(2) Siphunculata/Anoplura (sucking lice)
(3) Hemiptera (bugs)
(4) Odonata (dragon flies)
(5) Orthoptera (cockroaches,
grasshoppers)

Order: (1) Diptera (true flies)
(2) **Siphonaptera (fleas)**
(3) Coleoptera (beetles)
(4) Hymenoptera (bees, wasps,
ants)

Class: Arachnida

Phylum: Arthropoda

Class

Insecta

Arachnida

Pentastomida

Sub-class: Acari
(Acarina)

Family: Linguatulidae
(Tongue worm)

ORDER

Parasitiformes

Acariformes

Sub-order

Sub-order

Ixodida
(metastigmata)

Gamasida
(Mesostigmata)

Actinedida
(Prostigmagta)

Acaridida
(Astigmata)

Oribatida
(Cryptostigmata)

TICKS

Family: Dermanyssidae
Genus: *Dermanyssus*

Family: Trombiculidae
Genus: *Trombicula*

Family: Demodicidae
Genus: *Demodex*

Family: Sarcoptidae
Genus: *Sarcoptes*,
Notoedres

Family: Knemidocoptidae
Genus: *Knemidocoptes*

Family: Psoroptidae
Genus: *Psoroptes*,
Chorioptes,
Otodectes

Mites

Phylum: Arthropoda

Class

Arachnida

Sub-class: Acari
(Acarina)

ORDER

Parasitiformes

Acariformes

Sub-order

Sub-order

Gamasida
(Mesostigmata)

Actinedida
(Prostigmata)

Acaridida
(Astigmata)

Oribatida
(Cryptostigmata)

Family: Dermanyssidae
Genus: *Dermanyssus*

Family: Trombiculidae
Genus: *Trombicula*

Family: Demodicidae
Genus: *Demodex*

Family: Sarcoptidae
Genus: *Sarcoptes*,
Notoedres

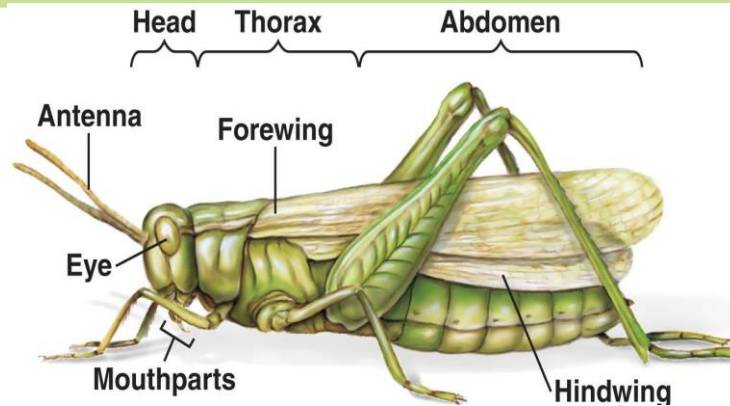
Family: Knemidocoptidae
Genus: *Knemidocoptes*

Family: Psoroptidae
Genus: *Psoroptes*,
Chorioptes,
Otodectes

Class: Arachnida

General characters of Class -Insceta:

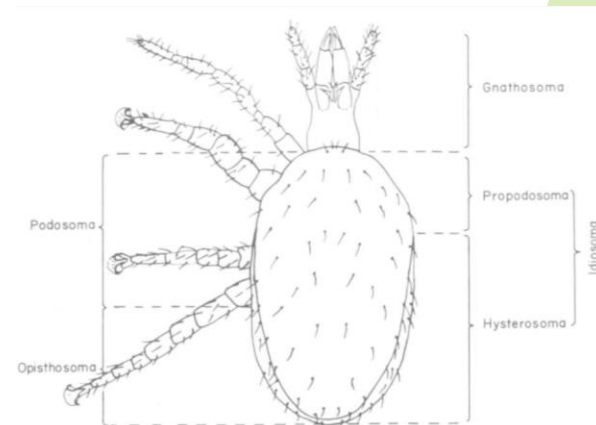
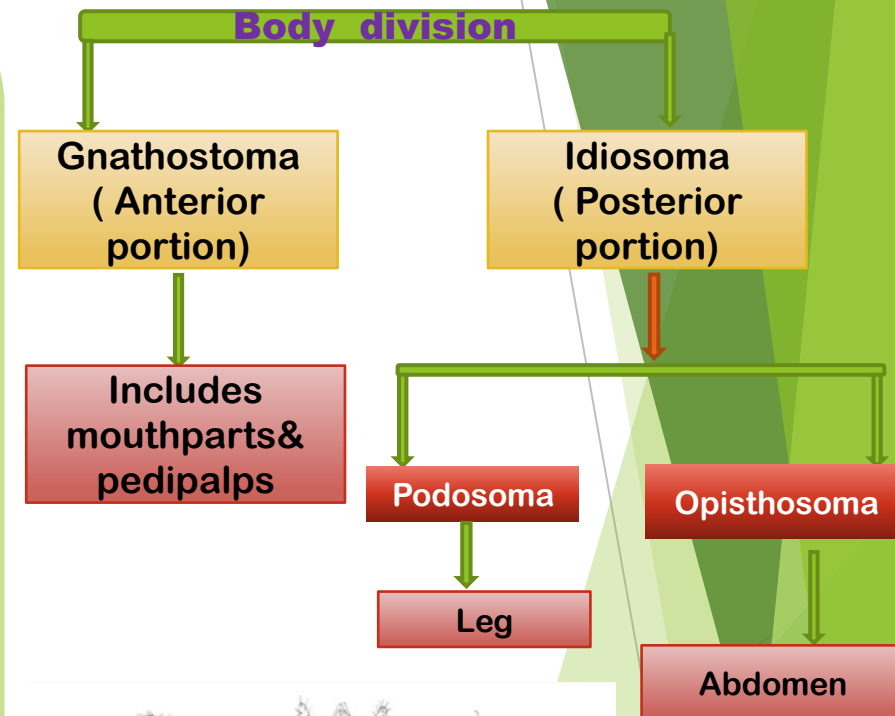
- ⌚ Body divided into head, thorax and abdomen.
- ⌚ Head (consists of six-fused segments) bears a pair of antennae, mouth parts and compound eyes.
- ⌚ Abdomen consists of about 11 segments.
- ⌚ Mouth parts consist of labrum or upper lip, paired mandibles and maxillae (biting jaws), a labium (lower lip) and a hypopharynx (tongue).
- ⌚ Respiratory organs are tracheae which open through spiracles or stigmata at the sides of the body. A chitinous ring (peritreme) surrounds the spiracle opening, it opens into a vestibule or atrium.
- ⌚ Each compartment of heart opens into the haemocoel through a pair of ostia.
- ⌚ Complete (Holometabolus).



Class: Arachnida

General characters of Class -Arachnida:

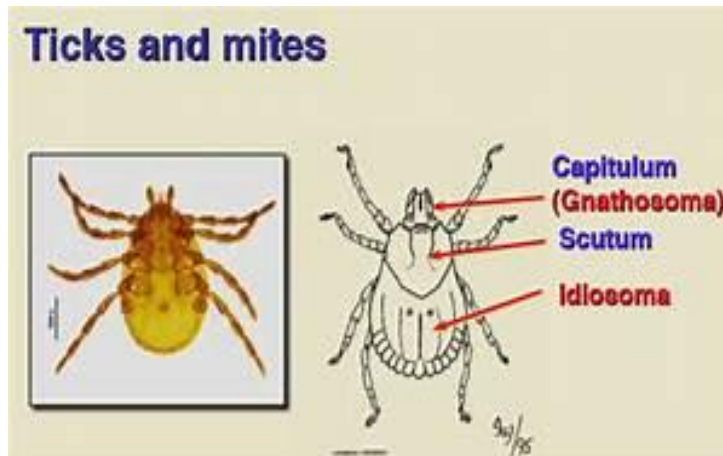
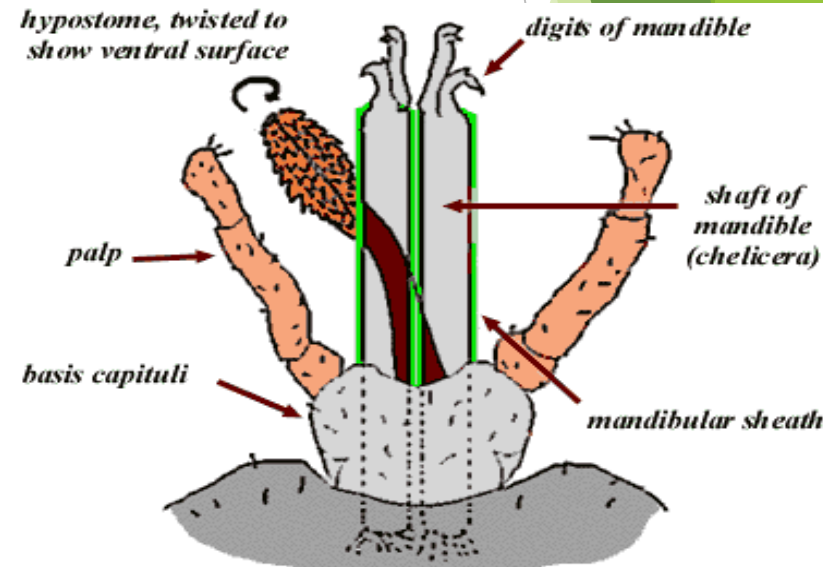
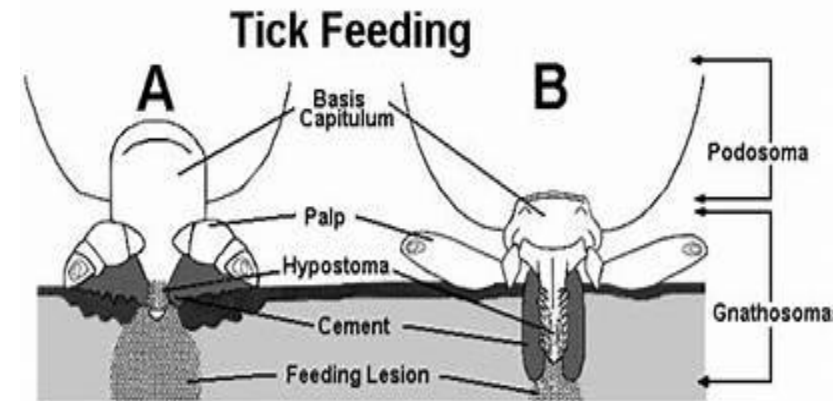
- ⌚ Outer body covering is known as integument which is consisted of cuticle and epidermis.
- ⌚ Body divided into two portions-
 - Gnathostoma or capitulum (Anterior portion)- which includes mouthparts or rostrum
 - Idiosoma (Posterior portion) - it again subdivided into podosoma (legs) and Opisthosoma (Abdomen)



Class: Arachnida

General characters of Class -Arachnida:

- ⌚ **Basis capitula bears mouth parts and together called gnathostome or capitulum.**
- ⌚ **Mouth parts consist of a pair of chelicerae, a pairs of pedipalps and a median toothed structure called hypostome.**
- ⌚ **Segmentation of the body is almost absent or inconspicuous.**



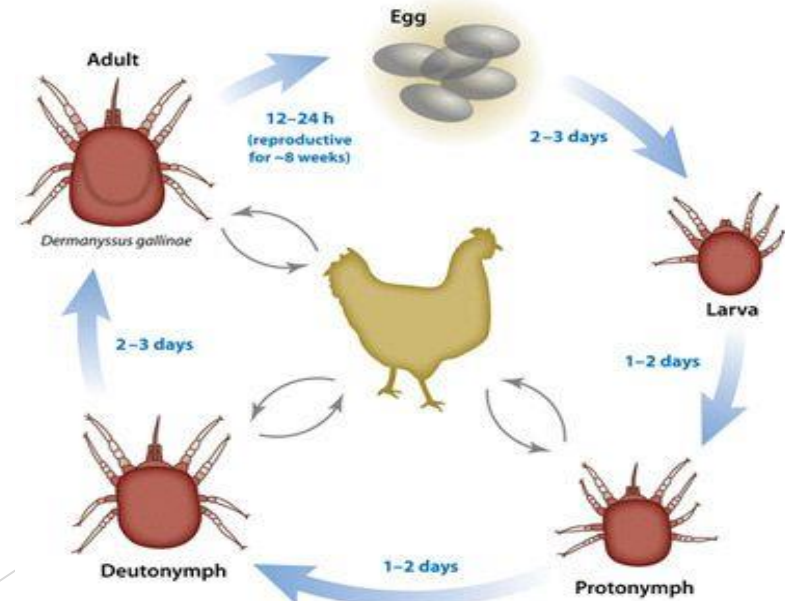
Class: Arachnida

Life-cycle of Class- Arachnida:

Hemimetabolus
(Incomplete metamorphosis)



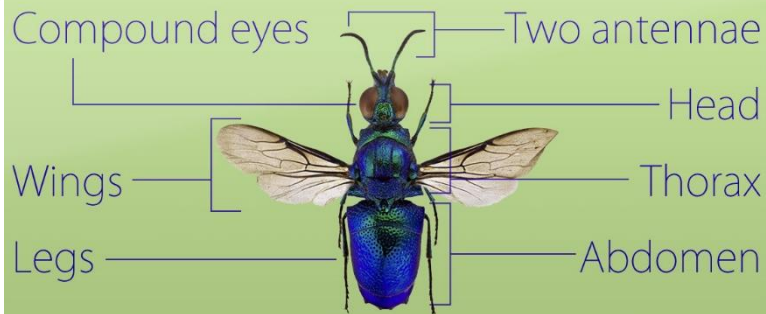
- Nymph resembles to the adult but has no sexual organs.
- Usually more than one nymphal stages or instars occurs i.e. protonymph, deutonymph and tritonymph.



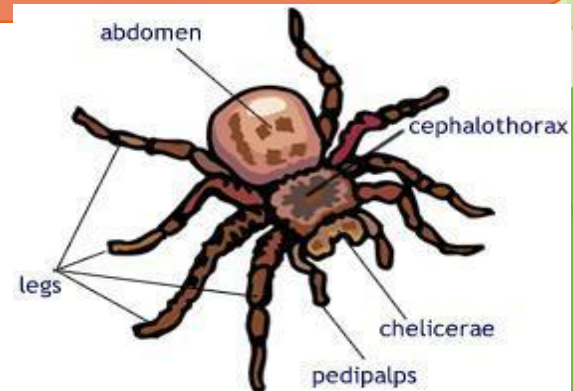
Insecta vs Arachnida

Differentiate characters between class Insecta and Arachnida

Character	Insecta	Arachnida
Body	Divided into three parts i.e. Head, thorax & abdomen	Divided into two parts i.e. cephalothorax and abdomen
Antennae	Present	Absent
Mouth parts	Consist of labrum, labium, hypopharynx, mandible (in pair) and maxillae(in pair)	Consist of a pair of chelicerae, a pairs of pedipalps and a toothed structure i.e. hypostome
Legs	3 pairs	Larvae have 3 pairs whereas nymph and adult have 4 pairs of legs
Wing	May or may not be present	Absent
Metamorphosis	Holometabolus / Hemimetabolus	Hemimetabolus (incomplete metamorphosis)



Insect



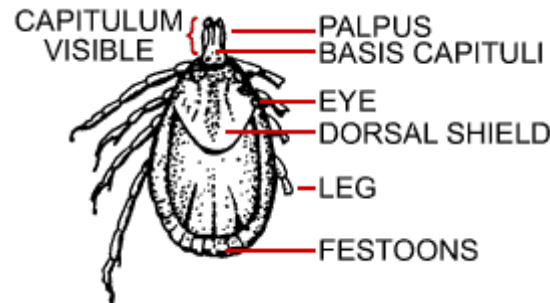
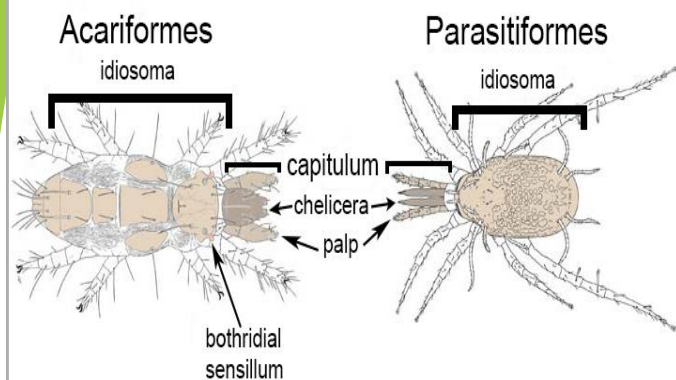
Arachnid

Ticks vs Mites

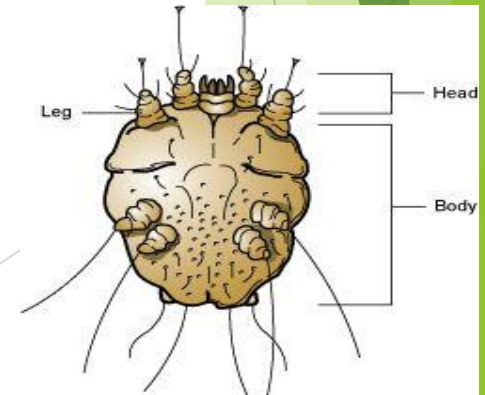
Difference between Ticks & Mites

Character	Ticks	Mites
Size	Macroscopic	Microscopic
Eye	Usually present	Usually absent
Basis capituli	Well developed	Not well developed
Legs	Laterally situated and uniform in shape	Last two pairs of leg are situated posteriorly. legs of some mites bear stalk and/or sucker at the terminal part
Type of parasite	Temporary	Permanent
Location on host	On the skin	beneath the skin
Hairs and bristles	Not prominent	Prominent

Mite and Tick Body Parts, Dorsal View



Tick



Mite



**THANK
YOU**