

Prostigmata and Astigmata
(Mites, Scabies, Mange)

- More than 250 species of mites are recognized as the cause of health-related problems for humans and domestic animals.
- Types of problems include:
 - Irritation
 - Persistent dermatitis
 - Mite-induced allergies
 - Transmission of pathogenic microbial agents and metazoan parasites
 - Serving as intermediate hosts of parasites
 - Invasion of respiratory passages, ear canals, and occasionally internal organs
 - An abnormal fear of mites, or acarophobia
 - Delusory acariosis

- Members of the orders Prostigmata and Astigmata are cause of animal-health problems.
- The body is divided into two major regions, **gnathosoma** and **idiosoma**
- Developmental stages in the life history of mites are the egg, larva, nymphal stages (protonymph, deutonymph, tritonymph), and adult.

Demodicidae

- *Demodex* spp. are highly specialized skin parasites that live in the hair follicles and associated glands of domestic and wild animals.
- An infestation of demodicid mites is called demodicosis, whereas cases with clinical signs are called demodectic mange.
- The mites are very host-specific and typically occur either in hair follicles or dermal glands.

- Demodectic mange is common in dogs; livestock such as cattle, goats, sheep, and swine; wild animals such as foxes, other canids, and rabbits, and occasionally laboratory animals.
- It is relatively uncommon in cats and horses.

Dog Follicle Mite (*Demodex canis*)

- *D. canis* inhabits the hair follicles and sebaceous glands of dogs.
- It completes its life cycle in three to four weeks.
- Clinical signs are most common in dogs less than a year old, presumably reflecting an immunodeficient state in young animals.

- *Demodex cati* (Cat Follicle Mite)
- *Demodex bovis* (Cattle Follicle Mite)
- *Demodex caprae* (Goat Follicle Mite)

Scabies Mite (*Sarcoptes scabiei*)

- *Sarcoptes* mites that cause mange in animals are morphologically indistinguishable.
- Their life cycles are very similar, with all developmental stages living in burrows formed by the adult females in the layers of the skin.

- The female lays up to three eggs per day.
- Development from egg to adult takes two to three weeks
- The adult males then mate with females either on the skin surface or in shallow dermal pits.

- In extreme cases, severely sensitized animals may experience weight loss, impaired hearing, blindness, exhaustion, and even death.
- Transfer of mites occurs among host by direct contact.
- Transfer between different host species, when it does occur, often results in only temporary infestations.
- Virtually all domestic animals, except cats and guinea pigs, are subjected to infestations of *S. scabiei*.
- Detection of mites requires deep skin scrapings

Notoedric Cat Mite (*Notoedres cati*)

- This is the common *Notoedres* mite of domestic cats in worldwide.
- It also infests wild cats, laboratory rabbits. As the adult female burrows in the skin, she deposit eggs that hatch in three to four days.
- Development from egg to adult requires six to 10 days.

- Lesions usually appear first on the ears, neck, face, and shoulders especially in younger animals.
- Typical signs are intense pruritus, erythema, skin scaling, grayish-yellow crusts, and loss of hair.
- Severe chronic cases can lead to systemic debilitation and death.