

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

السَّلَامُ عَلَيْكُمْ وَرَحْمَةُ اللَّهِ وَبَرَكَاتُهُ

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FAMILY: OESTRIDAE



Oestrus ovis



Gastrophilus spp.



Hypoderma spp.

Family Oestridae

OESTRUS OVIS

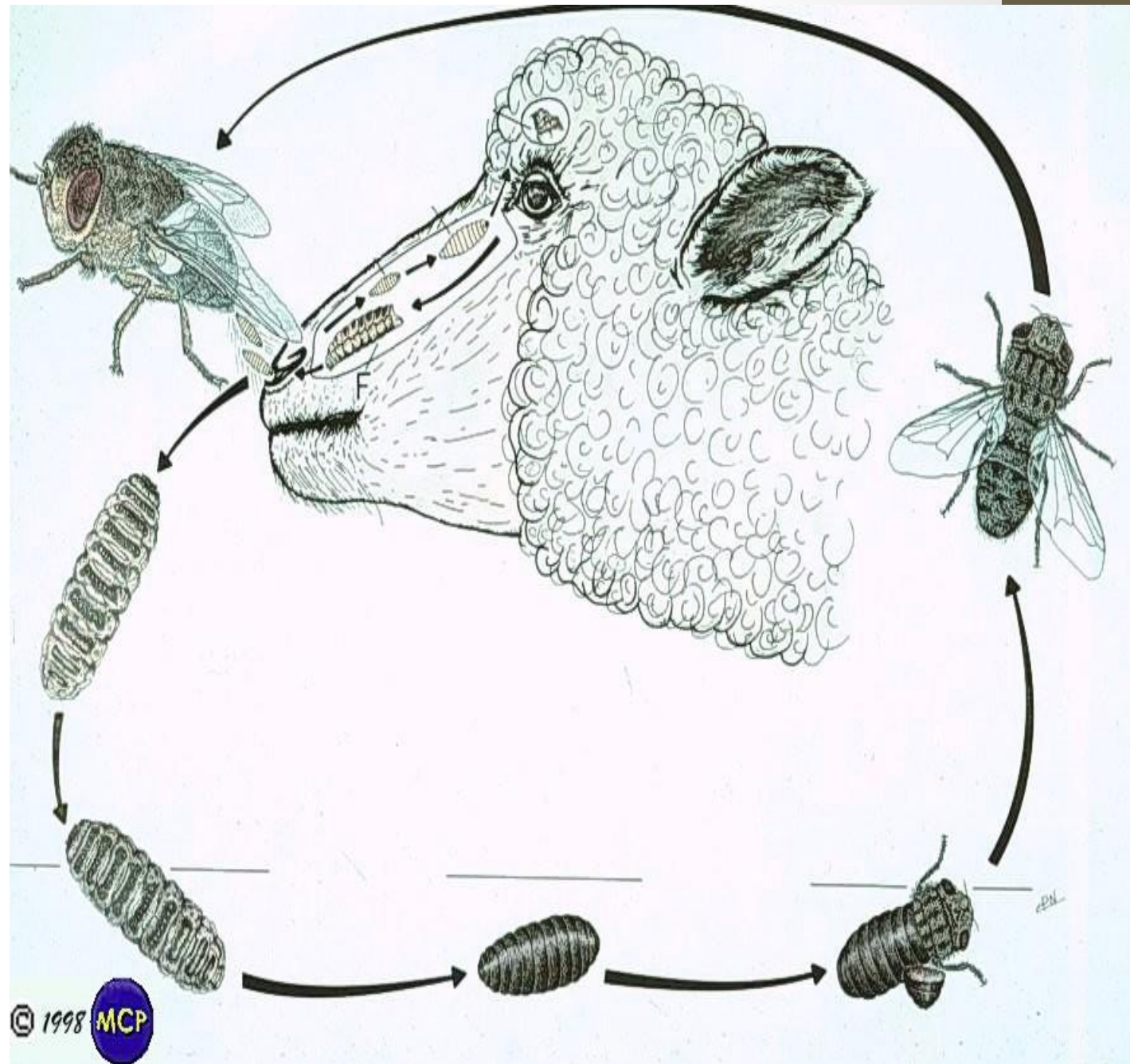
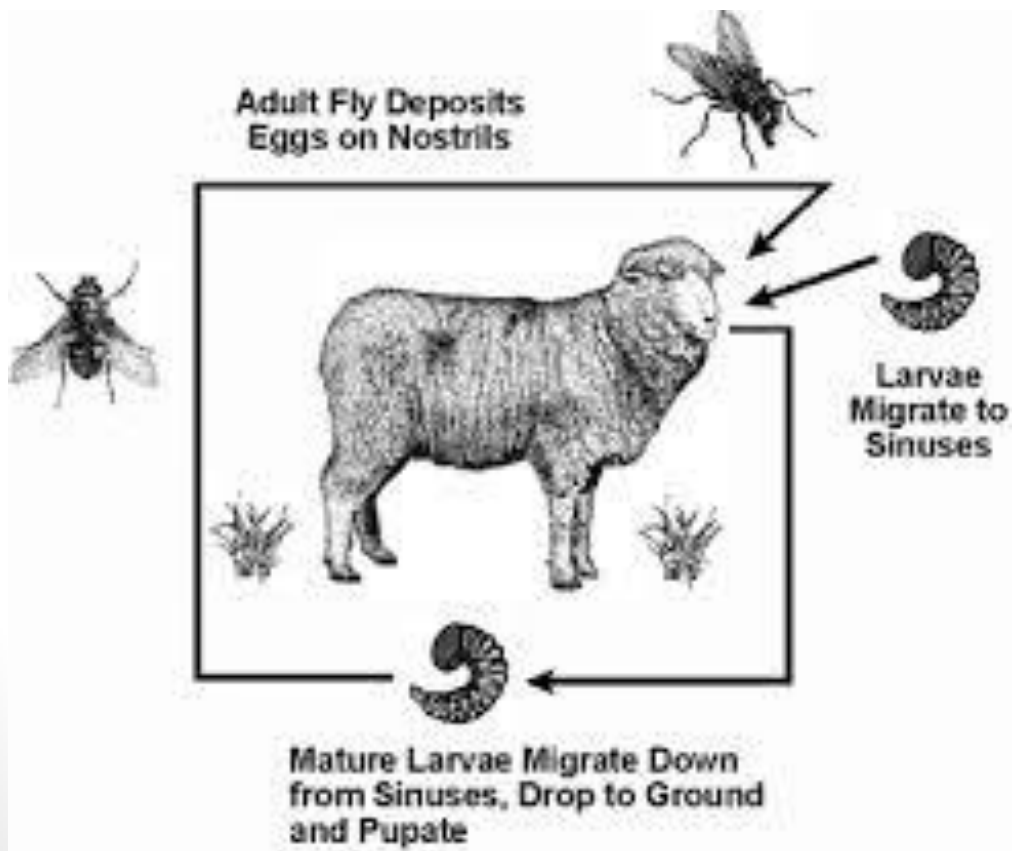
Sheep Nasal bot



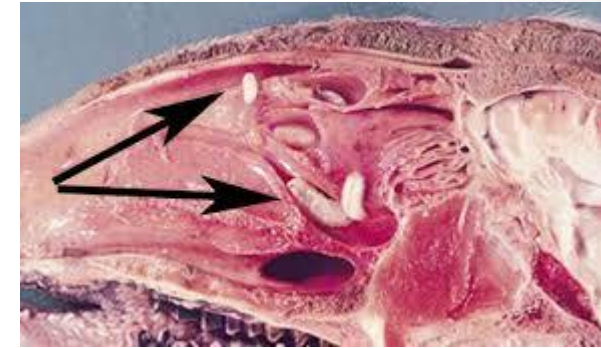
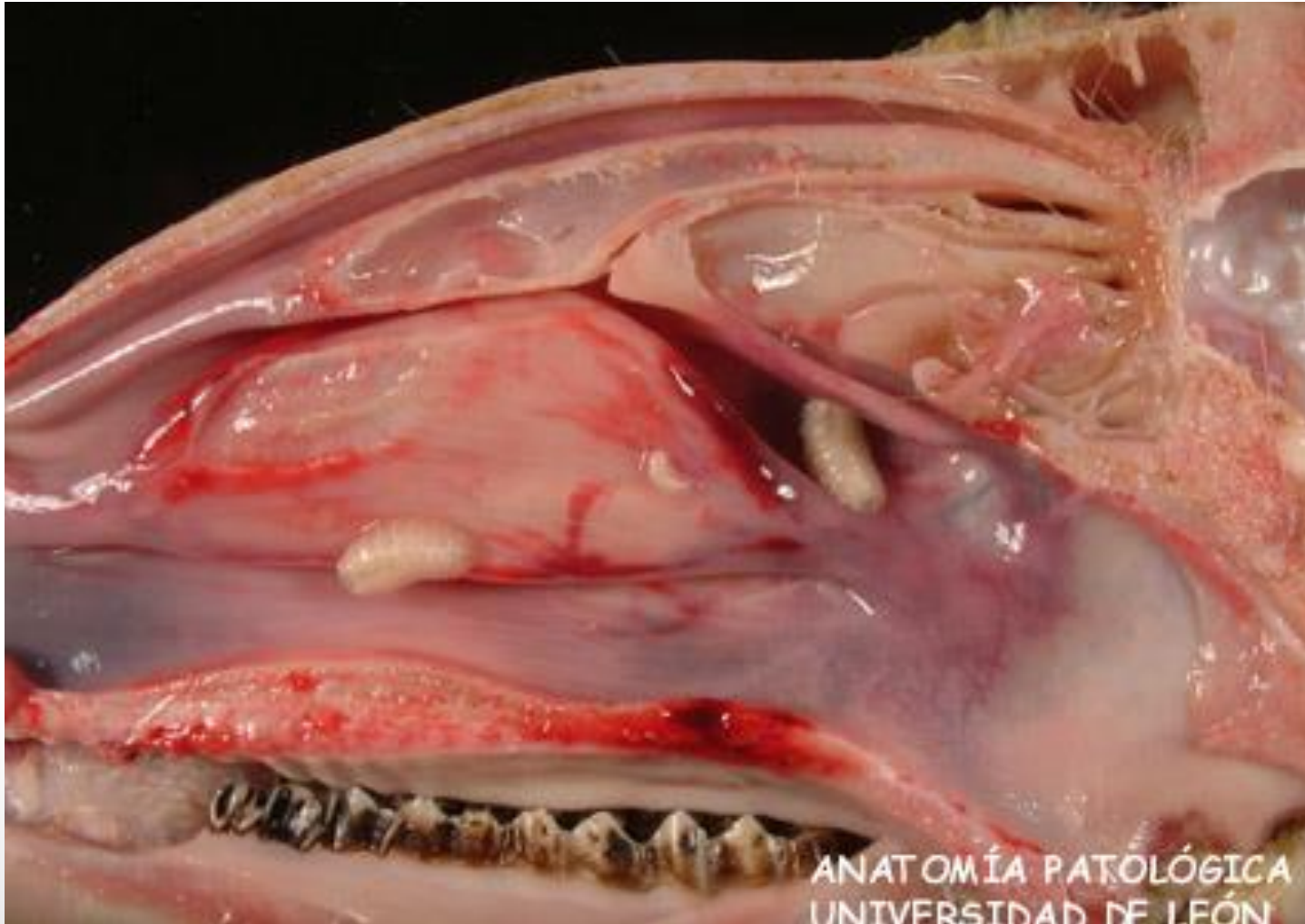
The larva of the sheep bot fly, *Oestrus ovis* L., is a parasite that lives on mucous surfaces of the nasal passages and sinuses of sheep and goats.

- The adult sheep bot fly has a bee-like appearance
- It is 10 to 12 millimeters
- Adults do not feed
- The female are larviparous and deposited their larvae in the nostrils
- Mottled yellowish to gray-brown, and quite hairy
- Mouthparts are rudimentary

Life Cycle



LARVAE WITHIN NASAL SINUS



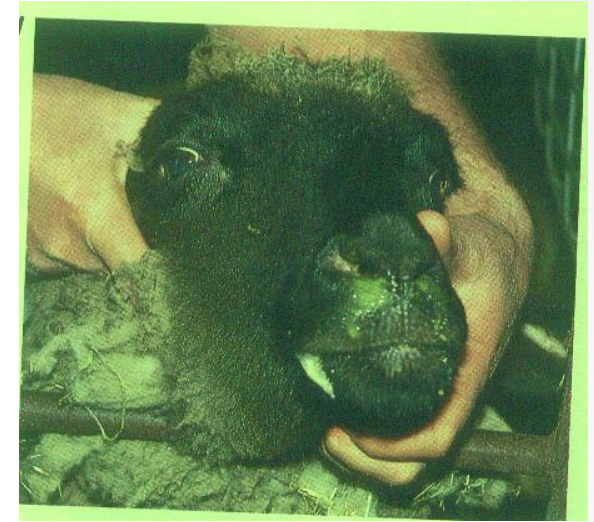
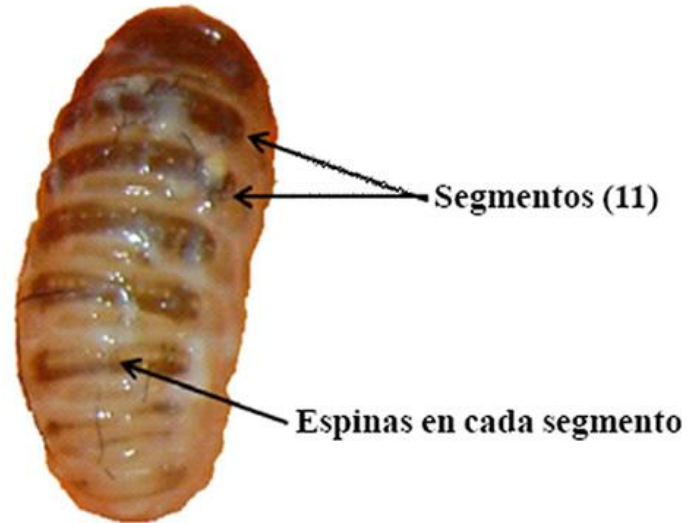
CLINICAL SIGNS

1. Sheep attacked by ovipositing flies stamp with their feet, shake their heads, sneeze, and blow and ram their noses against the ground or other sheep.
2. In some cases, these acts traumatize and infect the nostrils.
3. The animals also seek cool areas such damp shade where the flies do not frequent.
4. During the time the larvae occupy the nose and sinuses, affected sheep may hold their heads towards the ground and persistently discharge mucopurulent exudate from the nostrils.
5. Breathing may be difficult due to swollen nasal membranes and plugged nostrils.
6. The morbidity may reach 80% of a flock, but mortality is nil. The course of adult fly attack periodically extends through the summer and the rhinitis and sinusitis continue up to 10 months

Appearance of a runny nose



Mucopurelent nasal discharge in sheep bot



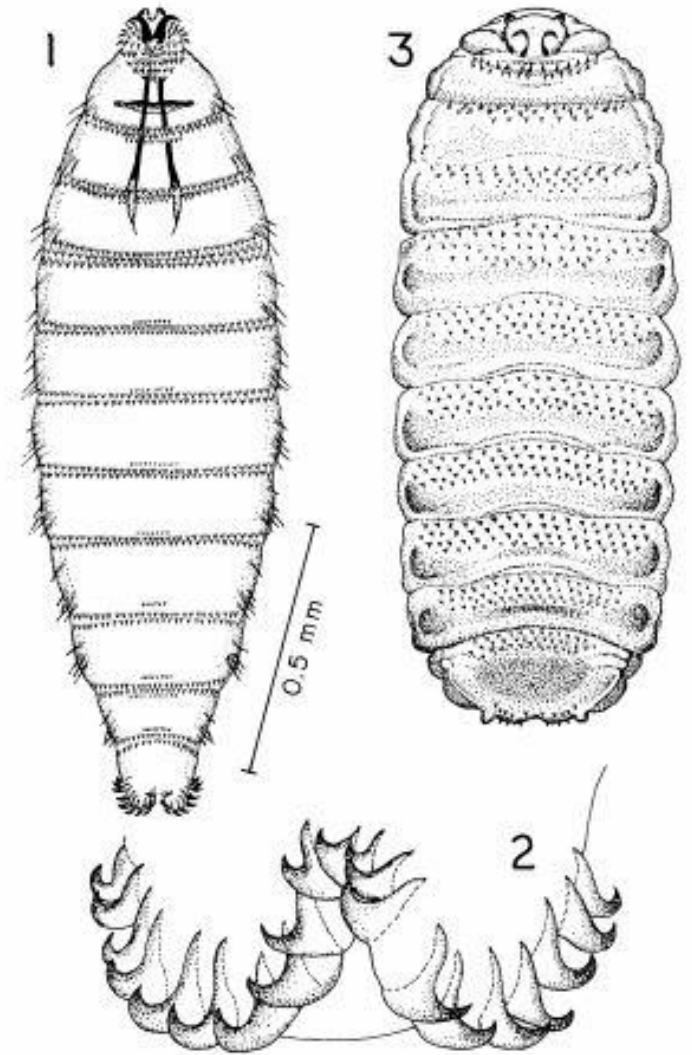
- Extreme annoyance during larviposition
- A snotty and sometimes bloody nasal discharge
- Loss of appetite,
- Vigorous head shaking
- Secondary infection of the sinuses; sometimes death.

DIAGNOSIS

Chronic nasal discharge and finding of larvae in sinuses confirm myiasis.



Treat with ivermectin sheep drench.



FIGURES 1-3. *Oestrus ovis* L. 1. Ventral aspect of first instar. 2. Enlarged view of caudal hooklets on first instar. 3. Ventral aspect of third instar. (Modified after Grunin.)

WARBLE FLY

← **HYPODERMA** →

Cattle Grub



Warble fly is a name given to the genus Hypoderma.

Large flies which are parasitic on cattle and deer.

Other names include "**heel flies**", "**bomb flies**", and "**gad flies**", while their larvae are often called "**cattle grubs**" or "**wolves**."

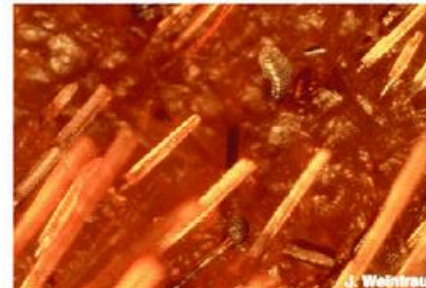
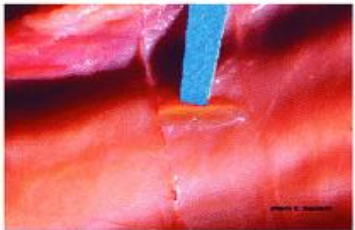
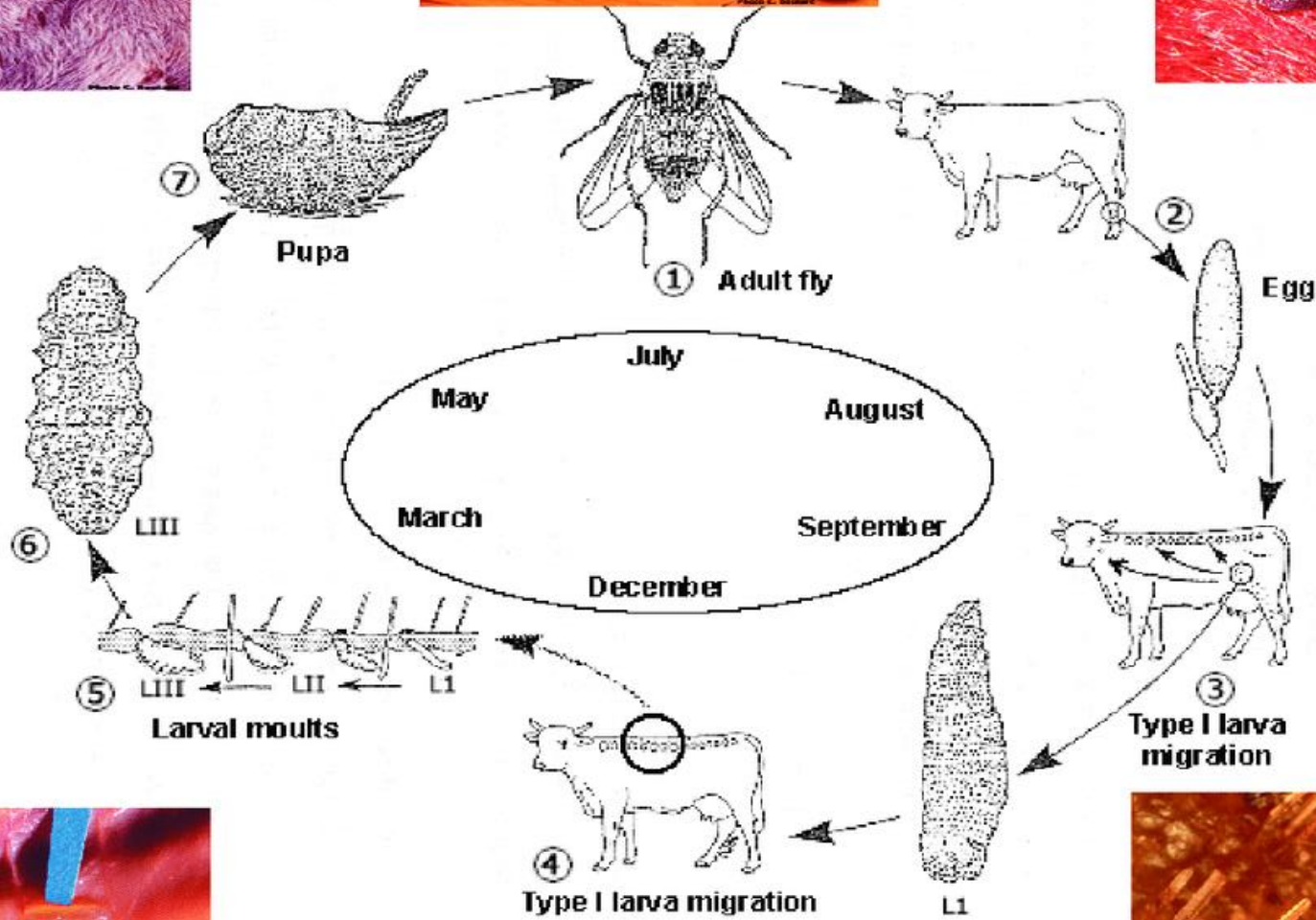
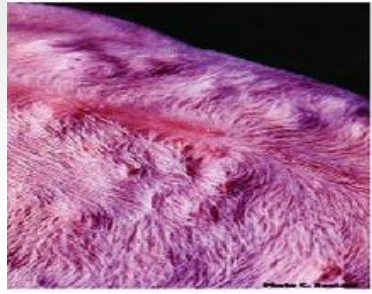
Common species of warble fly include Hypoderma lineatum, Hypoderm bovis (cattle).

MORPHOLOGY

- The adult fly is 12 to 14 mm long; has black banded with yellowish and orange hair,
- Leg well covered with black and orange hair
- Wings with black veins.



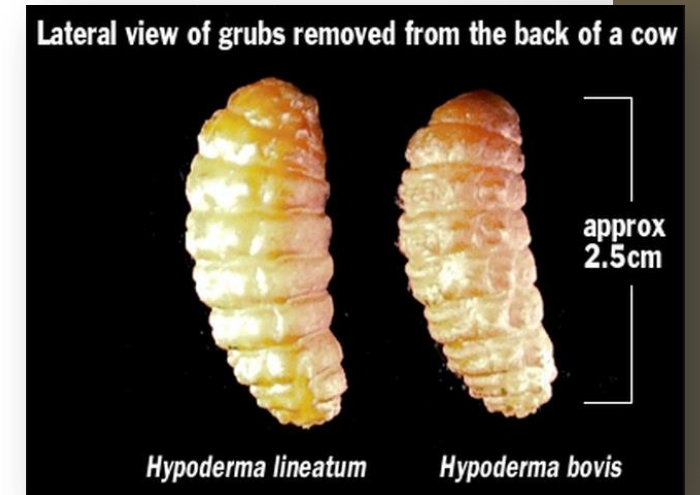
Life Cycle



IMPORTANCE

Hide and flesh damage = economic loss.

Irritation = weight loss and decreased milk production



DIAGNOSIS: look for breathing pores or eggs on coat

TREATMENT: Ivermectin

GENUS GASTROPHILUS

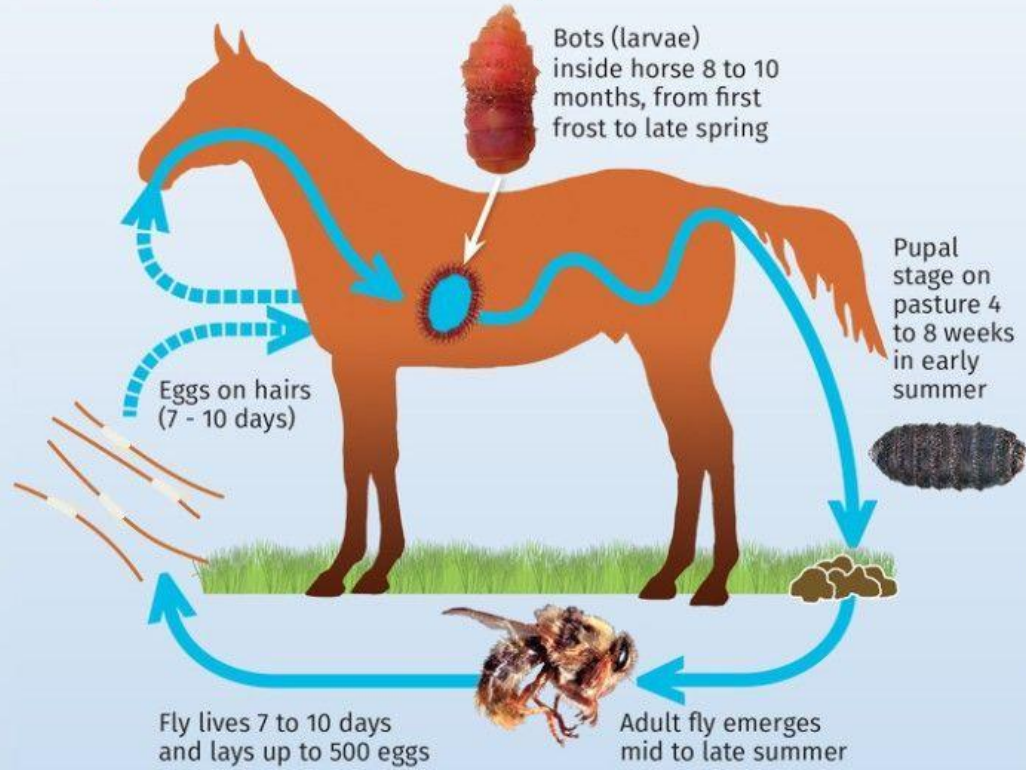
- ❖ Parasites of horses and kin, elephants
- ❖ Eggs near mouth or legs
- ❖ Larvae penetrate mouth, nose
- ❖ Larvae migrate to esophagus, stomach, or intestine
- ❖ Pass out with feces; pupate

Larvae are barrel-shaped & armed with rows of spines
Gasterophilus spp.

Horse bot fly

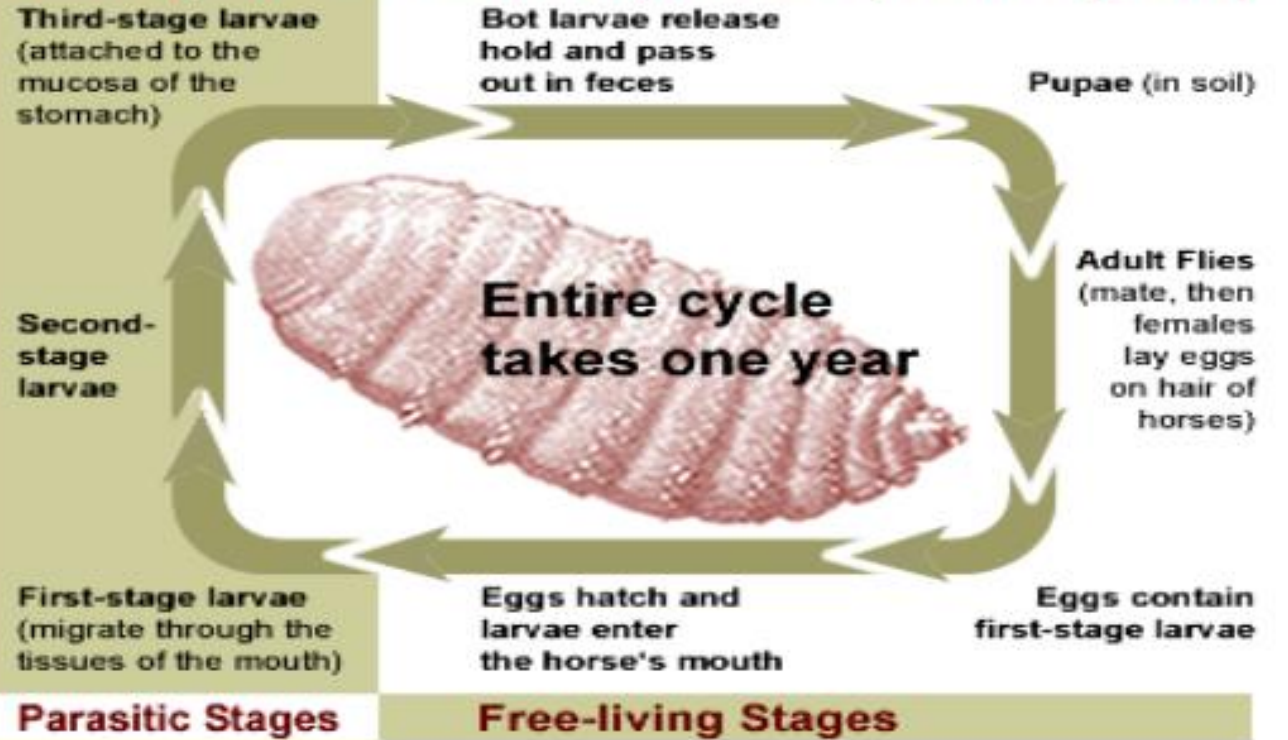


Life Cycle of Common Horse Botfly



Life Cycle

Life cycle of Gasterophilus species (Bots)



IMPORTANCE

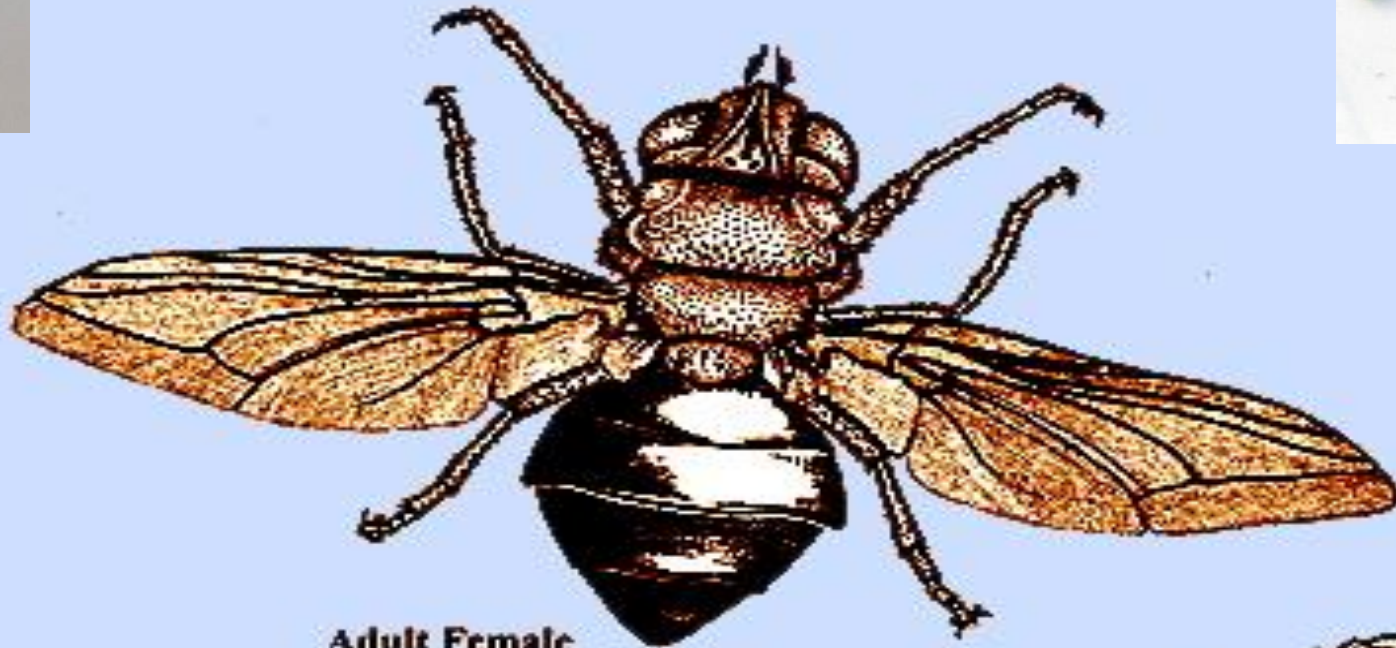
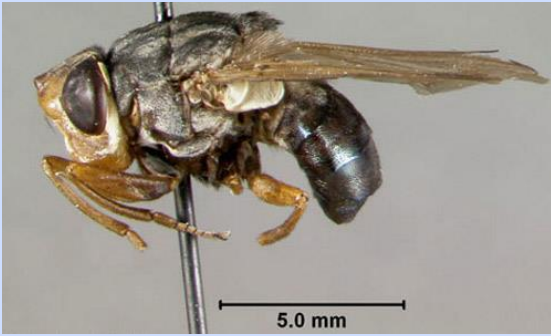
Bots cause a mild gastritis, but large numbers may be present with no clinical signs. The first instars migrating in the mouth can cause stomatitis and may produce pain on eating. The adult flies may annoy horses when they lay their eggs.

Specific diagnosis of *Gasterophilus* infection is difficult and can be made by demonstrating larvae as they pass in the feces. observation of the yellow to cream-white bot eggs (1–2 mm) on the horse's hairs all help identify the presence of the parasite in a given herd.

TREATMENT

Ivermectin is effective against oral and gastric stages of bots

DIPTERA: Oestridae
Dermatobia hominis
(Botfly of Humans)



Adult Female



1st Stage Larva



2nd Stage Larva



Full-grown Larva

mouth hooks

[Modified from Matheson 1958 & drawings
by Newstead & Potts]

Adult: The adult bot fly is 12 to 18 mm long with a wide array of colors.

The face is yellow with a metallic blue abdomen and orange legs and each body segment is covered with hairs which give the fly a bumblebee appearance.

Egg: The egg of the bot fly is creamy colored and oval in shape, and is attached to different species of blood-feeding insects captured by the female bot fly. The eggs, usually attached to the ventral side of the body, hatch when the insect carrying the eggs begins to blood feed on a warm-blooded host.

Larva: The larva, or white maggot, goes through three instars once in the mammalian host. Each instar develops a distinctive shape. The first instar is worm-like with a bulbous end. The second instar larva has a bottle-neck shape. The third instar is cylinder shaped. Each instar possesses backward projecting spines that encircle the thorax.

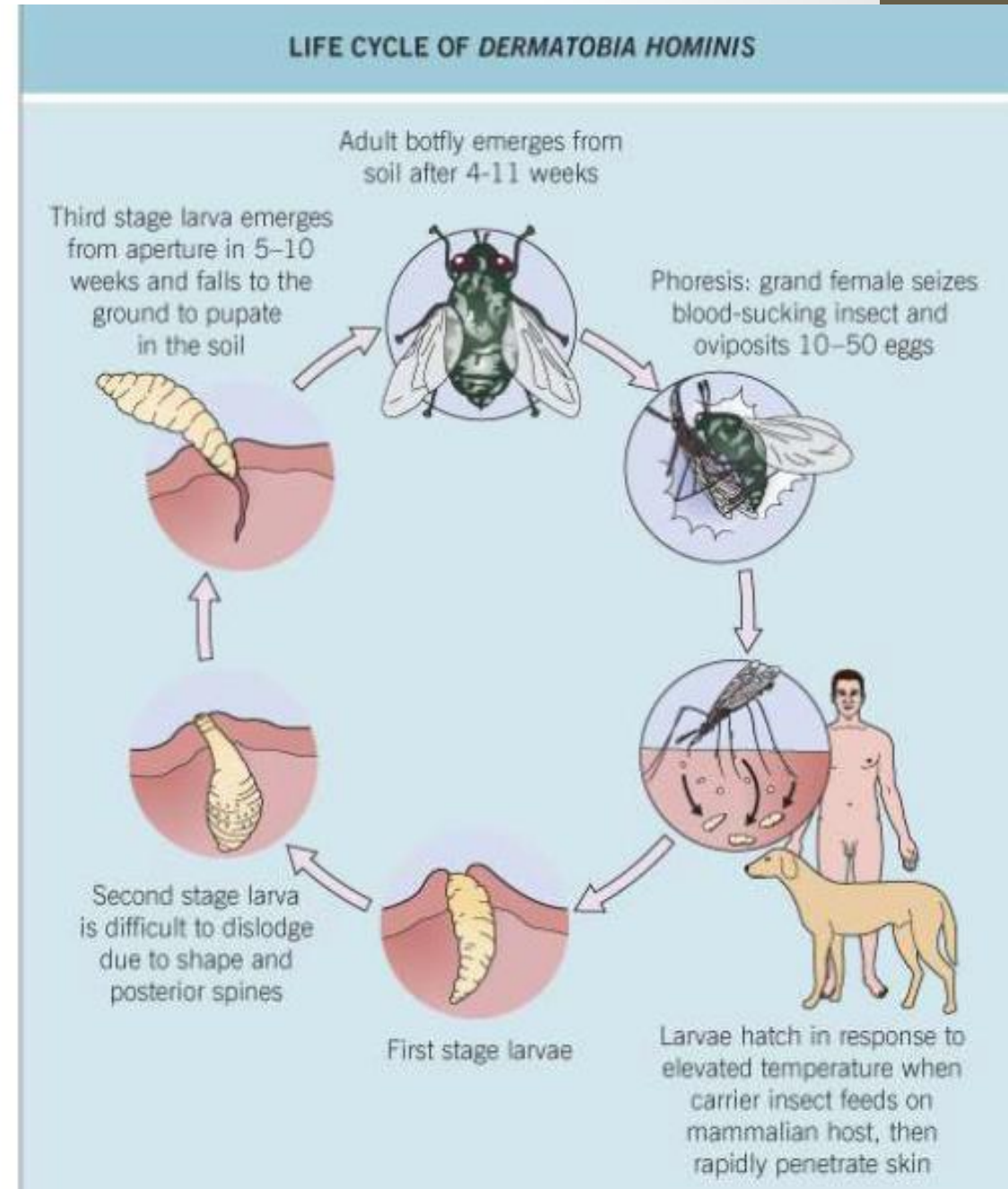
SYMPTOMS

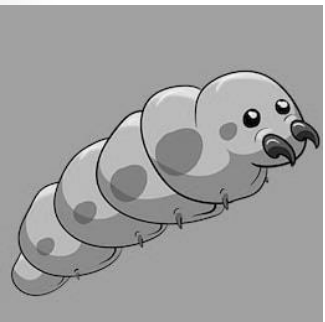
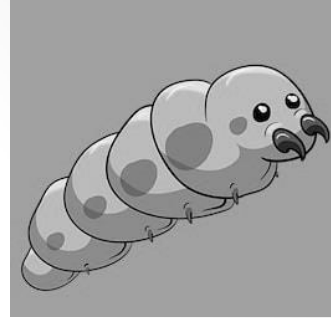
Infestations with *D. hominis* are often characterized by cutaneous swellings on the body exposed areas such as the scalp, face, and extremities. these cutaneous swellings may produce discharges and be painful [2]. Patients may have a sensation of irritation, crawling or episodic lancinating pain.

They capture blood-sucking arthropods (such as mosquitoes) and lay their eggs on the vectors' bodies, using a glue like substance for adherence [2]. Both fly larvae develop within the eggs, but remain on the vector until it takes a blood meal from a mammalian or avian host. Newly-emerged bot fly larvae then penetrate the host's tissue [3], and feed in a subdermal cavity [4] for 5-10 weeks, breathing through a hole in the host's skin. Mature larvae (15-20 mm in length) drop to the ground [5] and pupate in the environment. Larvae tend to leave their host during the night and early morning, probably to avoid desiccation. After approximately one month, the adults emerge to mate and repeat the cycle [6].

Life cycle - D hominis

- ▶ D hominis lays her eggs on mosquitoes which deposit them on mammals
- ▶ Cordylobia anthropophaga deposits eggs on moist clothing, soiled blankets, and in sand
- ▶ Larva can live 15 days without feeding
- ▶ When in contact with the host it penetrates the skin
- ▶ Any body area can be affected
- ▶ Incubation period 1-12 weeks





MYIASIS



The invasion of organs and tissues of humans or other vertebrate animals with dipterous larvae

Myiasis is classified by the affected host tissue

- Gastrointestinal – Digestive system, “Enteric” refers to intestinal tract. Includes anus.
- Urogenital – urogenital openings to the outside.
- Ocular – eyes, esp. subconjunctival myiasis
- Nasopharyngeal – nasal & sinus passages
- Auricular – ear, inner & outer
- Cutaneous – generic skin
- Oral - mouth

OCULAR MYIASIS

Most human cases are incidental infestation from non-human bot flies

Also called "Ophthalmomyiasis"

Sheep bot is most common agent and can cause epidemics



Can superficially resemble Romani's sign



NASOPHARYNGEAL

Very similar to Ophthalo-myiasis

A particularly dangerous form as larvae can migrate to brain tissue



Figura 1. Aspecto externo do nariz. Observar extensa área de necrose em vestibulo nasal esquerdo com área de erosão da pele.



AURICULAR MYIASIS

Typically incidental or accidental.

Most human cases are with the Old World Screwworm

Lay their eggs in batches, larvae stay together

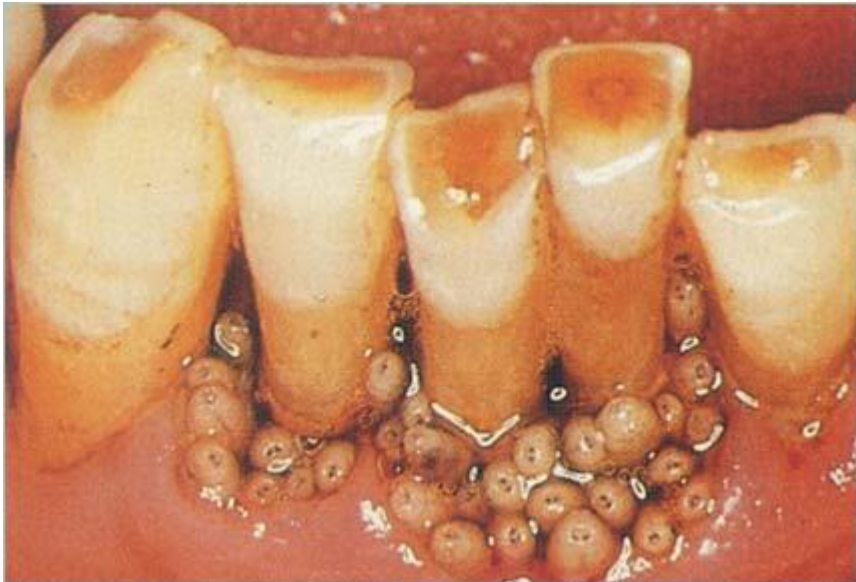


ORAL

Fairly rare pathology in humans

Associated with poor oral hygiene, alcoholism, senility, trauma with lesions, severe halitosis and others conditions.

Caused by a wide variety of species



- *Dermatobia hominis*

Skin infection with fly larvae



Furuncular myiasis is the most common clinical manifestation and occurs when one or more *Cordylobia anthropophaga* (tumbu fly) larvae penetrate the skin, causing pustular lesions that resemble boils or furuncles.

Boil-like lesions on a patient with botfly myiasis; the central punctum is apparent



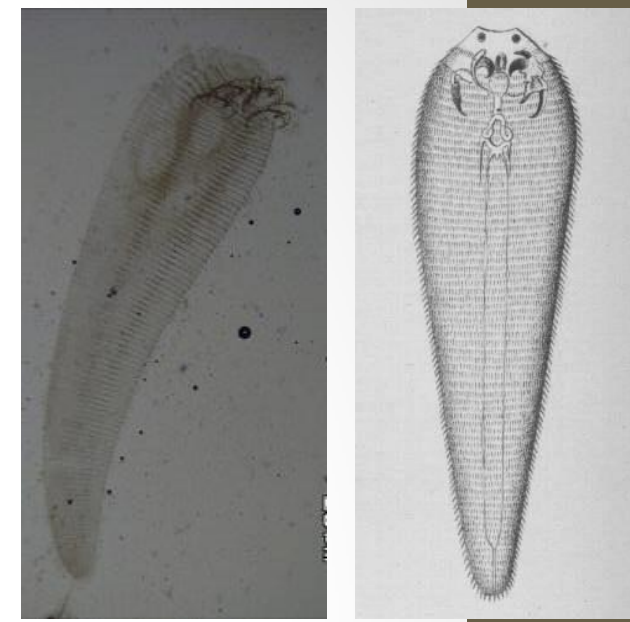
CONTROL OF MYIASIS SPECIES

- ❑ Control or eradication of the fly population - through environmental sanitation or chemical control.
- ❑ Avoidance of infestation- do not sleep outdoors or on the ground during fly activity, dress or cover wounds to avoid fly strikes, use screening
- ❑ Treatment of infestation (remove larvae - antibiotic follow-up)

SUBPHYLUM. PENTASTOMIDA

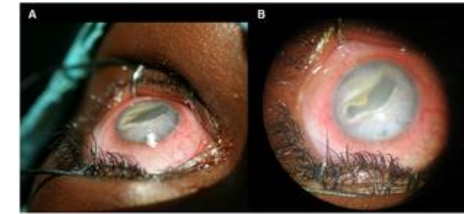
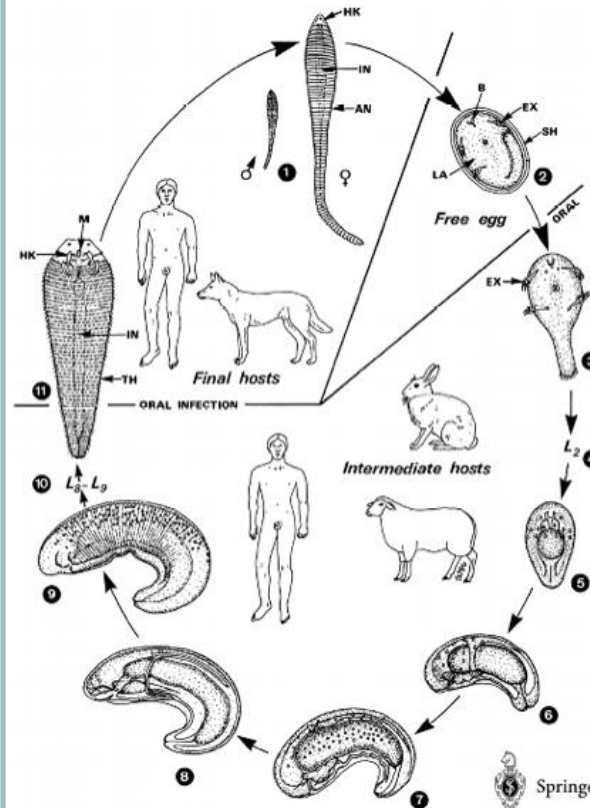
- Vermiform, unsegmented, parasitic worms
 - No antennae
 - Two pairs of ventral retractile hooks near mouth
 - No respiratory, circulatory and excretory organs
- e.g. *Linguatula* (Tongue worm)

They are wormlike parasites of the respiratory systems of vertebrates. They live in the nasopharyngeal region of **mammals**. **Cats**, **dogs**, fox, and other **carnivores** are normal hosts of this parasite.



Life cycle of *Linguatula serrata*:

Adults live in the nose of dogs (and rarely of man). Embryonated eggs are set free via nasal mucus and/or feces. The thin outer is left out in drawings, since it disappears soon. If intermediate hosts swallow eggs, the four-legged primary larva hatches and migrates via blood vessels to the inner organs. Humans may also become accidental intermediate hosts. (4-11) Larval stages 2-11 are included in a capsule of host origin and grow after molts. When final hosts ingest raw (or uncooked) meat of intermediate hosts, the adult stages develop inside the nasal tract.



In most cases infected dogs and cats show no clinical signs. However, massive infections can cause rhinitis (inflammation of the nose) and nasopharyngitis with chronic sneezing and/or coughing, purulent nasal discharge, nose bleeding (epistaxis).



CC Creationsz

Thank
You