BOT FLIES

- Myiasis – invasion of living vertebrate tissue by fly larvae

- Three types of myiasis
  - Accidental – ingestion of eggs/larvae
  - Facultative – either free-living or parasites
  - Obligatory – always parasitic, require a living host

BOT FLIES

Order Diptera
  Muscidae - house flies
  Calliphoridae - blow & bottle flies
  Sarcophagidae - flesh flies

House fly
Blow fly
Flesh fly
Bot Flies

The blow fly life cycle has six parts: the egg, three larval stages, the pupa, and adult.

- Egg: 130 hours
- 2nd larva: 22 hours
- 1st larva: 27 hours
- 3rd larva: 23 hours
- Pupa: 143 hours

At 70 degrees F, each stage in a blow fly’s life takes a known amount of time to complete...

BOT FLIES

Oestridae - bot flies
Cuterebrinae - new world bot flies
Hypodermatinae - cattle grubs
Oestrinae - sheep, horse bots

BOT FLIES

Life History

- Adult flies oviposit on host
- Larvae feed inside host
  - 6 to 8 months
- Pupate on the ground
  - 2 to 4 weeks
- Adults emerge
  - Live 2 to 4 weeks

1 mm
HORSE BOTS

Three species in U.S.

Nose bot – *Gasterophilus haemorrhoidalis*
Throat bot – *G. nasalis*
Common bot – *G. intestinalis*

HORSE BOTS

Life History

Eggs – upper lip (nose bot)
   beneath jaw (throat bot)
   legs (common bot)

Warmth and moisture stimulates hatching

HORSE BOTS

Larvae - Move to mouth and penetrate lips, gums, tongue and remain for 2 to 3 weeks.

Migrate to stomach and attach to lining
HORSE BOTS

Veterinary Importance
Frighten horses
Irritation to mouth tissues
Larvae in stomach
- Obstruction of food flow
- Perforations of stomach lining and ulcers

HORSE BOTS

Management
Cultural
- Grooming to remove eggs
- Clipping hairs
Chemical (historical)
- Apply oil or tar to lip hairs to repel ovipositing females
- Wash body with kerosene to destroy eggs
- Carbon disulfide given orally
Current
- Warm-water insecticide wash
- Oral paste treatment
Torsalo or Human Bot fly

* Dermatobia hominis

- Parasitizes horses, cattle, monkeys, dogs, humans
- Native to the Americas

Torsalo or Human Bot fly

- Unique oviposition strategy
  - Capture a zoophilic or anthropophilic insect
  - Glues cluster of eggs on "porter"

Torsalo or Human Bot Fly

- Larval development occurs at point of entry
- Requires 5 to 10 weeks to develop
**Rodent Bot Fly — *Cuterebra* spp.**

- Normal hosts rodents and rabbits.
- Oviposit close to burrows.
- Larvae hatch in response to increased temp.
- Adhere to host, enter head orifice.
- Burrow through connective tissue.
- Reside underneath skin.

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**Rodent Bot Fly**

- Mature larva backs out through warble pore
- Drops to ground and pupates
- Adult emerges next spring