

Flies

- Bot fly
 - small animal
 - deer
- Warble fly

Small Animal Bot Fly

- PARASITE
- Rabbits, mice, chipmunks, squirrels, cats, dogs, and occasionally **man**
- Fly life cycle – 1. egg 2. larvae 3. pupa 4. adult
- Adult female fly lays eggs along rodent trails
- Larvae find site on head or neck, burrow, form a cyst with a breathing hole.
- Larvae emerge, pupate on ground, become adults
- The meat is edible – cut out affected part

Small Animal Bot Fly Eggs



Small Animal Bot Fly Larvae - “bots”



Small Animal Bot Fly Larvae - “bots”



Small Animal Bot Fly

Pupa

Adult



Deer bot fly



- PARASITE
- Cephenemyia aka deer nose bot, stagworm
- Adults inject larvae into nose of Roe & Red deer (May-Aug)
- Larvae crawl deep in nose/throat and develop for 9-10 months
- Larvae expelled from throat in spring; pupate on ground; become adults
- Signs – snorting, head shaking, coughing
- Meat is safe to eat

Deer bot fly



Adult



Larvae

Deer bot fly



Deer bot fly



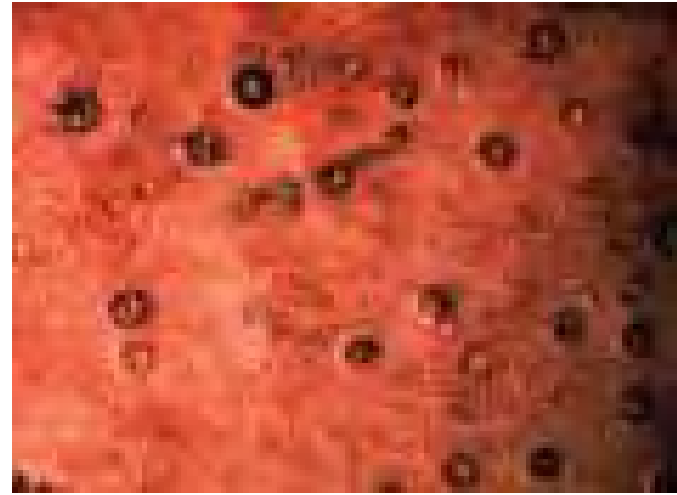
Warbles

- PARASITE
- aka heelflies, gadflies, cattle grubs
- Cattle and deer
- Fly life cycle – 1. egg 2. larvae 3. pupa 4. adults
- Adult flies glue eggs on leg hairs (Jul-Aug). Animal ingests eggs or larvae bore thru skin.
- Larvae travel to esophagus and/or spinal cord. Then larvae move to skin on back, form 2-3cm warbles (Feb-Apr). Warbles open a breathing hole in skin (May-Jun), then pupate on ground. They become adults in summer/early fall.
- Larvae emerge, pupate on ground, become adults
- Meat is edible – cut out affected part

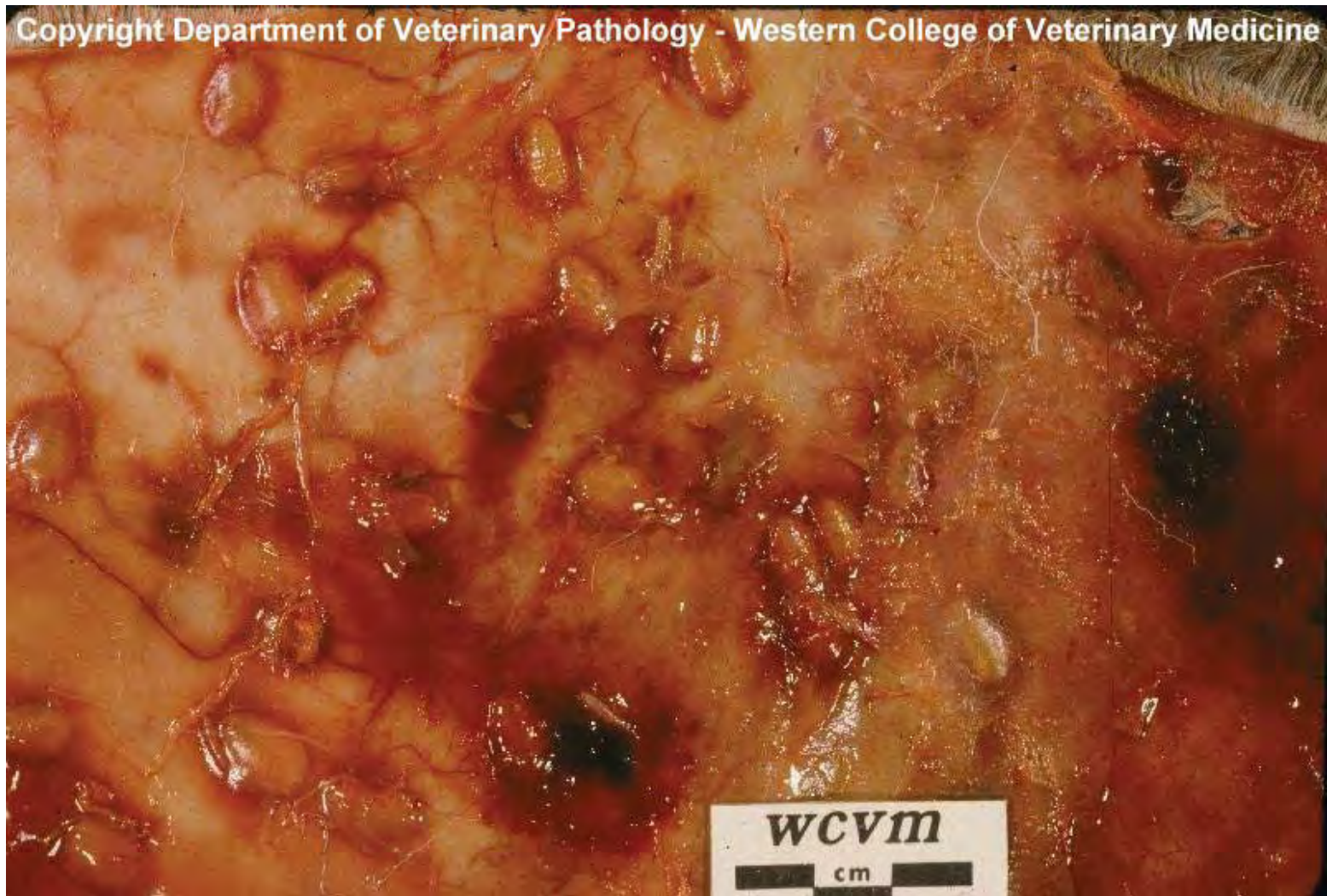
Warbles



Warbles



Warbles



Warble Fly

Pupa



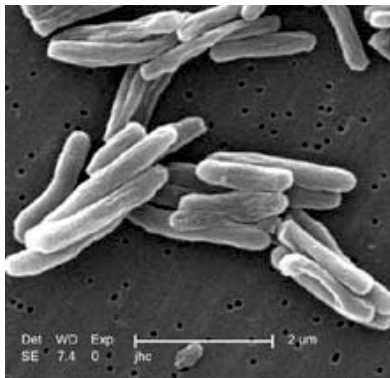
Adult



BACTERIA

Tuberculosis

- BACTERIA
 - **Mycobacterium bovis** - Deer, cattle, **Humans**
 - Mycobacterium tuberculosis - Humans
 - Mycobacterium avium - Birds
- Transmission – inhale or ingest infectious discharges



Tuberculosis

- Lesions in lungs and lymph nodes
- Prevention – wear gloves when handling dead animals – especially if carcass looks abnormal
- Zoonotic - DO NOT consume meat from an animal that shows signs of TB
- Report to authorities

Tuberculosis



Healthy lung

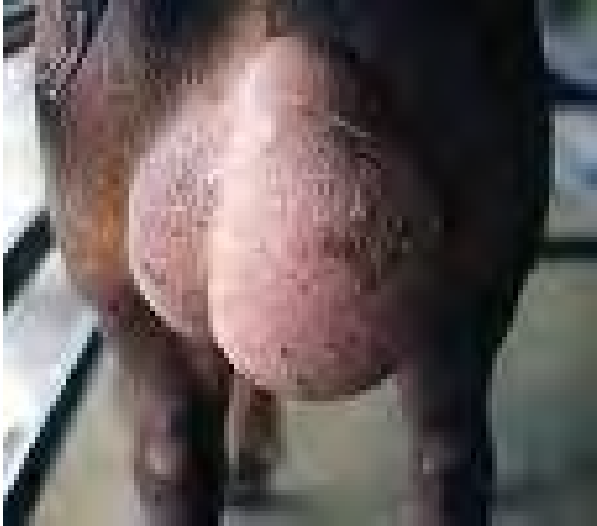


Lungs with tuberculosis

Brucellosis

- BACTERIA
 - *Brucella abortus* (cattle, large ruminants)
 - *Brucella melitensis* (sheep, goats)
 - *Brucella suis* (pigs)
- Zoonotic – all highly infectious in man (undulant fever, Bangs disease, Malta fever)
- Transmission – ingest or contact with blood and infected tissues (aborted fetuses, vaginal discharges, milk, colostrum, feces)

Brucellosis



Enlarged testicles



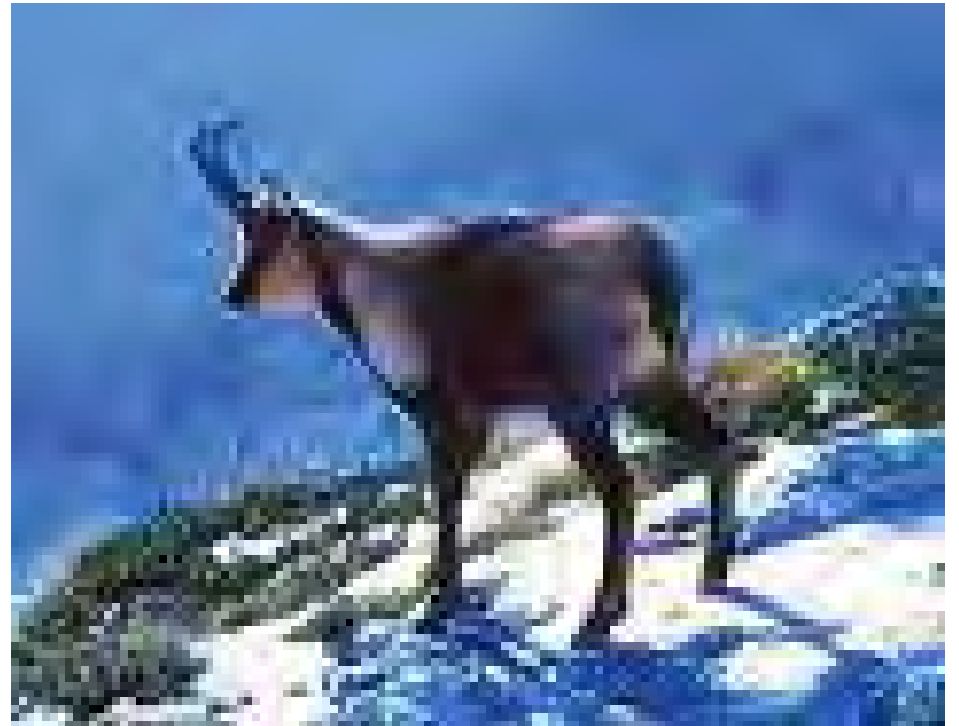
Aborted fetus

Brucellosis

- Prevention in humans
 - Wear gloves when handling carcasses and especially
if handling fetuses or afterbirth
 - Wash hands after handling animals
 - Cook all meat thoroughly
 - Drink only pasteurized milk
- Report to authorities

Chamois Blindness

- *Rupicapra rupicapra* aka chamois or gemse
- Goat like animal; lives in the alps



Chamois Blindness

- BACTERIA
 - *Mycoplasma conjunctivae*
- Infective keratoconjunctivitis aka “pink eye”
- Transmitted by physical contact and flies
- Severe outbreaks can occur
- See in summer and fall

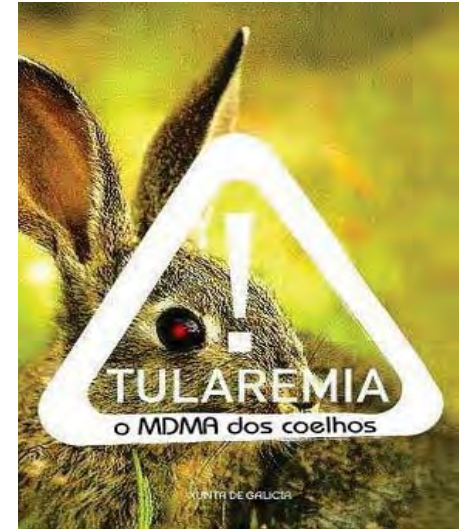


Chamois Blindness

- Spontaneous recover or death (30%)
- Can result in blindness, perforation of the cornea and death due to the disease itself, starvation or accidents due to blindness.
- Meat is safe to eat



Tularemia



- BACTERIA – *Francisella tularensis*
- AKA “Rabbit Fever”
- Transmission – contact with infected animal or by biting insects.
- Zoonotic
- Prevention
 - wear gloves while skinning and wet down fur
 - remove ticks as soon as possible
- Report to authorities

Tularemia

- Signs in rabbits – enlarged lymph nodes, skin abscesses, blood in lungs, liver and spleen, sudden death



Tularemia

- Signs in humans – fever, weakness, enlarged lymph nodes, skin infections, death is possible

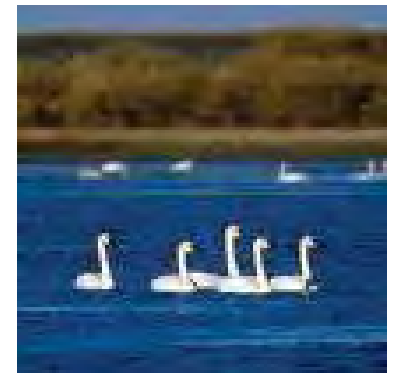
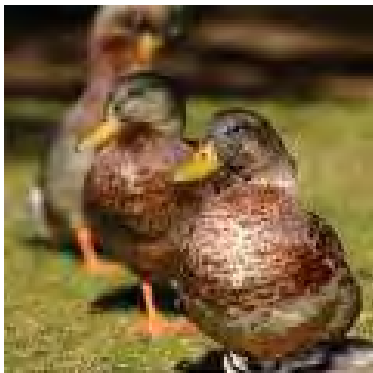


**VI
RUSES**

Avian Influenza



- VIRUS
- HPAI H5N1 – very bad strain of bird flu
- Transmitted
 - bird to bird by feces or nasal discharge
 - vectors (migratory birds, flies, vehicles)
- Zoonotic in a small number of cases



Avian Influenza

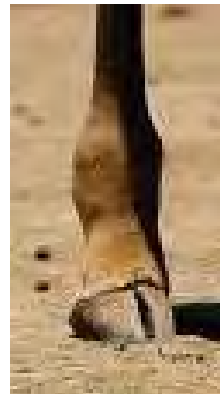


Avian Influenza

- Report dead waterfowl and birds of prey to authorities
- Cooking kills the virus, but Avian influenza positive meat is not eaten

Foot and Mouth Disease

- Aka Hoof and Mouth Disease
- Cloven hoof animals – “split toes”



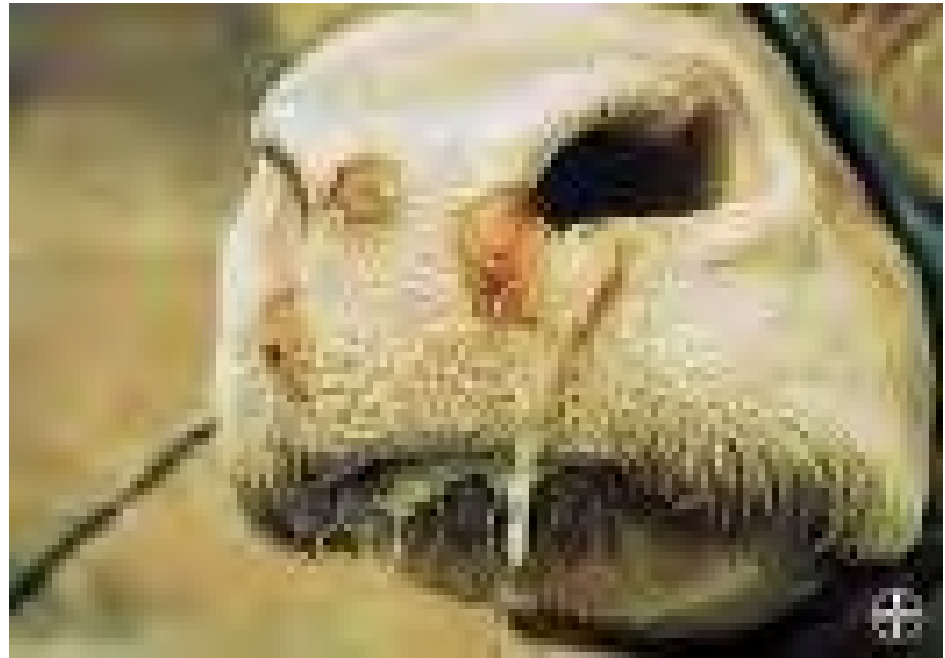
- Deer, swine, sheep, goats, cattle, moose, reindeer, gazelle, camels, buffalo, elephants, hedgehogs

Foot and Mouth Disease

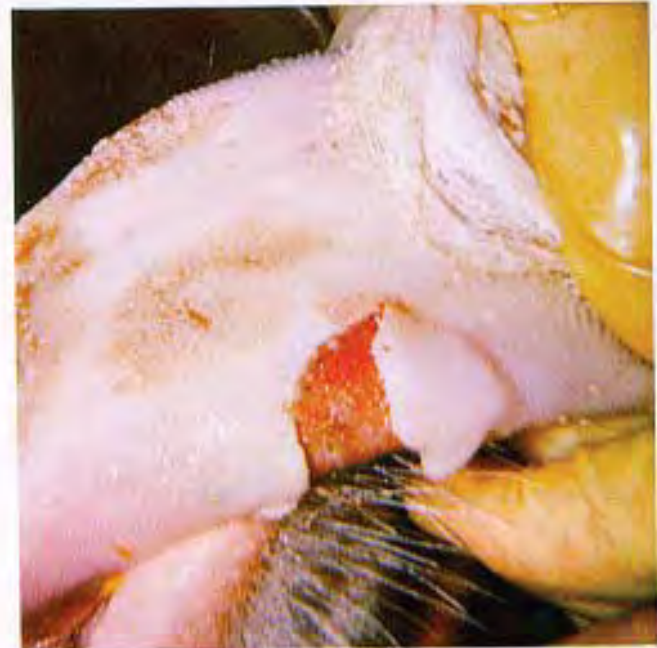
- VIRUS
- One of the most contagious diseases known
- Spread by aerosol, saliva, nasal discharge, blood, urine, feces, semen, infected animal byproducts (milk)
- Fever, lameness, and vesicles (mouth, teats, feet)
- Report to German authorities
- Meat is not eaten in positive cases



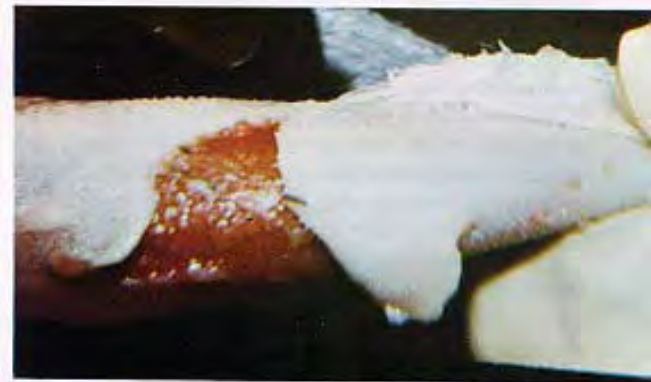
Foot and Mouth Disease



Foot and Mouth Disease



18 Ruptured vesicle on bovine tongue.



17 In some cases almost the entire epithelial surface of the tongue is detached.

Foot and Mouth Disease

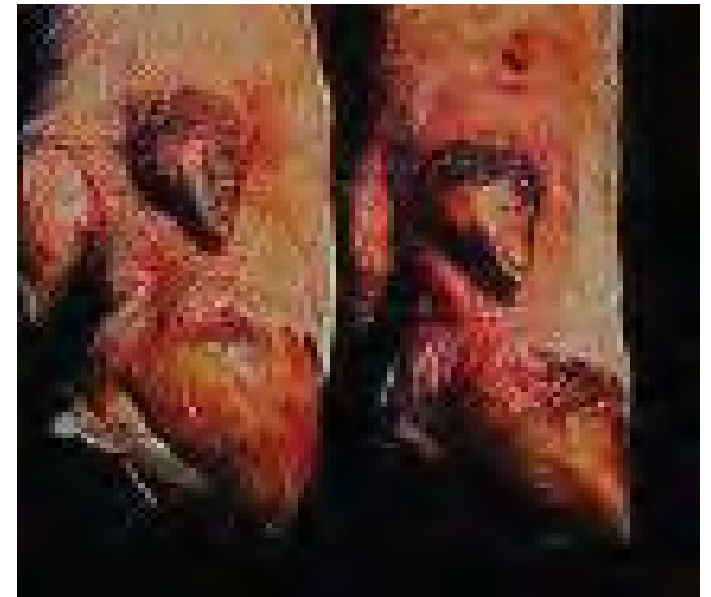
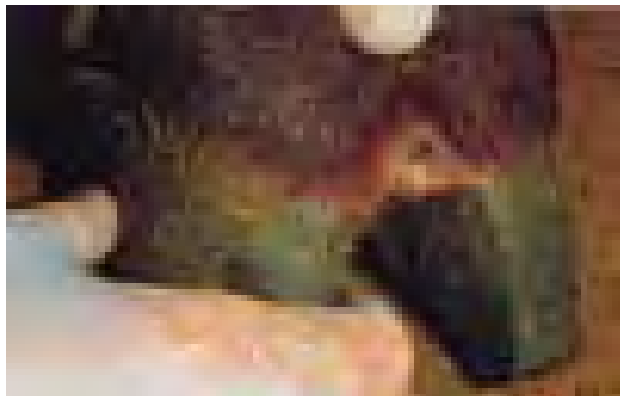
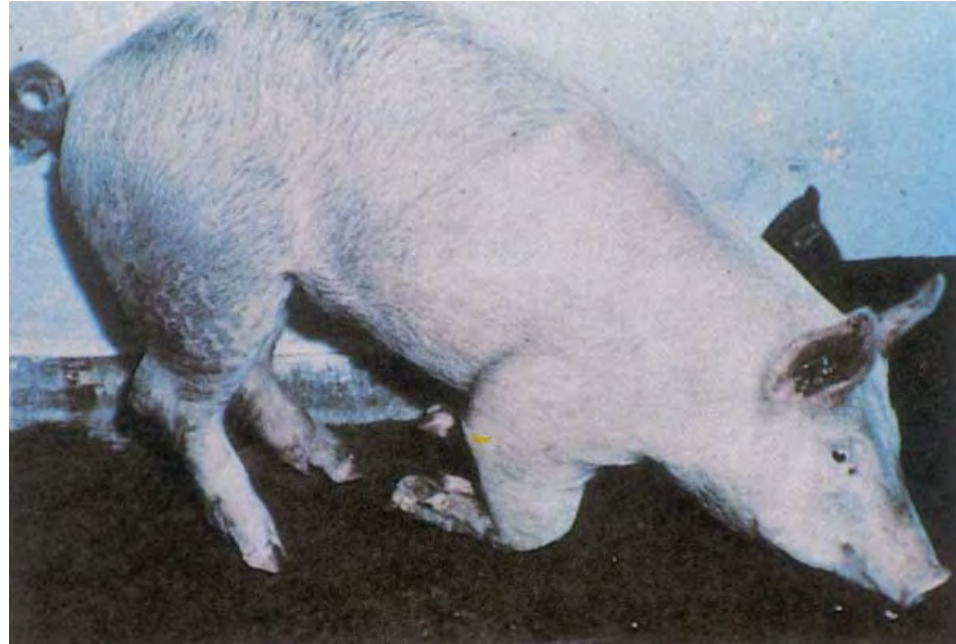


9 Vesicle at the end of the teats in a cow.

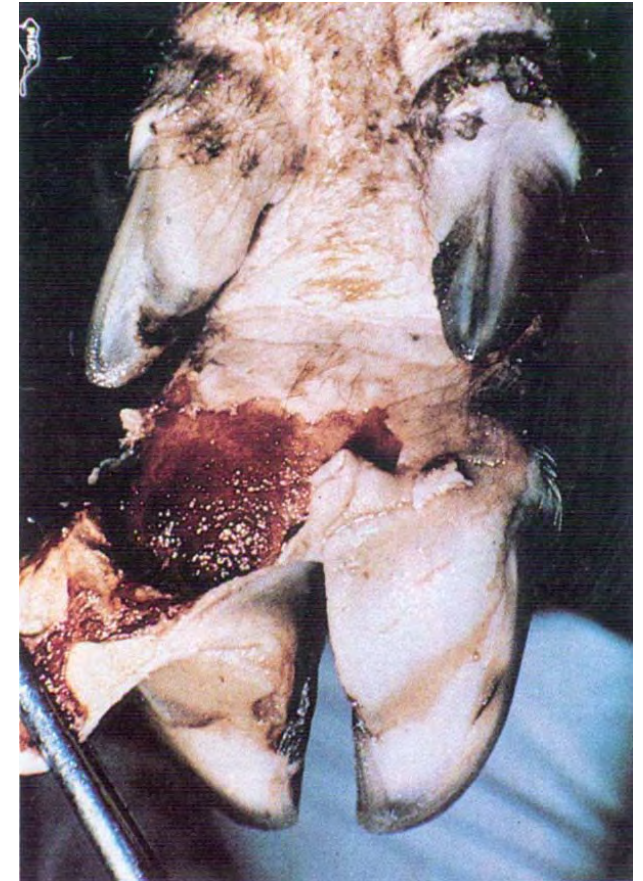
Foot and Mouth Disease



8 Vesicle in the interdigital space of a bovine.



Foot and Mouth Disease



Rabies

- VIRUS
- Fox, raccoons, skunks, and all warm blooded animals including man
- Zoonotic
- Transmission – saliva into open wound (bite)
- Neurologic signs due to encephalitis– furious and/or dumb form; paralysis; death
- Prevention – vaccinate animals; Caution if animal exhibits signs or if find dying or dead animal
- Report rabid animals to authorities
- Don't consume meat



Rabies



- Furious form
 - Attack themselves, others or snap at the air
 - Run around wildly
 - Paralysis; death



Rabies



- Dumb Form
 - Approach humans
 - Unable to drink and excessive saliva
 - Lick or eat strange things
 - Paralysis; death

Classical Swine Fever

- VIRUS
- aka - Hog Cholera
- Swine (wild boar)
- Transmission
 - Contact with infected pig
 - Eating food waste containing pork scraps
 - Carried (in air, rodents, insects, vehicles,
 - Vectors (rodents, flies, vehicles, people)



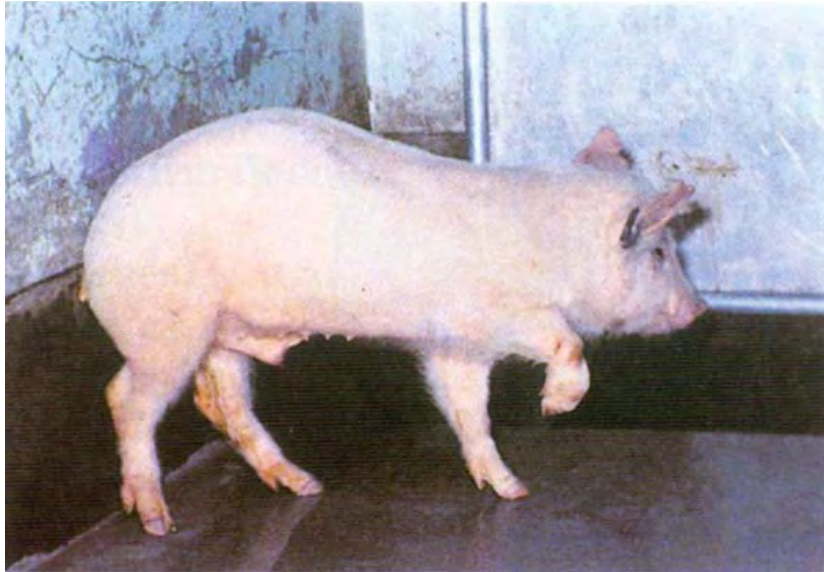
Classical Swine Fever

- Signs – depression, fever, huddling together, diarrhea or constipation, conjunctivitis, red skin, incoordination, goose stepping, paralysis, +/- death
- Incubation 2-14 days; signs vary with strain of virus and susceptibility of pig

Classical Swine Fever

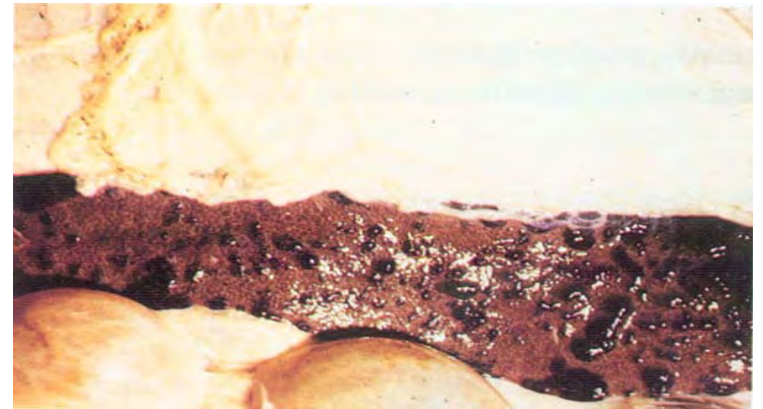
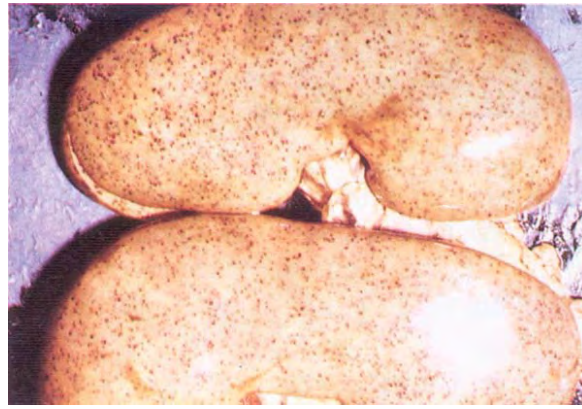


Classical Swine Fever



Classical Swine Fever

- Postmortem findings



Classical Swine Fever

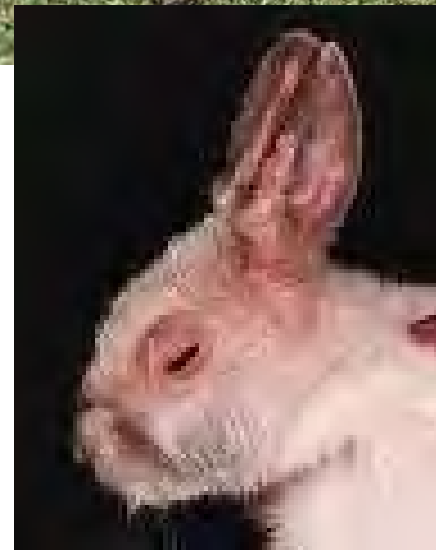
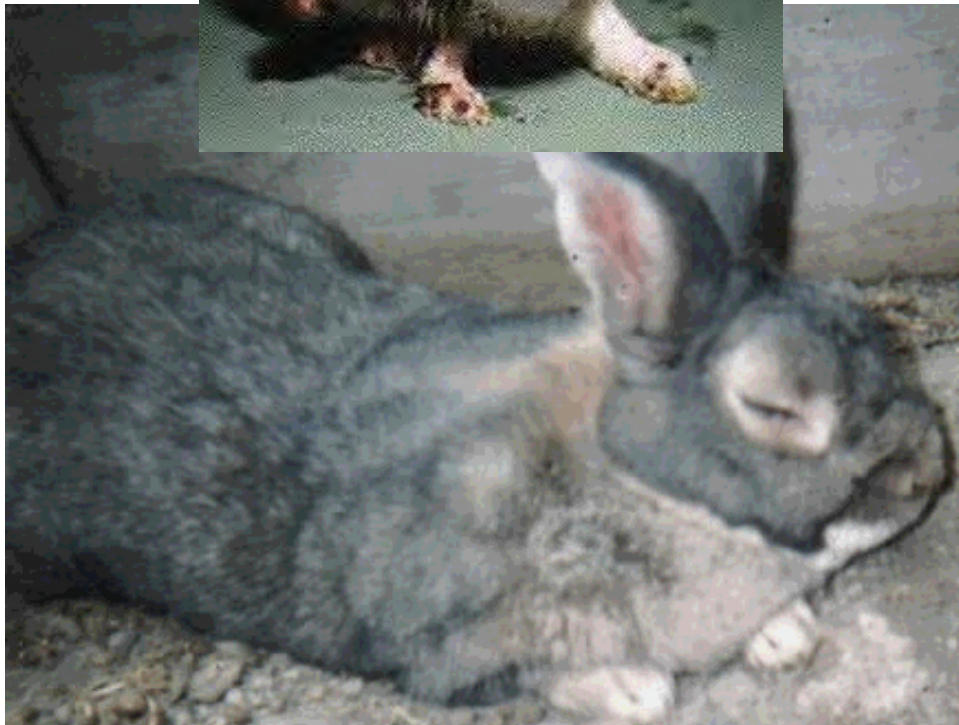
- Most of Europe is free of Swine Fever, however, foci of infection remain in Germany
- If suspect swine fever, kill animal and notify German veterinary authorities
- German veterinary authorities will quarantine the area, kill boar in area, test animals, negative animals will be used for human consumption and positives disposed of



Myxomatosis

- VIRUS
- Rabbits
- Signs – bumps on skin, swollen eyelids and head, conjunctivitis, death in 10-15 days
- Transmission – direct rabbit to rabbit contact and by the rabbit flea
- Prevention – proper disposal of ill and dead rabbits
- Meat is suitable for human consumption

Myxomatosis



General Zoonosis Prevention



- Look externally at animal and internally at organs for abnormalities

If in doubt – throw it out

- Wear gloves and don't eat, drink or smoke when handling dead animals
- Wash clothes and hands after hunting
- Check yourself for ticks
- Don't eat raw or undercooked meat
- Wash or cook wild berries and vegetables

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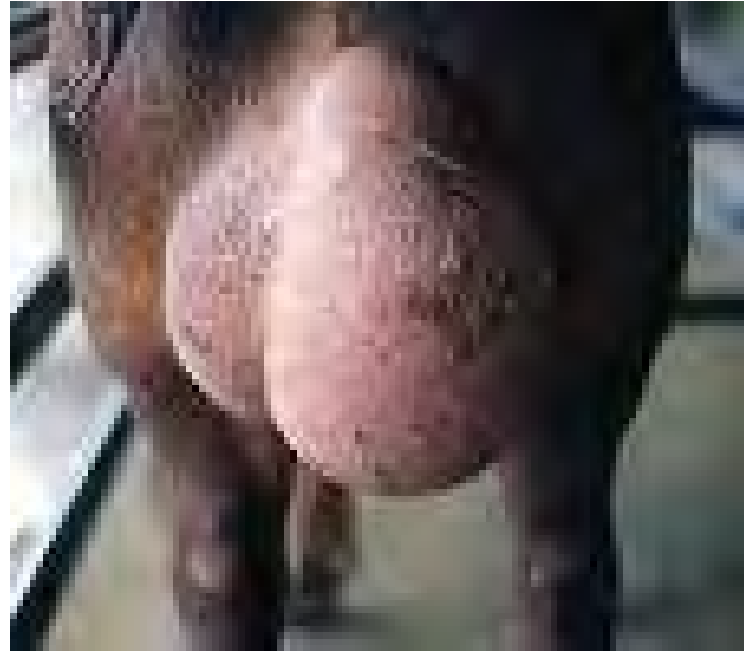
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