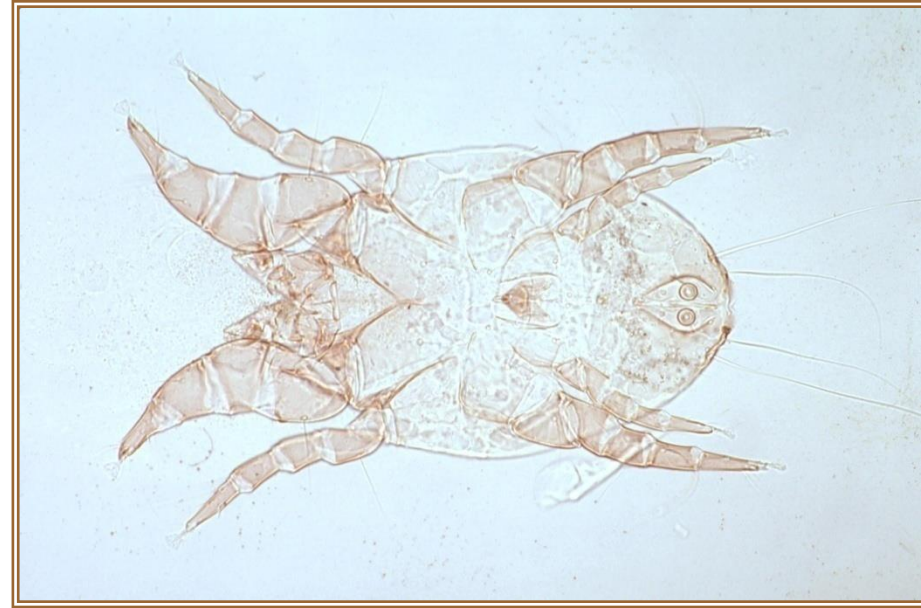


SCABIES



Introduction

- Common skin condition
- Noted for the “itch”
- Occurs worldwide > tropics
- Affect any age, gender, ethnicity, socioeconomic status

Agent

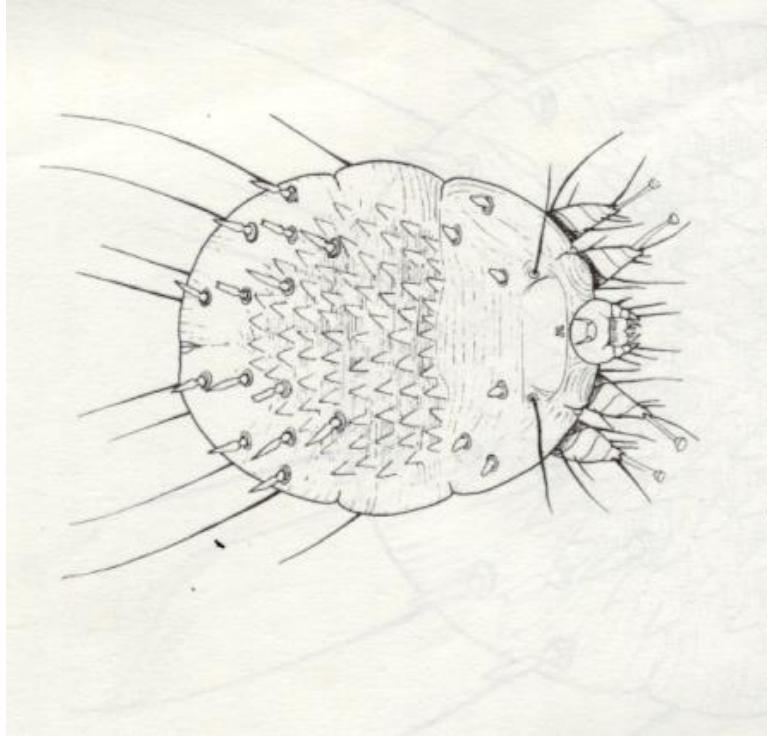
Sarcoptes scabiei “itch mite”

Obligatory parasite of man

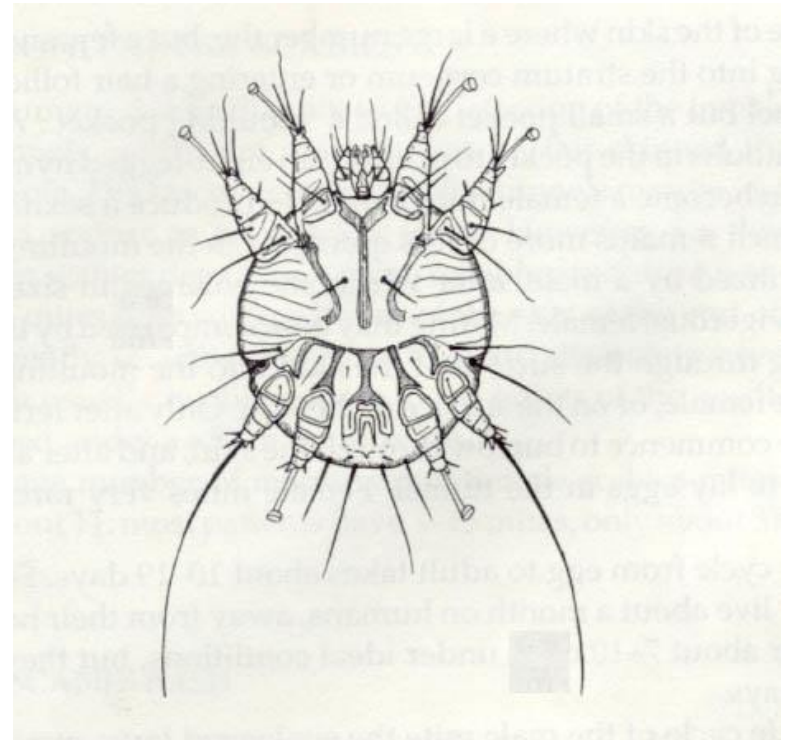
- Different biological forms in dogs, horses & other animals - but rarely infest humans

Morphology

- Female (0.3-0.4mm) just visible by naked eye
- Whitish disk shaped



Dorsal view - Female



Ventral view – Male (suckers on the fourth pair of legs)

- Many peg like projections on the dorsal surface
- Few bristles on the dorsal surface
- A series of cross lines on dorsal & ventral surfaces give a striated appearance
- Head not well developed. But mouth parts project from body

Life Cycle

Female mite selects places of the body where the skin is thin and wrinkled (between fingers, wrists, elbows, feet, penis, scrotum, buttocks and axillae etc)



Digs and eats her way into stratum corneum



proceeds in the skin as winding tunnels 1-5 mm per day



Tunnels seen in the skin as very thin twisting lines, a few mm to several cm long



feeds of oozing from dermal cells, lays eggs 1-3 per day, eggs hatch in 3-5 days.



Six legged larvae emerge, crawl on to the skin large no die, few burrow in to the stratum corneum. Other enter a hair-follicle to produce a moulting pocket



After 2-3 days larva becomes 8 legged nymph



nymph becomes adult



After an adult female is fertilized by a male, burrows in to stratum corneum, lay eggs in 3-5 days.

Egg → adult → 11-20 days

Female lives for 1-2 months.

May survive outside for 7-10 day under ideal condition. (usually 3-4 days).

Clinical presentation

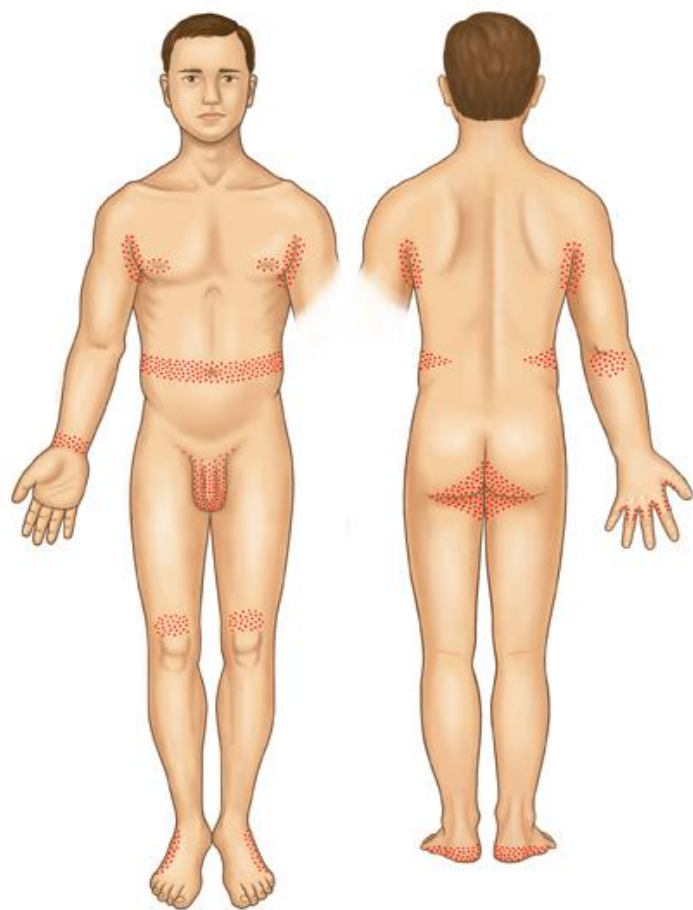
- Intense itching
- Rash -small reddish papules often excoriated, with scab formation and secondary infection
- Lesions representing mite burrows





Preferred sites

- Interdigital & popliteal folds, elbows, groin, etc.
- Infants & young children; palm, soles, wrists, ankles, face, scalp & trunk
- Men; penis & scrotum, buttocks, axillae etc.



Transmission

- Infection is spread mainly by the newly fertilized female on surface of skin
- Transmitted by close contact & contaminated fomites

“a family infection”

- Transmission facilitated by
 - overcrowding
 - inadequate water supply & poor hygiene
- Possible to get infected by sleeping in a bed formerly used by an infected person
- Incubation period – 6 - 8 weeks

Symptoms & Signs

- First stage; slightly raised, itchy papule at the site of each mite
- Scratching may destroy the mite & papule



Become a pustule

- Local sensitization followed by appearance of a rash with **nocturnal itching**

- Later; generalized rash - distribution does not correspond to the site of mite
- In this hypersensitivity stage, difficult to demonstrate mites
- Eruption occurs most commonly in axillae, around waist, inner thighs, back of legs etc.

Norwegian (crusted) scabies

- More serious but rare
- Dermatitis with scaling & crusting
- Thick crusts form on hands & feet
- Scaling eruptions over rest of the body
- Itching is minimal
- Occurs in immunodeficiency states & elderly
- Infested with thousands-millions of mites
- Highly contagious



Detection & identification of Scabies

- By detecting females in twisting tunnels
- Tunnels – readily seen in fair- skinned than dark skinned
- Pepper like spots in tunnels due to faeces

- Definitive diagnosis is by detection of mites/eggs in skin scrapings
- Surface layer of the skin at the end of the tunnel scratched away with a fine needle and mount on to a glass slide & examine under x40

Treatment & Control

- Curable
- * No resistant infection
- * Drugs Scabicides
- 2ry infection – antibiotics
- Health education
- Rx to contacts

Scabicides

- Numerous organic & inorganic compounds;
 - ❖ benzyl benzoate
25% Adults ,12.5% Children
 - ❖ 6% sulphur preparations (for infants)
 - ❖ 5% permethrin
 - ❖ 1% lindane solution (not for infants & pregnant women)
 - ❖ Norwegian scabies, 5% permethrin + ivermectin

- After a bath 20-25% BB emulsion can be painted neck down wards
- After 5-10 min. patient can re-dress ; second bath after 24 hrs.

Antihistamines/ topical 1% hydrocortisone cream

- Repeat treatment may be advisable
 - (1 week after)
- Important to treat whole family

Treatment of fomites

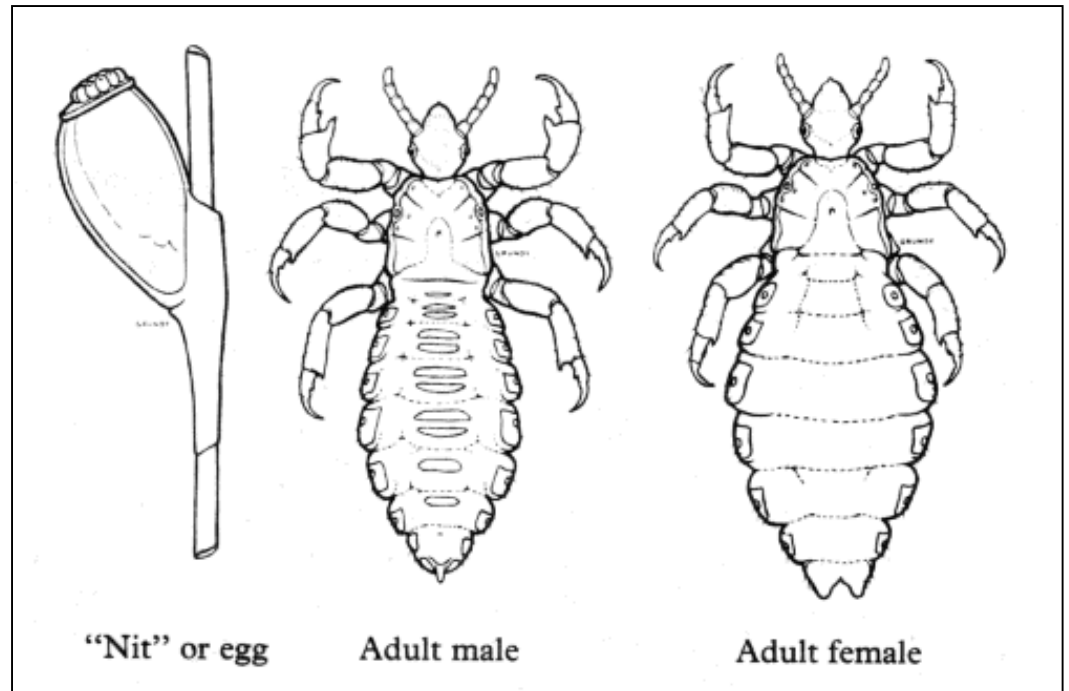
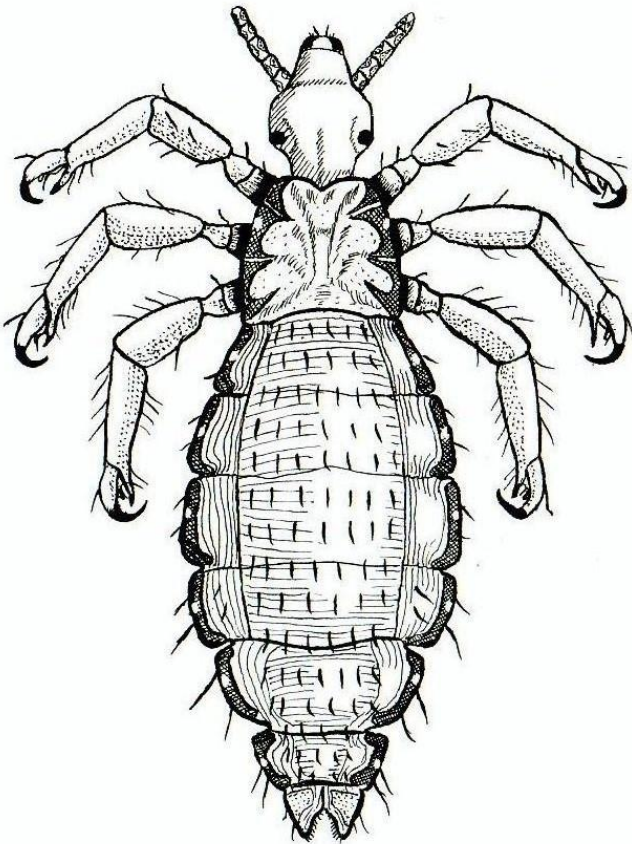
- **Wash clothes. Do all the laundry with the hottest water possible - 10 min. at 50°C can kill mites**
- Items may be dry-cleaned.
- Change the bedding or **keep bedding unused for 4 days**

Lice

- Obligatory ectoparasites
- Classification
 - Phylum- Arthropoda
 - Class- Insecta
 - Order – Anoplura
- Both sexes feed on blood
- Highly host specific

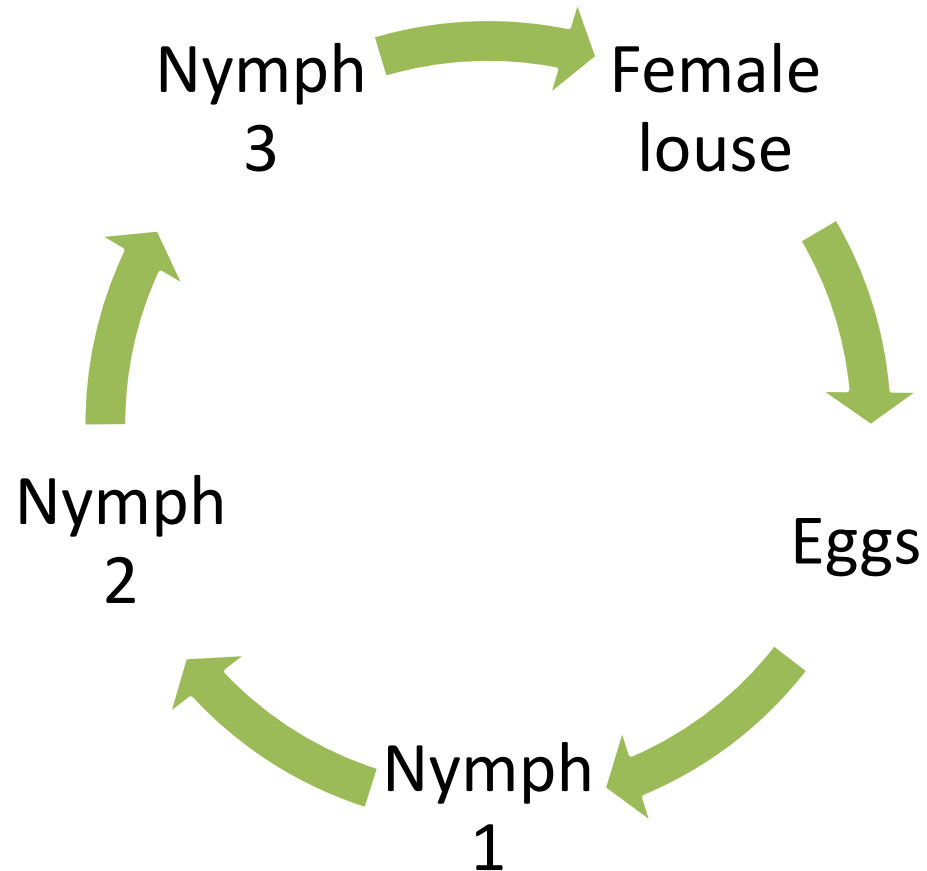
- Three varieties infect man
 - *Pediculus humanus capitis* (head louse)
 - *Pediculus humanus corporis* (body louse)
 - *Pthirus pubis* (crab /pubic louse)

Morphology of Head and Body Louse



- Head and body lice have identical morphology
- Small – 2-4mm
- Dorsoventrally flattened bodies
- Wingless with a leathery integument
- Mouth parts modified for piercing and sucking (tube like)
- Tip of abdomen rounded in males and bifurcated in females
- Three pairs of short legs adapted for clinging to hairs or fibers of clothing (terminal spine and claw)

Life cycle



- Nymphs resembles adults but smaller in size – incomplete metamorphosis
- Hemimetabolous life cycle



Pediculus humanus capitis
(head louse)

- Found only on hairs of the head
- Nits – cemented to base of hairs
- Transmission – by close contact, sharing of hair brushes, combs

Medical Importance

- Cause pediculosis – itching of scalp due to sensitization to louse saliva and enlargement of cervical and occipital lymph nodes
- Heavy infestation- secondary bacterial infection, lousy feeling
- Not known to transmit any parasitic or viral disease

Pediculus humanus corporis (body louse)

- Adult lives in clothing, and visit skin only to feed
- Common in cold climates where heavy clothing is worn and bathing is infrequent
- Transmitted by close contact or sharing of clothes
- Commonly found on people in jails, refugee camps, trenches during wars or after disasters

Medical Importance

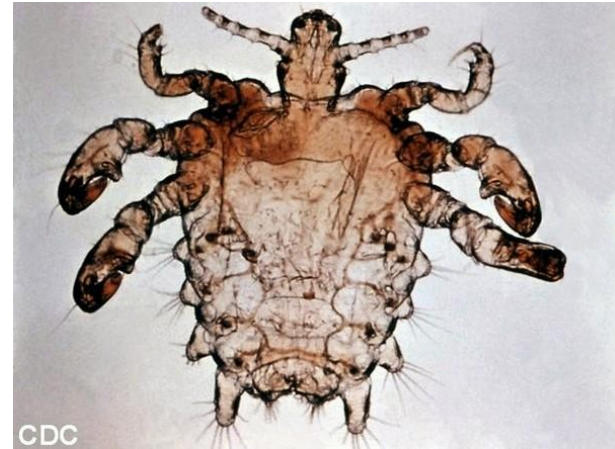
- Vector for
 - Epidemic typhus (*Rickettsia prowazekii*) – contamination of abrasions or mucous membranes with louse faeces
 - Trench fever (*Bartonella quintana*) – contamination of abrasions or mucous membranes with crushed louse or faeces
 - Louse borne epidemic relapsing fever (*Borrelia recurrentis*) – contamination of abrasions with a crushed louse

Medical Importance cont.

- Pruritus
- Vagabonds disease – pigmented tough skin in those harbouring large number of lice
- Allergy to louse faeces

Pthirus pubis (pubic louse)

- Smaller than *Pediculus* (upto 2mm)
- Less differentiation between thorax and abdomen
- Body is nearly as broad as long
- Second & 3rd pairs of legs enlarged (crab like appearance)



- Prefer widely spaced, coarse hairs
- Found on pubic hair, eyebrow, eyelashes
- Transmission by sexual contact, infected fomites
- No disease transmission
- Allergic reaction in sensitized individuals

Treatment

- Head & pubic lice
 - Application of lotions containing insecticides –
1% permethrin, 0.5% malathion, 2% propoxur
 - Removal of nits with a nit comb
 - Whole family should be treated

Treatment cont.

- Body louse
 - Changing & washing clothes in hot water (> 60 °C), ironing
 - Application of insecticidal powders to body and clothes

Summary

- Lice are obligatory ecto-parasites
- Life cycle- hemimetabolus
- Body louse transmit, epidemic typhus, epidemic relapsing fever & trench fever
- Control- Insecticides