Psocoptera

- Primitive hemipteroid order
- 5 500 species
- 1-10 mm
- Feed on fungi, lichens, algae, organic detritus
- Chewing mouth organs
- Winged or wingless,often syanthropic
- Paurometaboly
- Serious pests in grain stores

Heteroptera – true bugs

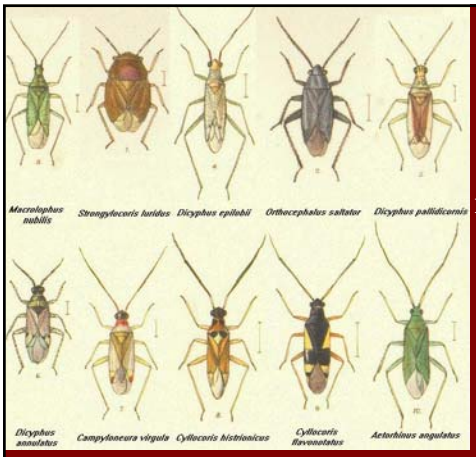
- Largerst hemipteran group with 40 000 species
- Fore wings – hemielytra – part hardened without veins hind part membraneous
- Piercing mouthparts

Gerromorpha

Nepomorpha

Cimicomorpha

Reduviidae



Miridae

cCimicidae

Auchenorrhyncha

- Oder or suborder within Hemiptera
- About 35 000 species
- Piercing mouthparts
- Short antennae
- Three segmented tarsi (2 in Sternorrhyncha)

Sternorrhyncha

- Order or suborder of hemiptera
- 2 segmented tarsi, wings often absent or reduced venation
- Rearword position of head
- About 12 000 species

Aleyrodomorpha

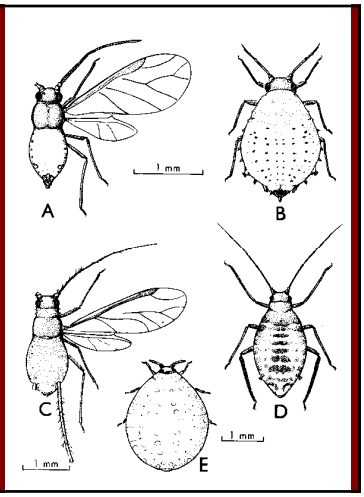
1 200 species
Reduced wing venation
Body covered with vax incl. Eyes
Many pests
neometaboly

Aphidomorpha

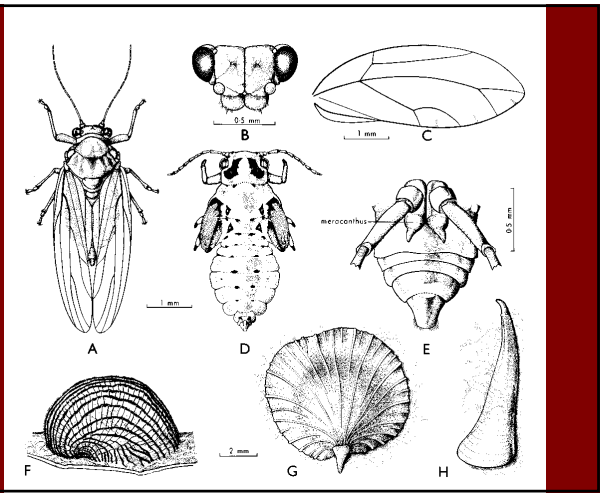
4 400 species known worldwide
Among the most destructive pests of cultivated plants in temperate regions (much smaller amount of species in tropics)
Natural enemies (bioregulators): Cocinellidae, Neuroptera, Syrphidae
Soft body, piercing proboscis, 2-6 segmented antennae, cauda, siphunculi
Honeydew production (excess water and sugars)
feed on sap of phloem
transmit viruses

Aphid-plant mutualism (in tropics scale insects-ants)

Complex and complicated reproduction: most having both sexual and asexual reproduction, switches between tree and herb host plants, ovipary x vivipary



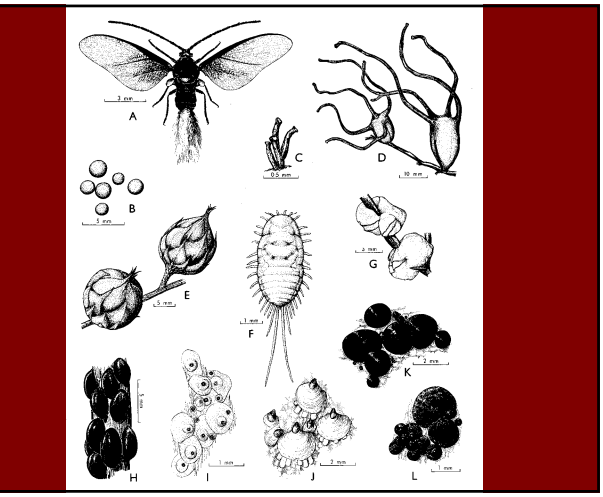
Psyllomorpha
1 500 species
1-6 mm, herbivors – most species monophagous (specialists)
Paurometaboly (5 nymphal instars)
Serious pests of apple and pear orchards



Coccomopha (scale insects)

8 000 species, most are parasites of plants, feeding on sap drawn directly from the plant's vascular system, many are serious pests, females are neotenic (immature character at sexual maturity), variable appearance – some move with legs, most females are motionless under waxy secretions, males winged

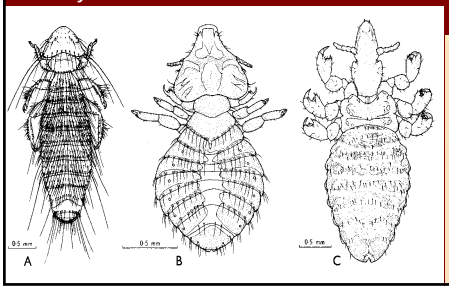
Quadriaspidiotus perniciosus



Phthiraptera

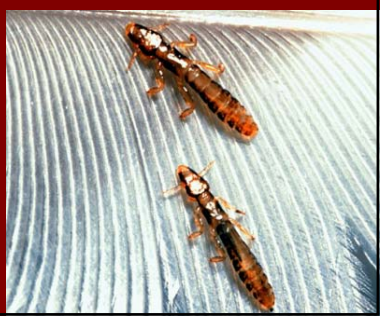
3 000 species of obligate wingless ectoparasites of birds and mammals

Spend alllives on host body adaptations to attach host: small body (0.5-8mm), stout legs with large claws, dorsoventrally flattened, small eyes or absent



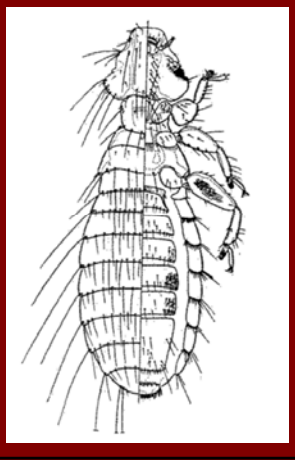
Ischnocera

Parasites of mainly birds, some mammals, chewing mouthparts, vertical articulation of mandibles, Their food includes feathers, skin, sebaceous exudates, and blood; and some species are known to eat other lice, although these are probably not an important part of their diet. There are 120 genera, with about 1800 species.



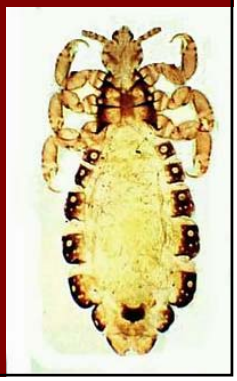
Amblycera

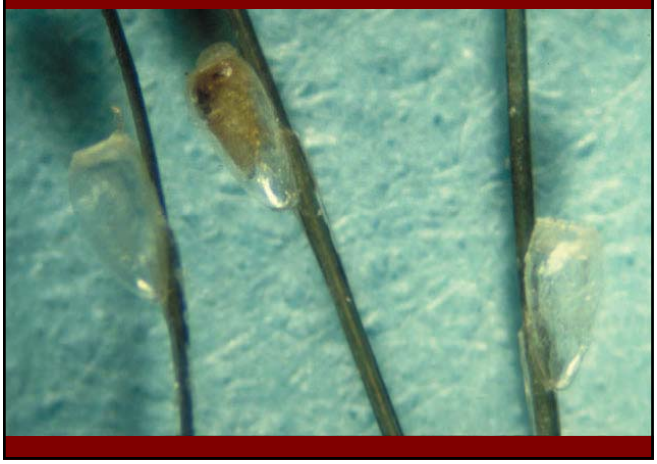
Suborder characterized by the pedunculate first flagellomere of the antenna, the groove of the head which conceals the antenna when at rest, the horizontal articulation of the mandibles, and the presence of maxillary palps. Three of the constituent families parasitize only mammals, three only birds, and one parasitizes members of both classes. The lice eat feathers, skin, sebaceous exudates, or blood. Species in one genus, *Trochiloecetes*, have the mouth-parts modified as piercing stylets (analogous to those of Anoplura) and feed on the blood of their humming-bird hosts. There are 75 genera, and about 850 species.

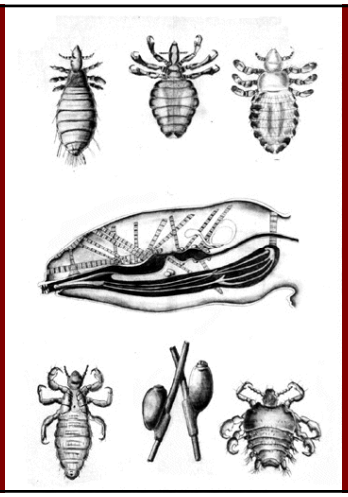


Anoplura

around 500 species
blood-feeding ectoparasites of mammals
can cause localised skin irritations and are vectors of several blood-borne diseases.
Children appear particularly susceptible to attracting lice, possibly due to their fine hair.
At least three species of Anoplura are parasites of humans: *Pediculus humanus* is divided into two subspecies, *Pediculus humanus humanus* laying eggs in the seams of clothing, and *Pediculus humanus capitis*, or the head louse. *Phthirus pubis* (the pubic louse) is the cause of the condition known as crabs.







Thysanoptera - thrips

5 000 species, small (0,5-14 mm) slender bodies, fringed wings, piercing mouthparts (asymmetrical), feed on plants (many are serious pests) or fungi, predators suck on eggs, mites, etc., metamorphosis – neometaboly (2-3 pseudopupal stages)