(حشرات طبية وأمراض حشرات)

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(الجزء العملي)

الفصل الدراسي الثاني

إعداد

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كلية العلوم

قسم علم الحيوان

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رؤية كلية العلوم

التميز في تعليم العلوم الاساسية والبحث العلمي للمساهمة في التنمية المستدامة

رسالة كلية العلوم

تقديم تعليم مميز في مجالات العلوم الاساسية وانتاج بحوث تعليمية تطبيقية للمساهمة في التنمية المستدامة من خلال اعداد خريجين متميزين طبقاً للمعاير الاكاديمية القومية وتطوير مهارات وقدرات الموارد البشرية وتوفير خدمات مجتمعية وبيئية تلبي طموحات مجتمع جنوب الوادي وبناء الشراكات المجتمعية الفاعلة .

رؤية القسم

خريجون وباحثون متميزون علمياً وبحثياً في دراسة ضرر ونفع الكائنات الحيوانية خدمة للمجتمع وتنمية للبيئة

رسالة القسم

يسعى قسم علم الحيوان والحشرات بكلية العلوم جامعة جنوب الوادي من خلال ما يقدمة من برامج تعليمية باستخدام الوسائل العلمية والتعليمية المتطورة والتي تكشف عن المزيد من ضرر ونفع الكائنات الحية وباحثين وخريجون متميزين علمياً وبحثياً ينتفع بهم المجتمع وترتقي بهم الامة .

Medical Entomology Practical

Culex sp.

1- Taxonomical position:

Kingdom : Animalia

Phylum : Arthropoda

Class : Insecta

Subclass : Pterygota

Division : Endopterygota

Order : Diptera

Family : Culicidae

e.g. : Culex sp.

2- Morphological identification

3- Habitat and location:

-They occur worldwide except for the extreme northern parts of the temperate zone.

-Eggs hatch only in the presence of water.

-Larvae and pupae are obligately aquatic, larvae are found in fresh ground water inciude rice field stream pools springs ponds

-Both males and females feed on various sugar sources, such as nectar.

-Only females feed on blood, blood provides proteins essential to the development of their eggs.

4- Disease:

Filariasis, Urticaria, Japanese encephalitis, West Nile Virus and avian malaria

5- Causative agent of the disease (pathogen):

Wuchereria bancrofti, Arbovirus and plasmodium sp.

6- Host: Birds, humans and other animals.

7- Mode of transmission:

Biological

Cyclodevelopmental, Propagative and Cyclopropagative.

Haemagogus sp.

1- Taxonomical position:

Class : Insecta
Subclass : Pterygota
Division : Endopterygota
Order : Diptera
Family : Culicidae
e.g. : Haemagogus sp.

2- Morphological identification

3- Habitat and location

-Live in central American and northern south American

-They tend to live in the canopy of forests where the female lays eggs in between layers of tree bark or in cut bamboo.

-The eggs adhere to the surface and when submerged by rain water develop into larvae.

4- Disease: Yellow Fever Virus

5- Causative agent of the disease (pathogen):

Virus

6- Host: Monkeys

7- Mode of transmission

Biological

Propagative

<u>Anopheles</u> sp.

1- Taxonomical position:

Class : Insecta

Subclass : Pterygota

Division : Endopterygota

Order : Diptera

Family : Culicidae

e.g. : <u>Anopheles</u> sp.

2- Morphological identification

3- Habitat and location

-Most notoriously the regions of sub-Saharan Africa, live in colder latitudes.

-Eggs hatch only in the presence of water.

-larvae and pupae are obligately aquatic.

-Both males and females feed on various sugar sources, such as nectar.

-Only females feed on blood, blood provides proteins essential to the development of their eggs.

4- Disease

Human malaria

5- Causative agent of the disease (pathogen):

Plasmodium malariae, Plasmodium ovale, Plasmodium vivax and Plasmodium falciparum

6- Host: Human

7- Mode of transmission

Biological

Cyclopropagative

Aedes sp.

1- Taxonomical position:

Class : Insecta

Subclass : Pterygota

Division : Endopterygota

Order : Diptera

Family : Culicidae

e.g. : Aedes sp.

2- Morphological identification

3- Habitat and location

-Originally found in tropical and subtropical zones, but now found on all continents except Antarctica.

-Eggs hatch only in the presence of water.

-larvae and pupae are obligately aquatic.

-Both males and females feed on various sugar sources, such as nectar.

-Only females feed on blood, blood provides proteins essential to the development of their eggs.

4- Disease:

Dengue fever, yellow fever, the Zika virus, West Nile fever and chikungunya and human lymphatic filariasis.

5- Causative agent of the disease (pathogen):

Viruses and Wuchereria bancrofti

6- Host: Human

7- Mode of transmission

Biological

Propagative and Cyclodevelopmental

<u>Mansonia</u> sp.

1- Taxonomical position:

Class : Insecta

Subclass : Pterygota

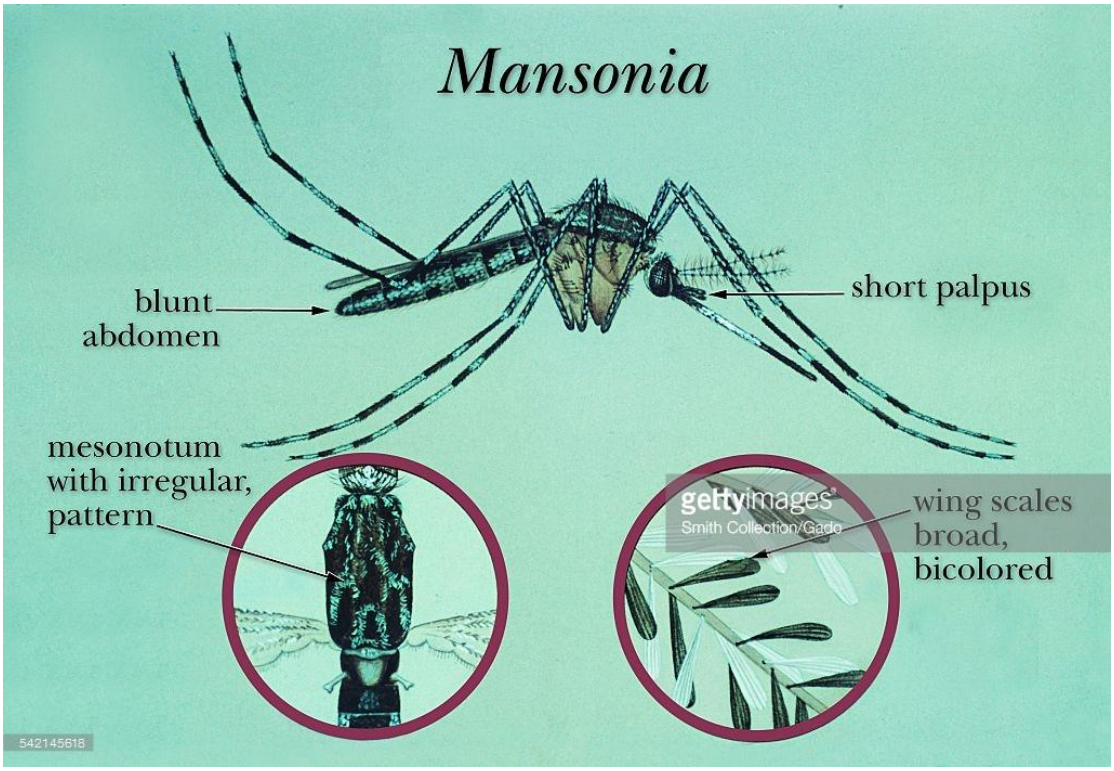
Division : Endopterygota

Order : Diptera

Family : Culicidae

e.g. : <u>Mansonia</u> sp.

2- Morphological identification



3- Habitat and location:

-They breed in ponds and lakes containing certain aquatic plants.

-The eggs are laid in star-shaped clusters on the undersurface of leaves of these plants.

-The larvae and pupae are found attached to the rootlets of these plants by their siphon tubes. They obtain their air supply from these rootlets.

-When about to become adult, these pupae come to the surface of water and the fully formed adults emerge and escape.

4- Disease:

Rift Valley fever virus

5- Causative agent of the disease (pathogen):

Virus

6- Host: Human

7- Mode of transmission:

Biological

Propagative

Sabethes sp.

1- Taxonomical position:

Class : Insecta

Subclass : Pterygota

Division : Endopterygota

Order : Diptera

Family : Culicidae

e.g. : Sabethes sp.

2- Morphological identification

3- Habitat and location:

-Central and South America.

-Larvae and pupae in tree holes and forest environments.

4- Disease:

Encephalitis virus and Yellow Fever Virus

5- Causative agent of the disease (pathogen):

Viruses

6- Host: Human and monkey

7- Mode of transmission:

Biological

Propagative

Coquillettidia sp.

1- Taxonomical position:

Class : Insecta

Subclass : Pterygota

Division : Endopterygota

Order : Diptera

Family : Culicidae

e.g. : Coquillettidia perturbans

2- Morphological identification

3- Habitat and location

-Africa, Asia, Australia, Europe, North America, and South America.

-Most commonly found in areas of low elevation and high vegetation that have warm summers and a high degree of humidity in the air.

-Lay their eggs in the form of an egg raft in a marsh or swamp habitat.

-The larvae and pupae are adapted with an abdominal segment capable of piercing the inner gaseous tissue of the aquatic plant, being located near the surface of the water.

4- Disease:

and Eastern equine encephalomyelitisWest Nile virus

5- Causative agent of the disease (pathogen):

Viruses

6- Host:

, horses and resident birdshumans

7- Mode of transmission:

Biological

Propagative

Cimex lectularis

(Bed bug)

1- Taxonomical position:

Class : Insecta

Subclass : Petrygota

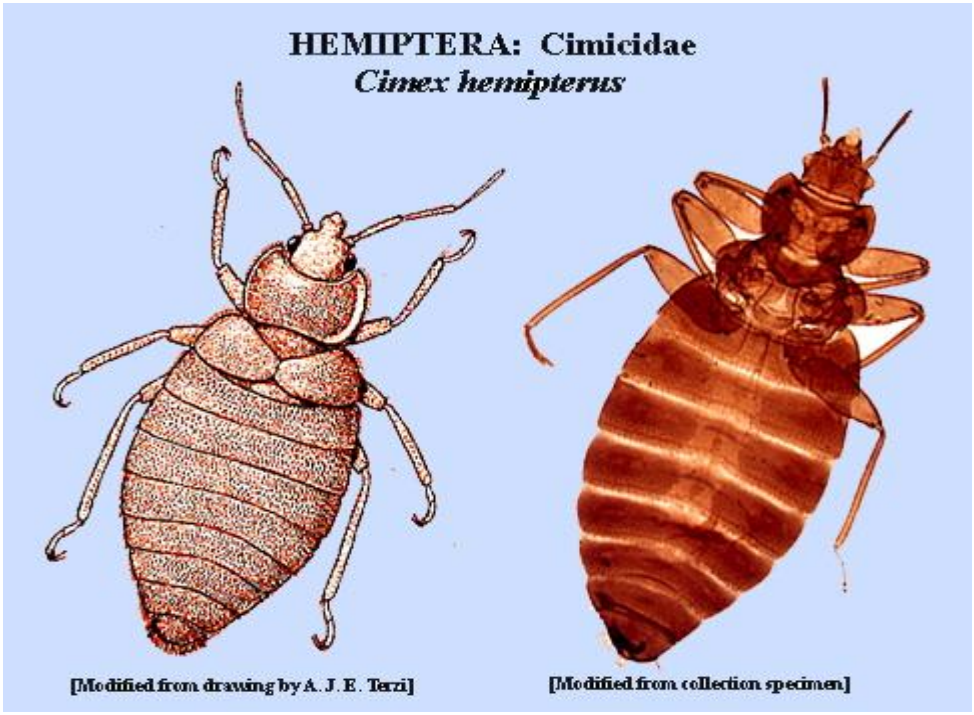
Division : Exopetrygota

Order : Hemiptera

Family : Cimicidae

e.g. : Cimex lectularius

2- Morphological identification



3- Habitat and location:

-Bed bugs are found in most tropical regions.

-They live in warm houses, especially near beds and feed on human blood.

4- Disease:

Skin rashes, psychological effects, allergic symptoms, anemia, Plague (Yersimia pestis), anthrax (Bacillus anthracis) and Hepatitis B Virus

5- Causative agent of the disease (pathogen):

Bed bugs,

Bacteria : Yersimia pestis, Bacillus anthracis

Virus: Hepatitis B virus

6- Host: Human (man)

7- Mode of transmission:

Direct by insect biting

Biological

Propagative

Triatoma infestans

(Kissing bug)

1- Taxonomical position:

Class : Insecta

Subclass : pterygota

Division : Exopterygota

Order : Hemiptera

Family :Cimicidae

e.g. : Tritoma infestans

2- Morphological identification

3- Habitat and location:

-Widespread in the Southern Cone countries of South America.

-Live in human dwelling and peridomestic habitate like chichen coop and goat corrals.

4- Disease:

Chagas disease

5- Causative agent of the disease (pathogen):

Trypanosome cruzi

6- Host: Human

7- Mode of transmission:

Biological

Cyclopropagative

Trichodectes canis

(Canine chewing louse)

1- Taxonomical position:

Class : Insecta

Subclass : Pterygota

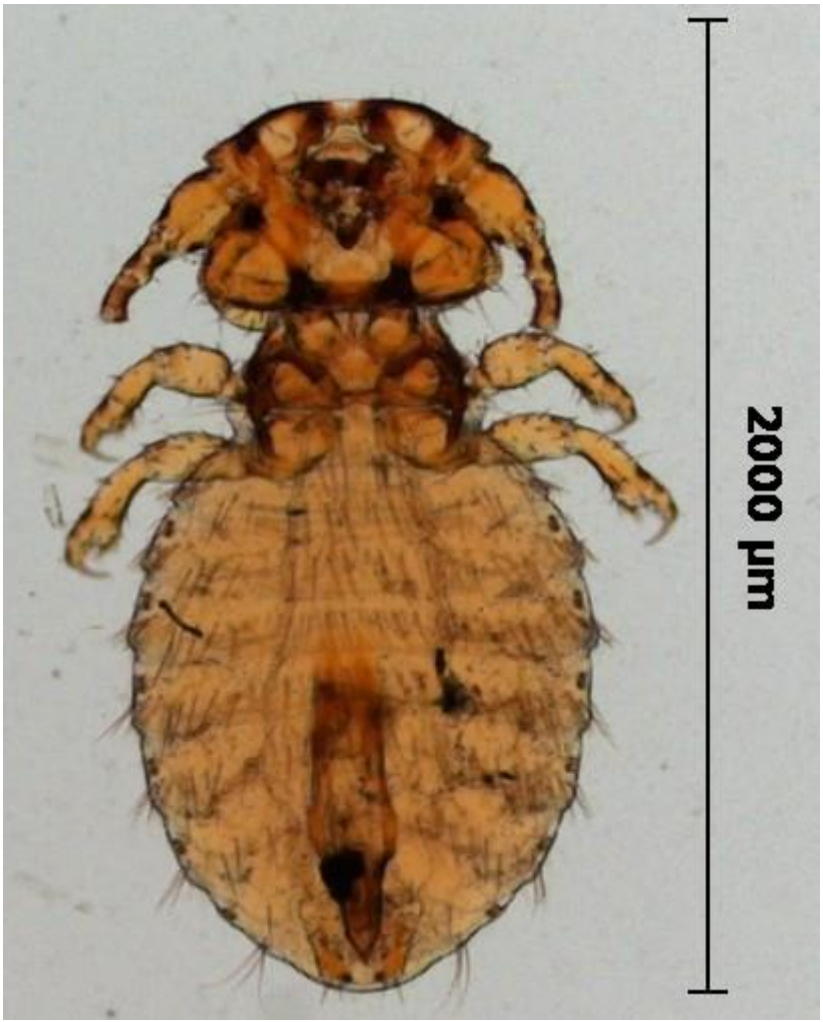
Division : Exopterygota

Order : Phthiraptera

Family : Trichodectidae

e.g. : Trichodectes canis

2- Morphological identification



3- Habitat and location:

-Known for their ability to tolerate extremes in temperature, are found in many different regions worldwide.

-Found on domesticated dogs and wild canines throughout the world and gray wolves in canada

4- Disease:

-Irritation

-Stress by creating wounds on the surface of the hosts' skin.

-Intermediate host for canine tapeworm

5- Causative agent of the disease (pathogen):

Canine chewing louse and canine tapeworm

6- Host: Dogs

7- Mode of transmission:

Direct by the insect biting

Biological

Cyclodevelopmental

Pediculus humanus corporis

1- Taxonomical position:

Class : Insecta

Subclass : Pterygota

Division : Exopterygota

Order : Anoplura

Family : Pediculidae

e.g. : Pediculus humanus corporis

2- Morphological identification

3- Habitat and location:

-Worldwide distributed but often more common in temperate areas.

-Live attached to clothes and attach their eggs to the base of hairs

4- Disease:

Pediculosis, Epidemic typhus, Trench fever and Relapsing fever

5- Causative agent of the disease (pathogen):

Bacteria

6- Host: Human

7- Mode of transmission:

Biological

Propagative

Pediculus humanus capitis

1- Taxonomical position:

Class : Insecta

Subclass : Pterygota

Division : Exopterygota

Order : Anoplura

Family : Pediculidae

e.g. : Pediculus humanus corporis

2- Morphological identification

3- Habitat and location

-Spending their entire life on the human scalp and feeding exclusively on human blood

4- Disease

- There is no evidence that this lice are transmitting diseases to human
- Some times can be a transmitter of:

1-Rickettsia

2-Spirochaetes

3-Impetigo

5- Causative agent of the disease (pathogen):

Bacteria

1-Rickettsia

2-Spirochaetes

3-Impetigo

6- Host: Human

7- Mode of transmission

Biological

Propagative

Phthirus pubis

1- Taxonomical position:

Class : Insecta

Subclass : Pterygota

Division : Exopterygota

Order : Anoplura

Family : Pediculidae

e.g. : Phthirus pubis

2- Morphological identification

3- Habitat and location

-It infests the pubic regions and armpits and more rarely other parts of the body such as the mustache, beard, eyelashes, and eyebrows.

-Stationary in their habits.

-Remaining attached for days at one point with mouth parts inserted into the skin.

4- Disease

-Allergic reaction due to their bites, blue spots may appear on the infested parts of the body.

-Louse porn typhus.

5- Causative agent of the disease (pathogen):

Phthirus pubis and Bacteria

6- Host: Human

7- Mode of transmission

Direct by the insect biting

Biological

Propagative

Haematopinus tuberculatus

1- Taxonomical position:

Class : Insecta

Subclass : Pterygota

Division : Exopterygota

Order : Anoplura

Family : Haematopinidae

e.g. : Haematopinus tuberculatus

2- Morphological identification

3- Habitat and location:

-Live ectoparasitic on domestic animals

4- Disease:

Weight loss, anaemia and milk production reduced

5- Causative agent of the disease (pathogen):

Haematopinus tuberculatus

6- Host: Domestic animals

7- Mode of transmission

Direct by the insect biting

Pulex irritance

(Human flea)

1- Taxonomical position:

Class : Insecta

Subclass : Pterygota

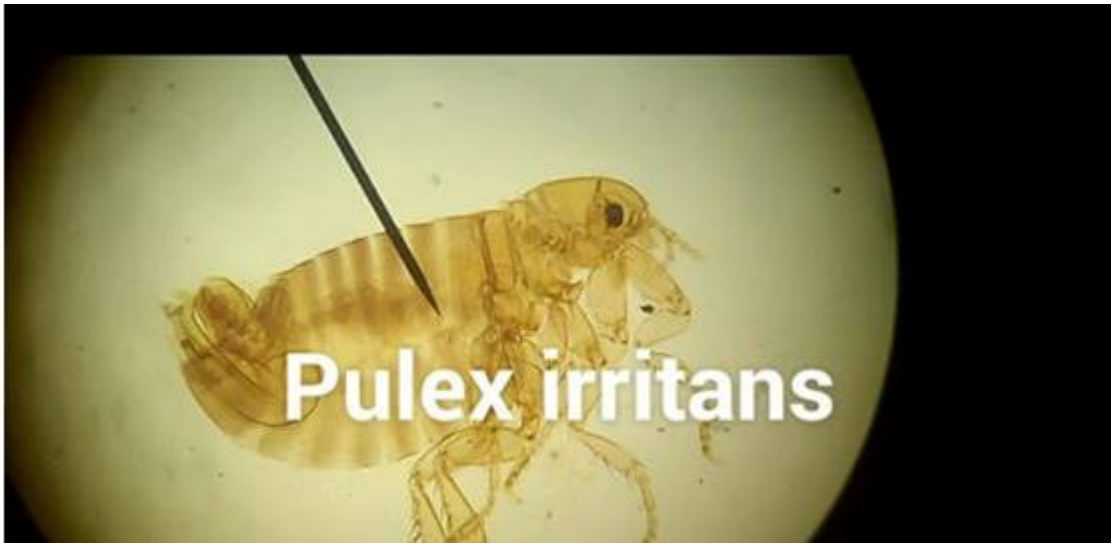
Division : Endopterygota

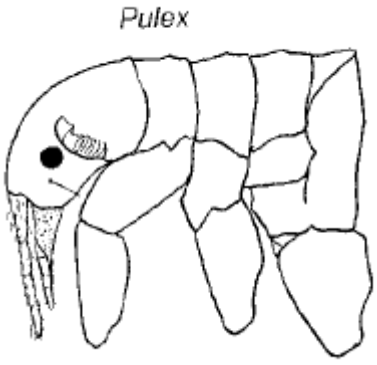
Order : Siphonaptera

Family : Pulicidae

e.g. : pulex irritans

2- Morphological identification





3- Habitat and location:

-Live on blood of human and mammals

-And this species is thought to have originated in south America

4- Disease:

-Causing an itching sensation that result in discomfort and lead to scratching in the vicinity of the bite that causing skin to raise, swell, and itch.

-Dwarf tapeworm infection(Hymenolepis nana)

-Plague (Yersimia pestis)

5- Causative agent of the disease (pathogen):

-Pulex irritance

-Hymenolepis nana

-Bacteria (Yersimia pestis)

6- Host:

Human, mammals and Rodents

7- Mode of transmission:

Direct by the insect biting

Biological

Cyclodevelopmental and Propagative

Echidnophaga gallinacea

1- Taxonomical position:

Class : Insecta

Subclass : Pterygota

Division : Endopterygota

Order : Siphonaptera

Family : Pulicidae

e.g. : Echidnophaga gallinacean

2- Morphological identification

3- Habitat and location:

Large numbers of the flea may congregate around the eyes, comb, wattles, and other naked skin.

-Attach to the skin and around the eyes.

-Female flea attach at one site on their hosts and feed for long periods.

-Males feed intermittently while mating behavior.

The larvae drop to the ground and feed on any organic debris found.

4- Disease:

Anaemia, loss of condition, skin irritation and sometimes death

5- Causative agent of the disease (pathogen):

Echidnophaga gallinacean

6- Host:

A wide range of bird and Mammal

7- Mode of transmission:

Direct by the insect biting

Xenopsylla cheopis

(Oriental rat flea)

1- Taxonomical position:

Class : Insecta

Subclass : Pterygota

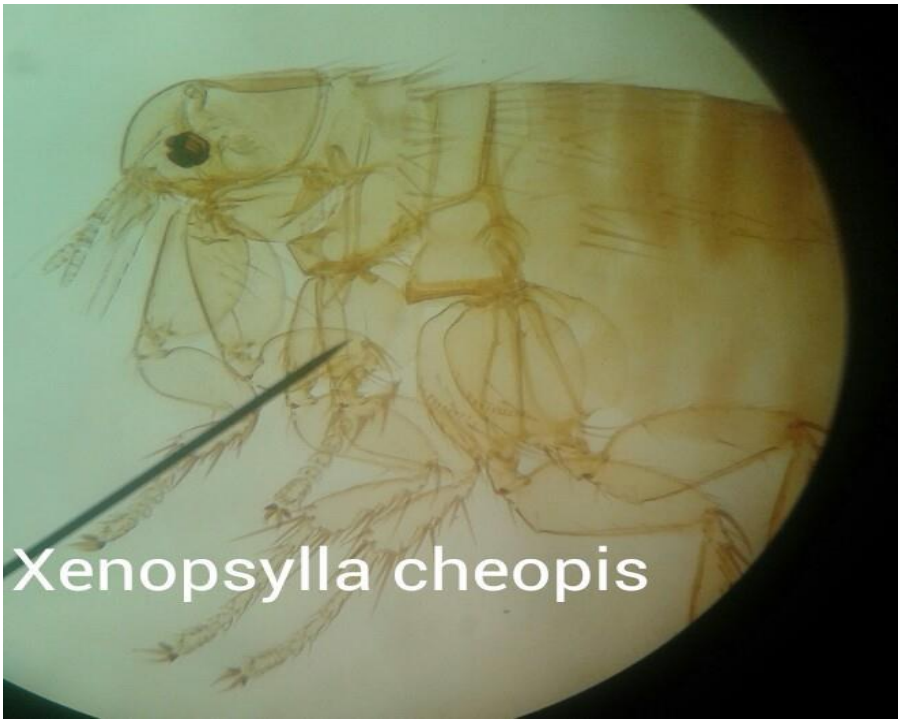
Division : Endopterygota

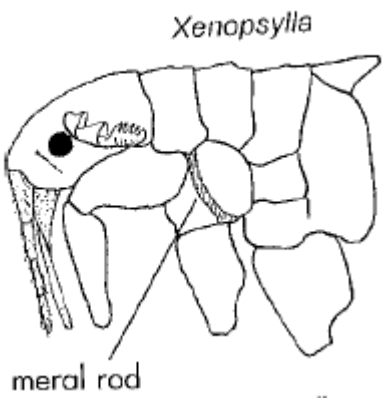
Order : Siphonaptera

Family : Pulicidae

e.g. :xenopsylla cheopis

2- Morphological identification





3- Habitat and location:

-It was collected in Egypt, it is found in tropical and subtropical habitats, rarely found in cold areas.

-The fleas flourish in dry climatic conditions.

4- Disease:

-Plague (Yersimia pestis)

-Marine typhus (Rickettsia typhi)

-Dwarf tapeworm infection(Hymenolepis nana)

-Hymenolepis infection (Hymenolepis diminuta)

5- Causative agent of the disease (pathogen):

-Bacteria (Yersimia pestis, Rickettsia typhi)

-Hilminthes (Hymenolepis nana and Hymenolepis diminuta).

6- Host:

Rodents, rats and human.

7- Mode of transmission:

Biological

Propagative and Cyclodevelopmental

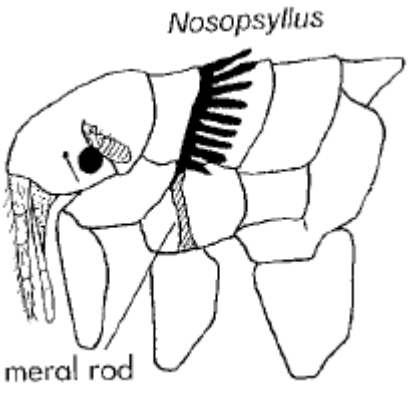
Nosopsyllus fasciatus

(Northern rat fleas)

1- Taxonomical position:

Class : Insecta
Subclass : Pterygota
Division : Endopterygota
Order : Siphonaptera
Family : Ceratophyllidae
e.g. : Nosopsyllus fasciatus

2- Morphological identification



3- Habitat and location:

-It is the most widely spread of its genus, having originated in Europe, but has been transported to temperate regions all over the world.

-Found on rats and house mice but will sometimes transfer to other rodent small vertebrates.

4- Disease:

-Plague (Yersimia pestis)

-Marine typhus (Rickettsia typhi)

-Dwarf tapeworm infection(Hymenolepis nana)

-Hymenolepis infection (Hymenolepis diminuta)

5- Causative agent of the disease (pathogen):

-Bacteria (Yersimia pestis, Rickettsia typhi)

-Hilminthes (Hymenolepis nana and Hymenolepis diminuta).

6- Host:

Rodents, rats and human.

7- Mode of transmission:

Biological

Propagative and Cyclodevelopmental

Ceratophyllus gallinae

1- Taxonomical position:

Class : Insecta

Subclass : Pterygota

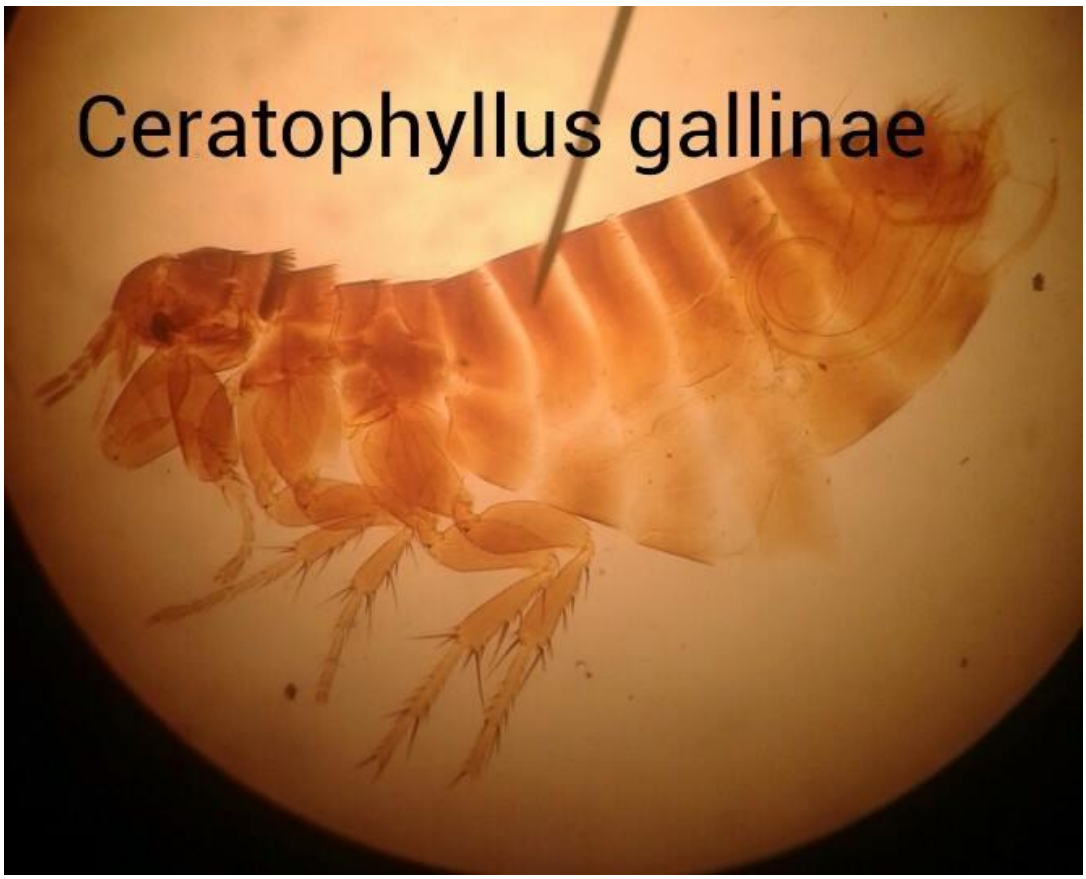
Division : Endopterygota

Order : Siphonaptera

Family : Ceratophyllidae

e.g : Ceratophyllus gallinae

2- Morphological identification



3- Habitat and location:

-Associated with the often wet, ground-built nests of ducks, waders and other water birds.

4- Disease:

Decreasing in egg production, red spots, itching, irritation, rashes, plague and tularaemia

5- Causative agent of the disease (pathogen):

-Ceratophyllus gallinae

-Bacteria

6- Host:

Poultry, human and other mammals

7- Mode of transmission:

Direct by the insect biting

Biological

progagative

Boophilus annulatus

(Hard ticks)

1- Taxonomical position:

Kingdom :Animalia

Phylum : Arthropoda

Class : arachnidae

Order : Ixodida

Family : Ixodidae

e.g : Boophilus annulatus

2- Morphological identification

3- Habitat and location

Central and South regions of the Mediterranean

4- Disease: babesiosis

5- Causative agent of the disease (Pathogen)

Protozoa (Babesia bovis)

6- Host: Cattle

7- Mode of transmission:

Biological

Cycloprogagative

Ornithodoros savignyii

(Soft Ticks)

1- Taxonomical position:

Kingdom :Animalia

Phylum : Arthropoda

Class : Arachnida

Order : Parasitiformes

Family : Argasidae

e.g. : Orithodors savignyii

2- Morphological identification

3- Habitat and location

An ectoparasite on humans, their livestock and wild animals, including birds and bats.

Occurring in semi-desert areas of Africa, Saudi Arabia and other parts of the Persian Gulf, India, Sri Lanka and into Asia,

spend most of its life burrowed under sand or loose soil, often in wait for animals that rest or sleep under trees or in the lee of rocks.

places where people or their animals congregate such as marketplaces, places of worship, cattle kraals and village squares.

4- Disease: Lyme disease

5- Causative agent of the disease (pathogen):

Bacteria (Borrelia burgdorferi)

6- Host: Human

7- Mode of transmission:

Biological

Progagative

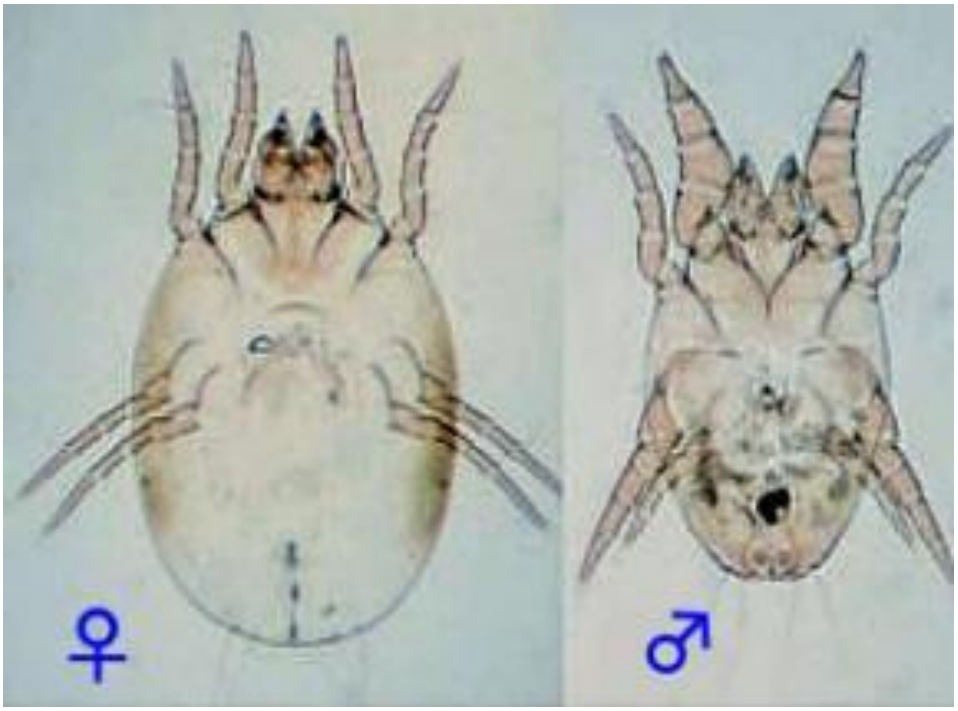
Dermatophagoides sp.

(House dust mites)

1- Taxonomical position:

Kingdom	:	Animalia
Phylum	:	Arthropoda
Class	:	Arachnida
Order	:	Acariformes
Family	:	Pyroglyphidae
e.g.	:	Dermatophagoides sp.

2- Morphological identification



3- Habitat and location

-House dust mites live in warm, humid environments in carpets, upholstery, feather pillows, and under furniture and bedroom mattresses.

-They feed on shed scales from human skin such as dandruff

4- Disease

Cause allergic reactions in some people, including bronchial asthma, nasal allergies, skin allergies.

5- Causative agent of the disease (pathogen):

Dermatophagoides sp.

6- Host: Human

7- Mode of transmission

Direct by the insect biting

Varroa destructor

1- Taxonomical position:

Class : Arachnida

Order :Parasitiformes

Family : Varroidae

e.g. : Varroa destructor

2- Morphological identification

3- Habitat and location:

-Parasite on honey bee

4- Disease:

-Varroosis

5- Causative agent of the disease (pathogen):

such as the deformed wing virus (DWV) spread to RNA viruses bees

6- Host:

Apis cerana and Apis melliferahoney bees

7- Mode of transmission:

Biological
propagative

Periplaneta americana

1- Taxonomical position:

Class : Insecta

Subclass : Pterygota

Division : Exopterygota

Order : Blattaria

Family : Blattidae

e.g. : Periplaneta americana

2- Morphological identification

3- Habitat and location

-Native to Mexico and Central America, but now widely distributed over the earth.

-Live in moist areas.

-They prefer warm temperatures around and do not tolerate cold temperatures.

-These cockroaches are common in basements, crawl spaces, cracks and crevices of porches, foundations, and walkways adjacent to buildings.

-In residential areas outside the tropics these cockroaches live in basements and sewers, and may move outdoors into yards during warm weather.

4- Disease

- Carries pathogenic viruses poliomyliyis
- Protozoa as *Entamoeba histolytica* , *Tricomonas hominis, Balntodium coli.*
- Bacteria as *Staphylococcus aureus* , *Echerichia coli* , *Salmonella* sp. and Cholera
- Carried on the legs of roaches and found in the feces passing through the alimentary tract.

- They act as intermediate host of **Nematodes** parasites
- Filaria in **elephantiasis**
- ***Toxoplasma***
- Some people are **allergic** to cockroaches.

5- Causative agent of the disease (pathogen):

Bacteria, Nematodes and Protozoa

6- Host: Human

7- Mode of transmission

Mechanical

Biological

Cyclodevelomental

Blattella germanica

1- Taxonomical position:

Class : Insecta

Subclass : Pterygota

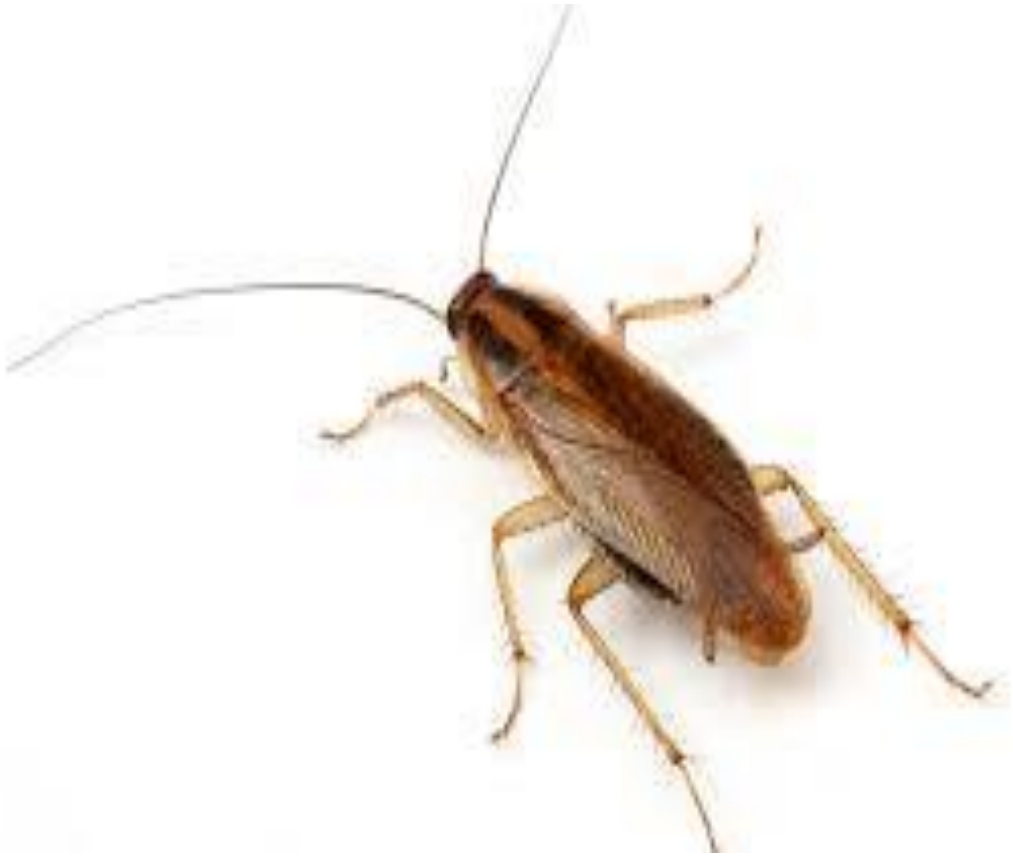
Division : Exopterygota

Order : Blattaria

Family : Blattidae

e.g. : Blattella germanica

2- Morphological identification



3- Habitat and location:

-The most widely distributed species.

-Live in places very close to human at kitchen and around water and heat pipe.

4- Disease

- Carries pathogenic viruses poliomyliyis
- Protozoa as *Entamoeba histolytica , Tricomonas hominis, Balntodium coli.*
- Bacteria as *Staphylococcus aureus , Echerichia coli , Salmonella* sp. and Cholera
- Carried on the legs of roaches and found in the feces passing through the alimentary tract.

- They act as intermediate host of **Nematodes** parasites
- Filaria in **elephantiasis**
- ***Toxoplasma***
- Some people are **allergic** to cockroaches.
-

5- Causative agent of the disease (pathogen):

Bacteria, Nematodes and Protozoa

6- Host: Human

7- Mode of transmission

Mechanical

Biological

Cyclodevelomental

Polyphaga aegyptica

1- Taxonomical position:

Class : Insecta

Subclass : Pterygota

Division : Exopterygota

Order : Blattaria

Family : Polyphagidae

e.g. : Polyphaga aegyptiaca

2- Morphological identification

3- Habitat and location:

-Live outdoors , are not species which commonly found in ouses

-Live in middle east to malta

4- Disease

- Carries pathogenic viruses poliomyliyis
- Protozoa as *Entamoeba histolytica , Tricomonas hominis, Balntodium coli.*
- Bacteria as *Staphylococcus aureus , Echerichia coli , Salmonella* sp. and Cholera
- Carried on the legs of roaches and found in the feces passing through the alimentary tract.

- They act as intermediate host of **Nematodes** parasites
- Filaria in **elephantiasis**
- ***Toxoplasma***
- Some people are **allergic** to cockroaches.
-

5- Causative agent of the disease (pathogen):

Bacteria, Nematodes and Protozoa

6- Host: Human

7- Mode of transmission

Mechanical

Biological

Cyclodevelomental

Musca domestica

(House fly)

1- Taxonomical position:

Class : Insecta

Subclass : Pterygota

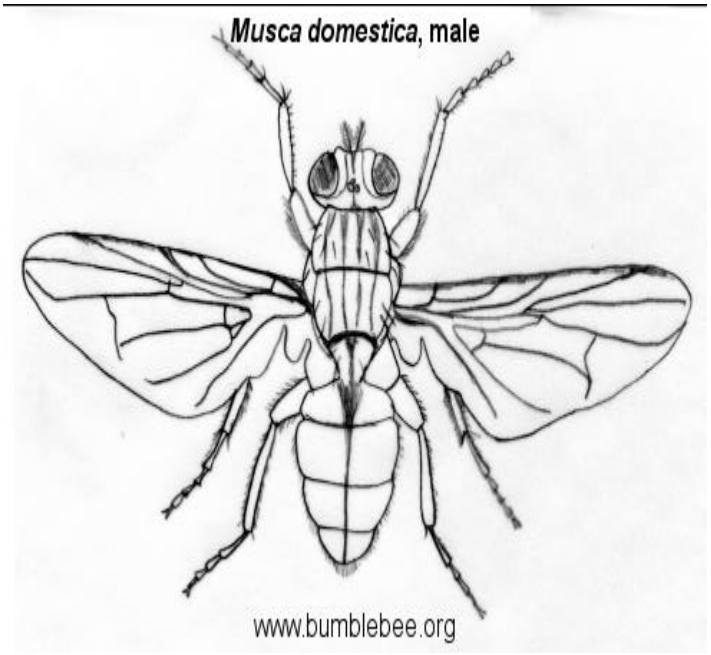
Division : Endopterygota

Order : Diptera

Family : Muscidae

e.g. : Musca domestica

2- Morphological identification



3- Habitat and location:

spread all over the world

Nocternal, mating for one time only ,lay egg on decay organic matters about 100 egg

4- Disease:

1- parasitic diseases: cysts of protozoa e.g.: Entamoeba histolytica and eggs of helminthes (parasitic worms) , e.g.: Ascaris lumbricoides, Trichuris trichiura, Hymenolepis nana, Enterobius vermicularis.

2-bacterial diseases: Typhoid, Cholera and Dysentaria, pyogenic cocci, vectors of Campylobacter and E. coli .

3-Viruses: enteroviruses: poliomyelitis, viral hepatitis (A & E).

5- Causative agent of the disease (pathogen):

viruses, bacteria, fungi, protozoa, and nematodes on their bodies and feces.

6- Host: Human

7- Mode of transmission:

Mechanical

stand up on food and other dirty matters

Muscina stablanus

1- Taxonomical position:

Class : Insecta

Subclass : Pterygota

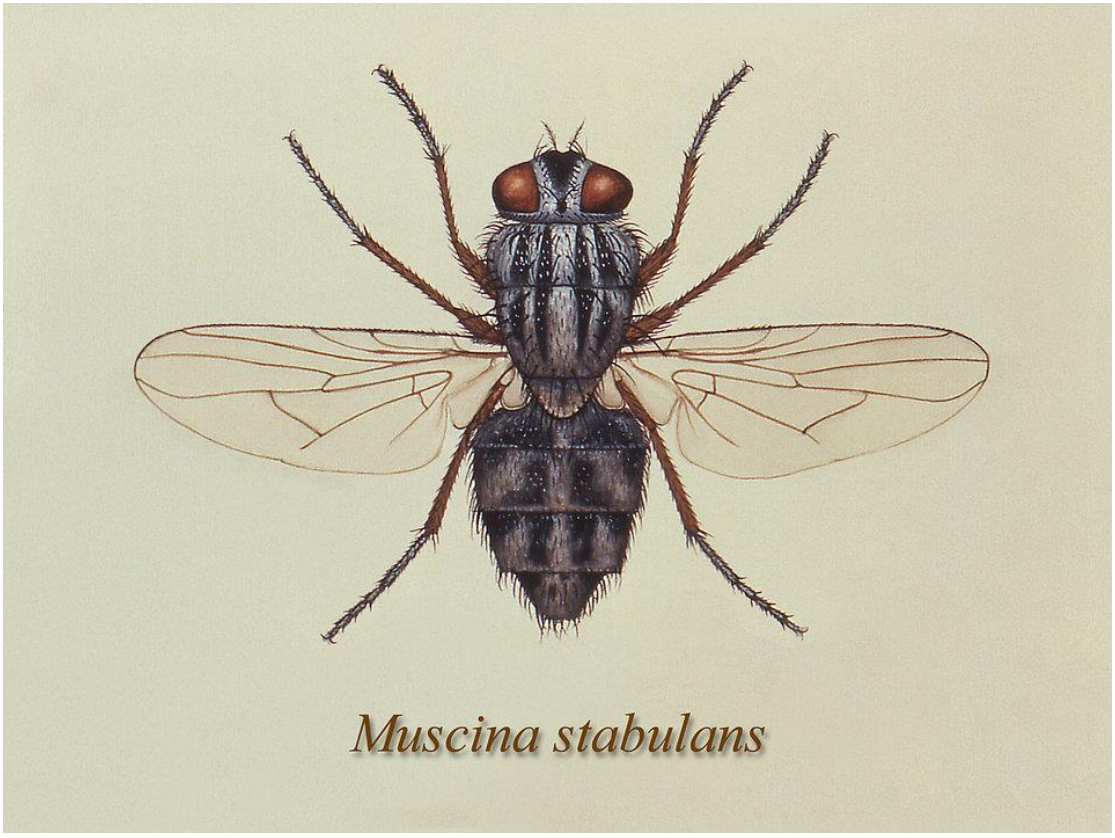
Division : Endopterygota

Order : Diptera

Family : Muscidae

e.g. : Muscina stabulanus

2- Morphological identification



3- Habitat and location:

They are worldwide in distribution and are frequently found in livestock facilities and outside restrooms.

It put its eggs on dead bodies so it used to estimate time of death

4- Disease:

1- parasitic diseases: cysts of protozoa e.g.: Entamoeba histolytica and eggs of helminthes (parasitic worms) , e.g.: Ascaris lumbricoides, Trichuris trichiura, Hymenolepis nana, Enterobius vermicularis.

2-bacterial diseases: Typhoid, Cholera and Dysentaria.

3-Viruses: poliomyelitis

5- Causative agent of the disease (pathogen):

viruses, bacteria, fungi, protozoa, and nematodes on their bodies and feces.

6- Host: human

7- Mode of transmission:

Mechanical

via its feet or mouth parts

Sarcophaga carnaria

1- Taxonomical position:

Class : Insecta

Subclass : Pterygota

Division : Endopterygota

Order : Diptera

Family : Sarcophagidae

e.g. : Sarcophaga carnaria

2- Morphological identification

3- Habitat and location

, from the U.K. and southern Europe, east to the Altai European mountains and north to the Kola Peninsula.

It put its eggs on dead bodies so it used to estimate time of death

4- Disease

1- myiases

2- parasitic diseases: cysts of protozoa e.g.: Entamoeba histolytica and eggs of helminthes (parasitic worms) , e.g.: Ascaris lumbricoides, Trichuris trichiura, Hymenolepis nana, Enterobius vermicularis.

3-bacterial diseases: Typhoid, Cholera and Dysentaria.

5- Causative agent of the disease (pathogen):

Maggots

bacteria, fungi, protozoa, and nematodes on their bodies and feces.

6- Host: human

7- Mode of transmission:

Direct by the insect

Mechanical

via its feet or mouth parts

Calliphora vicina

1- Taxonomical position:

Class : Insecta

Subclass : Pterygota

Division : Endopterygota

Order : Diptera

Family : Calliphoridae

e.g : Calliphora vicina

2- Morphological identification

3- Habitat and location:

-U.S. in urban areas and are most abundant in early spring and fall where the temperatures are around 55-75˚F (13-24˚C).

-These flies are important in the filed of forensic entomology

-It consistent time of arrival and colonization of the body following death.

4- Disease

1- parasitic diseases: cysts of protozoa e.g.: Entamoeba histolytica and eggs of helminthes (parasitic worms) , e.g.: Ascaris lumbricoides, Trichuris trichiura, Hymenolepis nana, Enterobius vermicularis.

2-Bacterial diseases: Typhoid, Cholera and Dysentaria.

3- Myiases

5- Causative agent of the disease (Pathogen):

-Bacteria, fungi, protozoa, and nematodes on their bodies and feces.

-Maggots

6- Host: Human and mammels

7- Mode of transmission:

Mechanical

Direct by the insect

Chrysomya albiceps

1- Taxonomical position:

Class : Insecta

Subclass : Pterygota

Division : Endopterygota

Order : Diptera

Family : Calliphoridae

e.g. : Chrysomya albiceps

2- Morphological identification

3- Habitat and location:

-Associated with myiasis in Africa and America

-The first insect to come in contact with carrion due to their ability to smell dead animal matter from up to ten miles (16 km) away.

4- Disease

1- Primary and secondary myiasis of domestic animal.

2- Parasitic diseases: cysts of protozoa e.g.: Entamoeba histolytica and eggs of helminthes (parasitic worms) , e.g.: Ascaris lumbricoides, Trichuris trichiura, Hymenolepis nana, Enterobius vermicularis.

3-Bacterial diseases: Typhoid, Cholera and Dysentaria.

5- Causative agent of the disease (Pathogen):

-Maggots (Chrysomya albiceps)

-Bacteria, fungi, protozoa, and nematodes on their bodies and feces.

6- Host: Animals

7- Mode of transmission

Direct by the insect

Mechanical

By legs, hairs and wings

Wohlfahrtia magnifica

1- Taxonomical position:

Class : Insecta

Subclass : Pterygota

Division : Endopterygota

Order : Diptera

Family : Sarcophagidae

e.g. : Wohlfahrtia magnifica

2- Morphological identification

3- Habitat and location

-Found in southern Europe, Central Asia, the Middle East, North Africa, and China.

4- Disease:

1- Myasis in mammals; mainly in sheep, but also in cattle, goats, horses, and rarely in humans

2- Parasitic diseases: cysts of protozoa e.g.: Entamoeba histolytica and eggs of helminthes (parasitic worms) , e.g.: Ascaris lumbricoides, Trichuris trichiura, Hymenolepis nana, Enterobius vermicularis.

3-Bacterial diseases: Typhoid, Cholera and Dysentaria.

5- Causative agent of the disease (pathogen):

-Maggots (Wohlfahrtia magnifica)

-Bacteria, fungi, protozoa, and nematodes on their bodies and feces.

6- Host: human and mammlal

7- Mode of transmission:

Direct by the insect

Mechanical

Simulium damnosum

(Black flies)

1- Taxonomical position:

Class : Insecta

Subclass : Pterygota

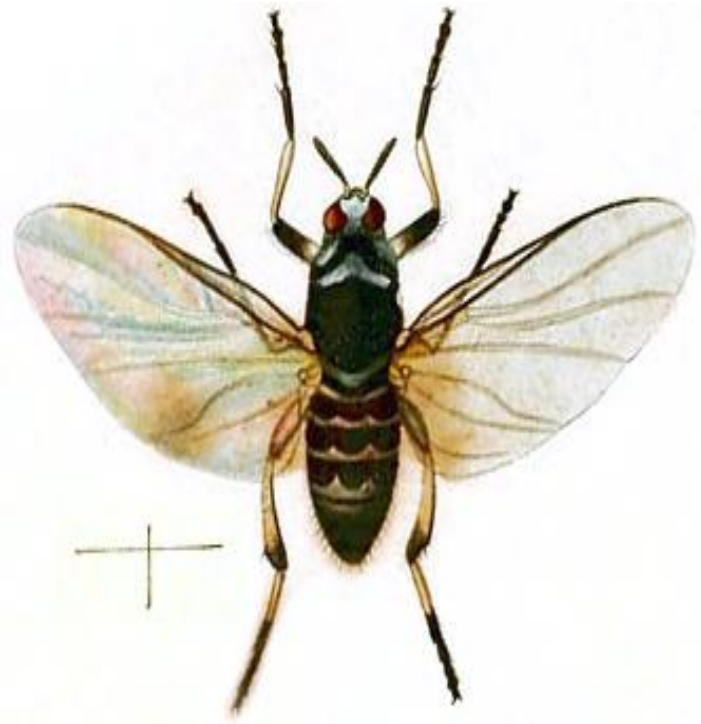
Division : Endopterygota

Order : Diptera

Family : Simuliidae

e.g. : Simulium damnosum

2- Morphological identification



3- Habitat and location:

-South Amirca

- Female feedes on the blood of mammals, including humans, although the males feed mainly on nectar.

-Eggs are laid in running water, and the larvae attach themselves to rocks. Breeding success is highly sensitive to water pollution.

4- Disease:

1. Causing weight loss in cattle and sometimes death.
2. River blinding

3. Itching and localized swelling and inflammation sometimes occurs at the site of a bite
4. Intense feeding can cause "black fly fever", with headache, nausea, fever, swollen lymph nodes

5- Causative agent of the disease (pathogen):

Parasitic nematode

6- Host: Mammals

7- Mode of transmission:

Biological

cyclodevelopmental

Phlebotomus paptsi

(Sand fly)

1- Taxonomical position:

Class : Insecta

Subclass : Pterygota

Division : Endopterygota

Order : Diptera

Family : Psychodidae

e.g. : Phlebotomus papatsi

2- Morphological identification

3- Habitat and location:

The adult flies are nocturnal, spending the day sheltering in dark humid places such as on bark, among foliage, among leaf litter, in animal burrows, in termite mounds, and in cracks and crevices.

4- Disease:

-Leishmaniasis

-Arboviral diseases: Bartonellosis, verruga peruana and pappataci fever.

5- Causative agent of the disease (pathogen):

Leishmania, Phlebovirus

6- Host:

horses, donkeys, mules, cattle, swine, raccoons, rodents, birds and humans.

7- Mode of transmission:

Biological

Propagative (Phlebovirus) – cyclodevelopmental (Leishmania)

Stomoxys calcitrans

(Stable fly)

1- Taxonomical position:

Class : Insecta

Subclass : pterygota

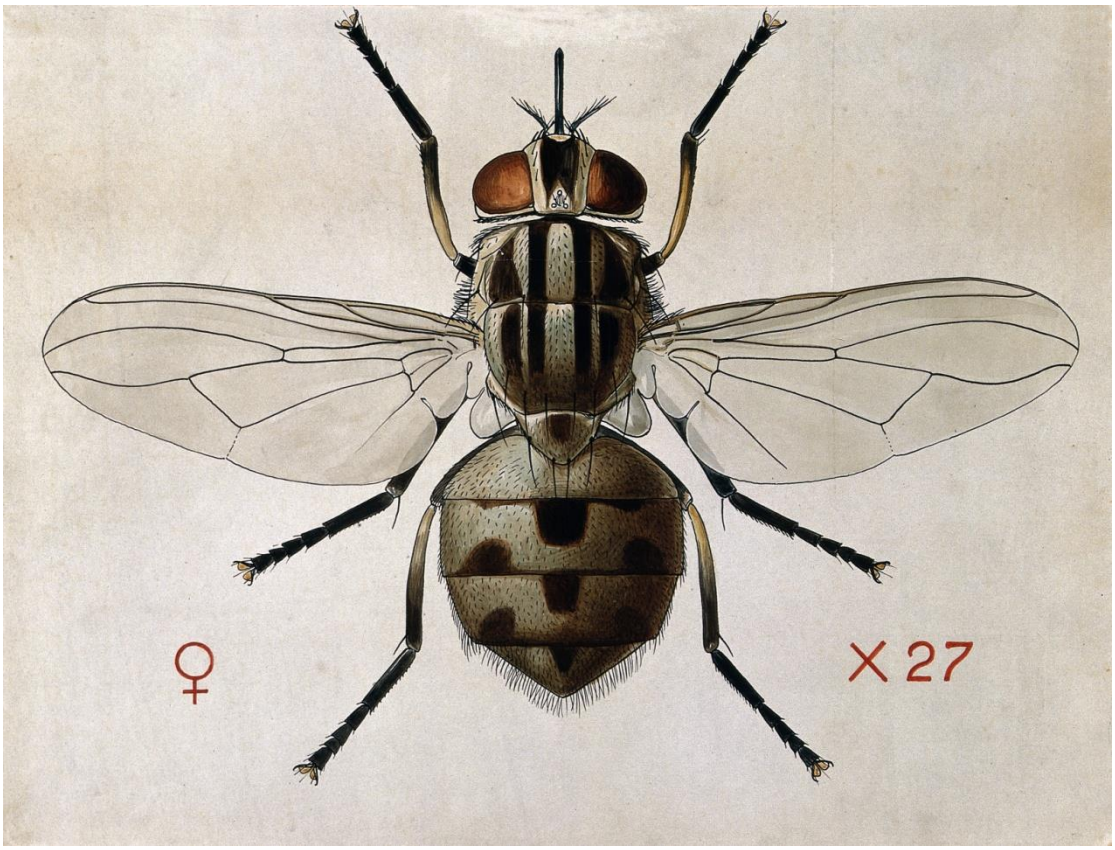
Division : Endopterygota

Order : Diptera

Family : Muscidae

e.g. : Stomoxys calcitrans

2- Morphological identification



3- Habitat and location:

Abundant in and around where cattle are kept.

4- Disease:

-Lower milk production in caws and anemia for caws

-It cause anthrax diesesand transfer trypanosomid parasities for human

5- Causative agent of the disease (pathogen):

Stomoxys calcitrans

Trypanosoma parasites
Pathogene for antherax is Bacillus anthracis

6- Host: Mammals (human)

7- Mode of transmission:

Direct by the insect

Biological

Cyclopropagative and propagative

Glossina morsitans

(Tsetse fly)

1- Taxonomical position:

Class : Insecta

Subclass : pterygota

Division : Endopterygota

Order : Diptera

Family : Glossinidae

e.g. : Glossina moristans

2- Morphological identification

3- Habitat and location:

-Tropical Africa

-Feed on the blood of vertebrate animals

4- Disease:

Human sleeping sickness and animal trypanosomiasis.

5- Causative agent of the disease (pathogen):

Trypanosoma gambiense and Trypanosoma rhod

6- Host: Human

7- Mode of transmission:

Biological

Cyclopropagative

Tabanus taeniola

1- Taxonomical position:

Class : Insecta

Subclass : pterygota

Division : Endopterygota

Order : Diptera

Family : Tabanidae

e.g. : Tabanus taeniola

2- Morphological identification

3- Habitat and location:

Live in warm places

4- Disease:

-Nuisance

-Anthrax disease

-Allergy from saliva

-Secondary Infections

-Transmit a variety of pathogens to livestock and deer

-Two significant human diseases

1-Tularemia (caused by the bacterium Francisella tularensis)

2-Loiasis (filarial nematodes)

5- Causative agent of the disease (pathogen):

Tabanus taeniola

Bacteria (Francisella tularensis) , Filarial nematodes

6- Host: Horses, human

7- Mode of transmission:

Direct by the insect

Mechanical

Wound the animal

Myiasis

Myiasis is the parasitic infestation of the body of a live mammal by fly larvae (maggots) that grow inside the host while feeding on its tissue.

Nosocomial myiasis

Nosocomial myiasis is myiasis acquired in a hospital setting. It is quite frequent, as patients with open wounds or sores can be infested if flies are present. To prevent nosocomial myiasis, hospital rooms must be kept free of flies.

Wound myiasis

Wound myiasis occurs when fly larvae infest open wounds. It has been a serious complication of war wounds in tropical areas, and is sometimes seen in neglected wounds in most parts of the world. Predisposing factors include poor socioeconomic conditions, extremes of age, neglect, mental disability, psychiatric illness, alcoholism, diabetes, and vascular occlusive disease.

Eye myiasis

Myiasis of the human eye or ophthalmomyiasis can be caused by *Hypoderma tarandi*, a parasitic botfly of caribou. It is known to lead to uveitis, glaucoma, and retinal detachment. Human ophthalmomyiasis, both external and internal, has been caused by the larvae of the botfly.

Specific myiasis

Caused by flies that need a host for larval development

- *Chrysomya bezziana* (old world screwworm fly)

Semispecific myiasis

Caused by flies that usually lay their eggs in decaying animal or vegetable matter, but that can develop in a host if open wounds or sores are present

- *Calliphora* spp. (blue-bottle fly)
- *Sarcophaga* spp. (flesh fly or sarcophagids)

Flesh flies, or *sarcophagids*, members of the family *Sarcophagidae*, can cause intestinal myiasis in humans if the females lay their eggs on meat or fruit.

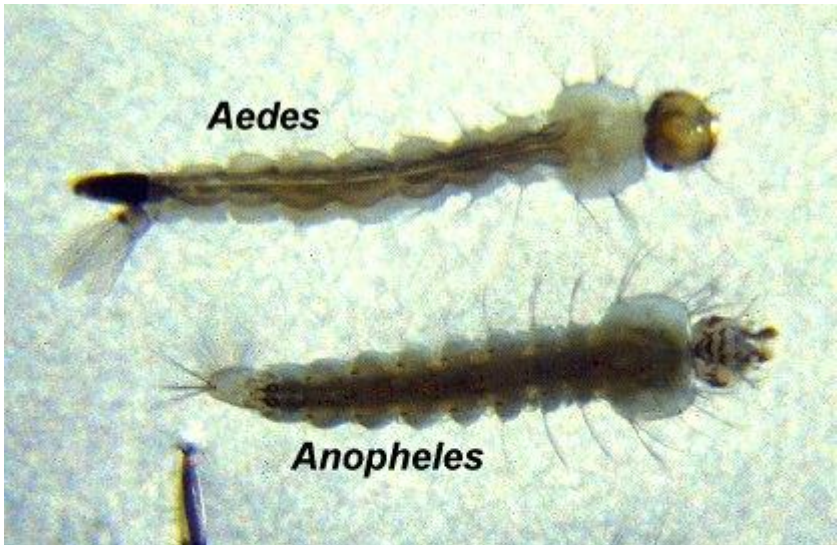
Accidental myiasis

Also called **pseudomyiasis**. Caused by flies that have no preference or need to develop in a host but that will do so on rare occasions. Transmission occurs through accidental deposit of eggs on oral or genitourinary openings, or by swallowing eggs or larvae that are on food.

- *Musca domestica* (housefly)
- *Muscina spp.*

The adult flies are not parasitic, but when they lay their eggs in open wounds and these hatch into their larval stage (also known as maggots or grubs), the larvae feed on live and/or necrotic

tissue, causing myiasis to develop. They may also be ingested or enter through other body apertures.



Pictorial Keys to Arthropods, Reptiles, Birds, and Mammals of Public Health Significance
HTTP://WWW.CDC.GOV/NCEH/EHS/PUBLICATIONS/PICTORIAL_KEYS.HTM