

Introduction

- ❑ Derived from the spanish word “**Musketas**” in Spanish and Portugese it means “small fly”
- ❑ These arthropods have worldwide distribution
- ❑ Species are grouped by genus according to their physical characteristics.
- ❑ More than 3450 species and subspecies found worldwide divided in 38 genera.
- ❑ Approximately 40 million years older than humans (fossils from Eocene)

Morphology

- Body: small, fragile, 3-6mm long
- Distinguishing of sexes:
- Antenna: plumose in male, pilose in female
- Palp
- External genitalia
- A long proboscis 3-5 times as long as head or about as long as head and thorax
- Mouthparts, piercing and sucking type. Proboscis and 6 needles.

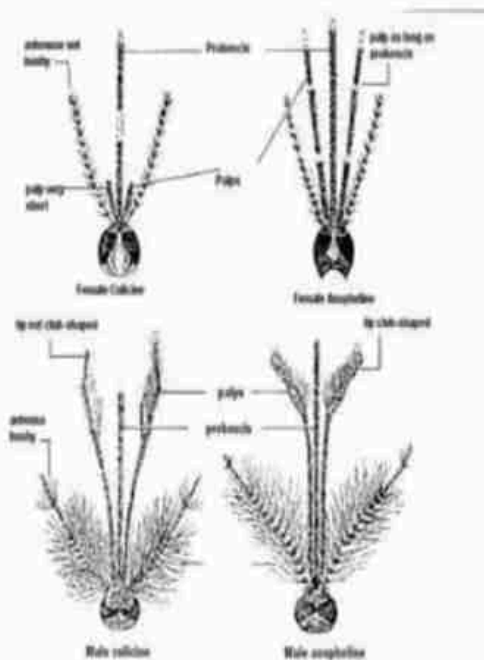
Cont....

- ❑ From the family Culicidae of the order Diptera and are similar in appearance to other flies

- ❑ There are three genera of medical importance:
 - Culex- About 88 species
 - Aedes- About 700 species
 - Anopheles- About 460 species

- ❑ Great habitat diversity

Proboscis and palp....



Antenna of mosquitoes



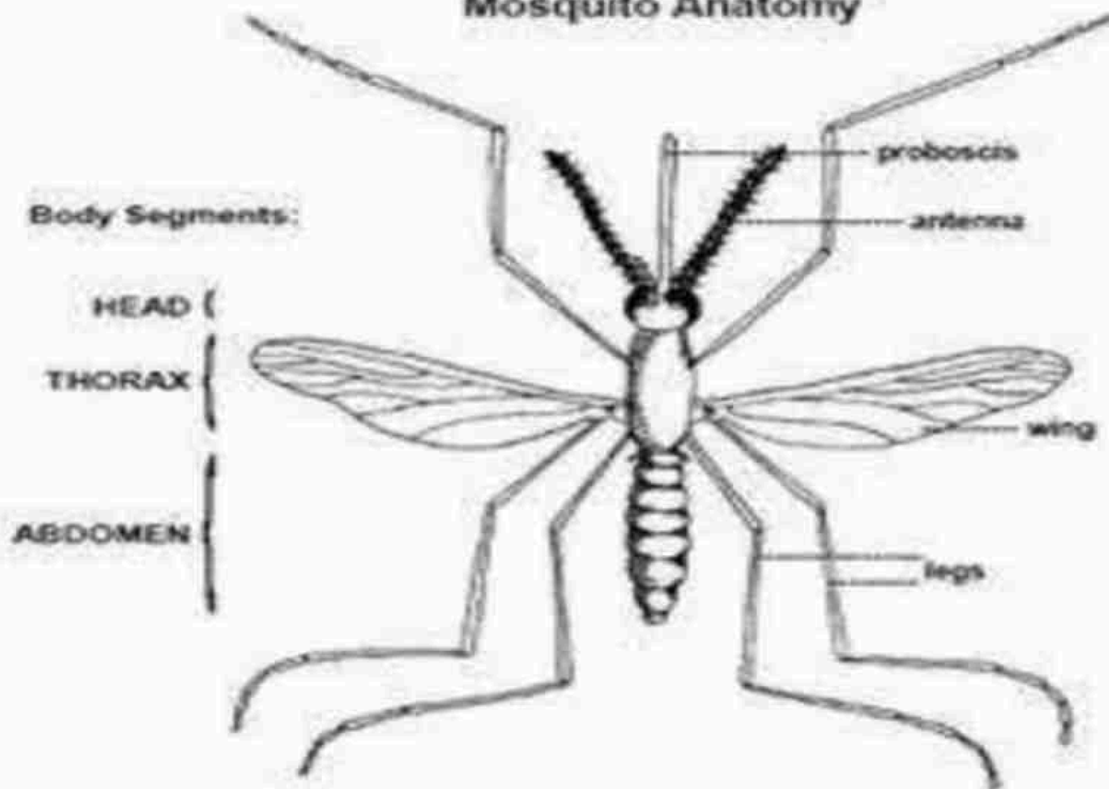
Male (Plumose)



Female (Pilose)

Morphology of mosquito

Mosquito Anatomy



Characteristics of mosquitoes

- ❑ Adult mosquitoes are terrestrial and capable of flight.
- ❑ With piercing-sucking mouthparts, the females feed mostly on animal blood and plant nectar
- ❑ Males mouthparts are modified to suck nectar and plant secretions.
- ❑ Eggs develop a few days after females take a blood meal.
- ❑ Females oviposit on the water, in crevices in the soil.....
.....and also in special niches that are flooded such as natural and artificial containers or tree holes.

Millions of books, documents and more, ad-free.



اوبال سارما

المشاهدات 30143 • إعجاب 35 • نوفمبر 08 2014

Life cycle of mosquito

- Like all flies, mosquitoes go through four stages in their lifecycles: egg, larva, pupa, and adult or imago.
- The first three stages—egg, larva, and pupa are largely aquatic.
- These stages typically last five to 14 days, depending on the species and the ambient temperature.
- Eggs hatch to become larvae, which grow until they are able to change into pupae.
- The adult mosquito emerges from the mature pupa as it floats at the water surface.
- Depending on species, gender, and weather conditions, adult lifespan ranges from a week to several months.



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mosquitoes and vector bionomics

الصحة والعلاج



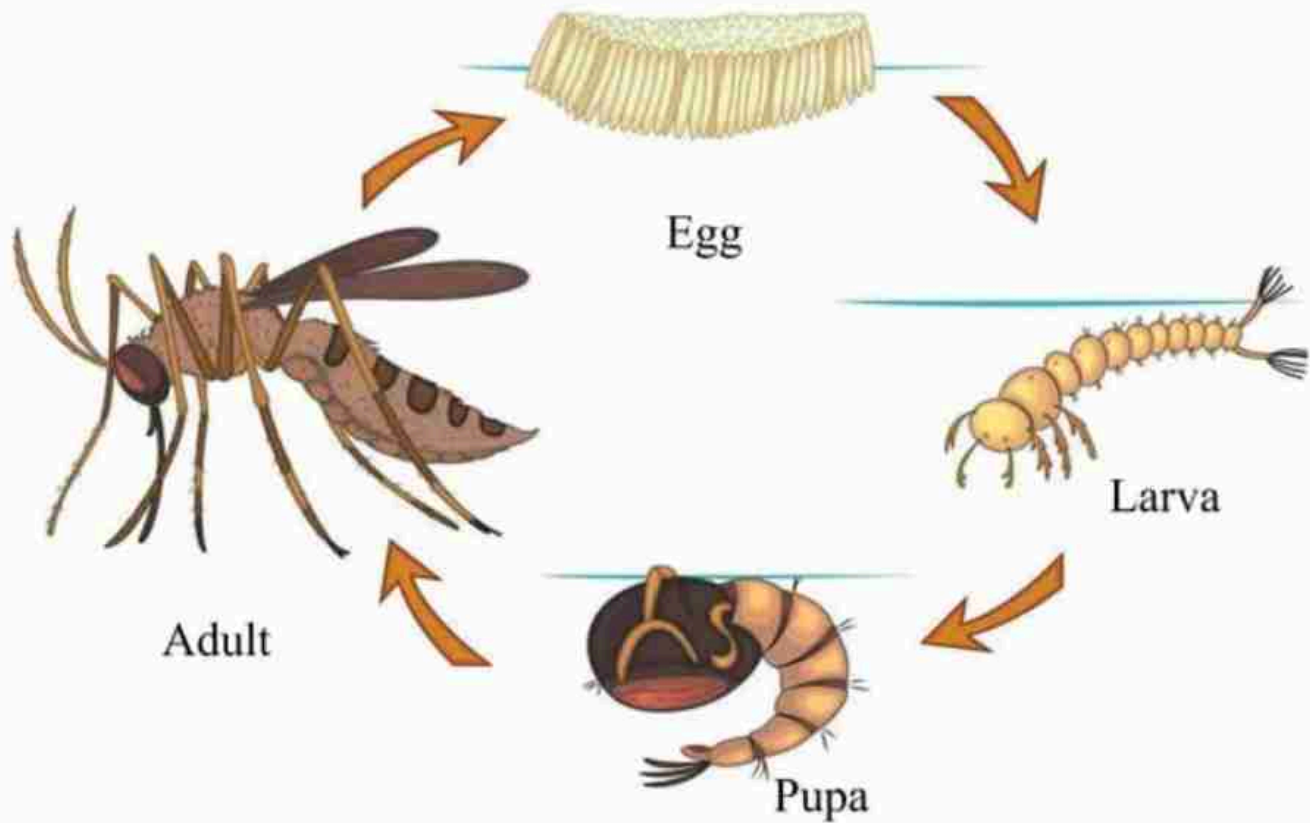
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Life cycle of mosquito



Larva of mosquito

Siphon tube



Holometabola



Egg — 1-4 days



Larva (4 stages)— 7 days



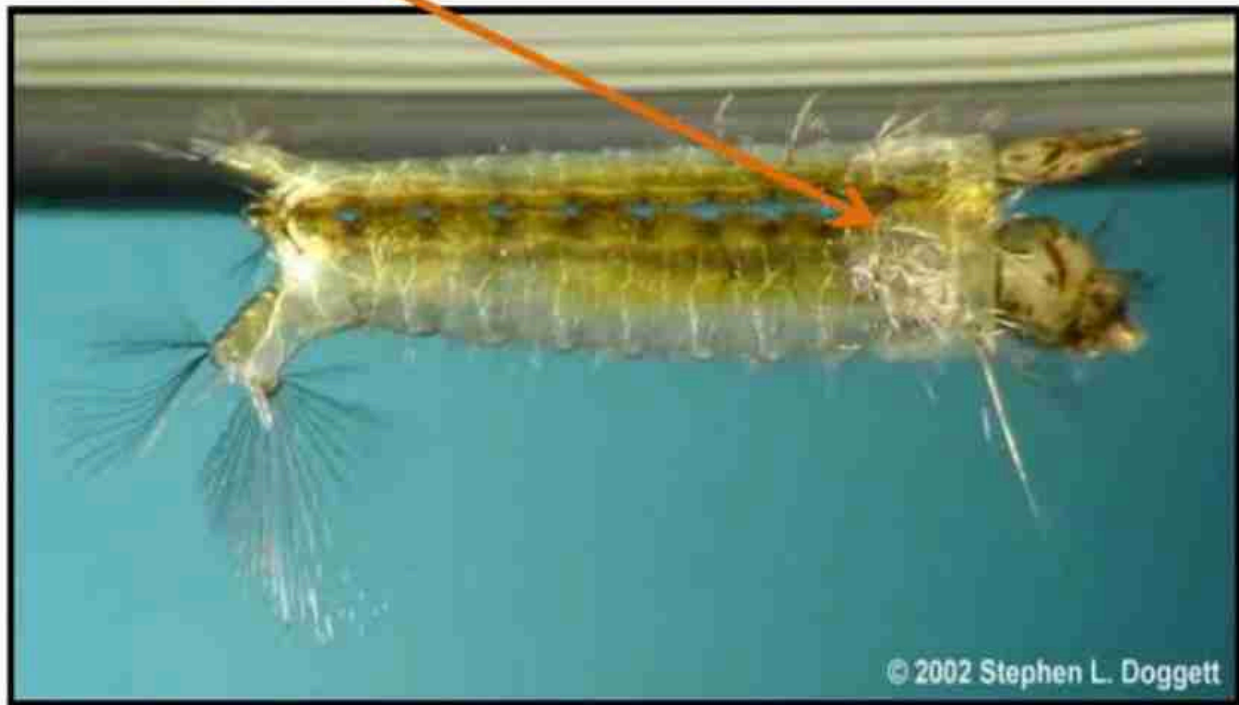
Pupa – 2-3 days



Adult-10-14 days total.

Larva...

Palmate
hair



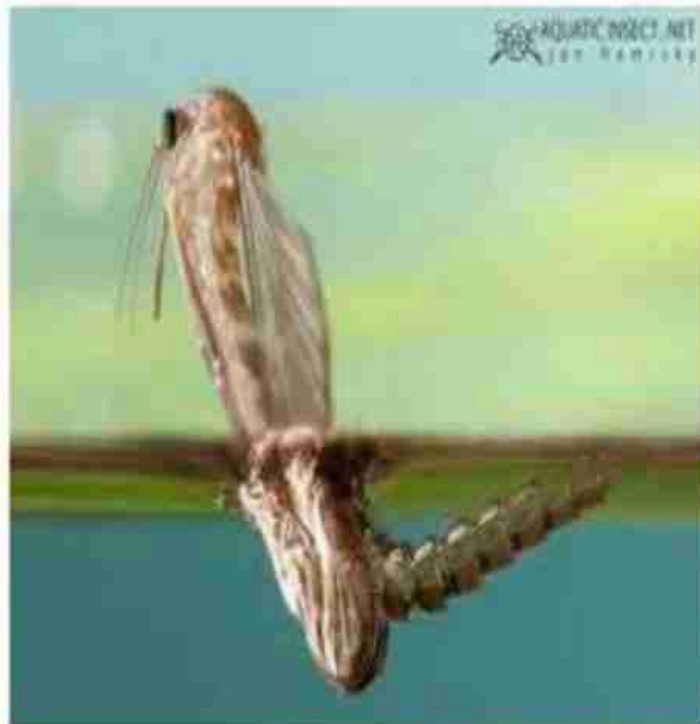
Pupa of mosquito....

- The mosquito pupa is comma-shaped.
- The head and thorax are merged into a cephalothorax...
.....with the abdomen curving around underneath.
- Pupa swims actively by flipping its abdomen, and is called a "**tumbler**" because of its swimming action.
- Comes to the surface frequently to breathe through a pair of respiratory trumpets on their cephalothoraces.
- Pupae **do not feed** during this stage.
- They pass their time hanging from the surface of the water by their respiratory trumpets.

Pupa....transformation...

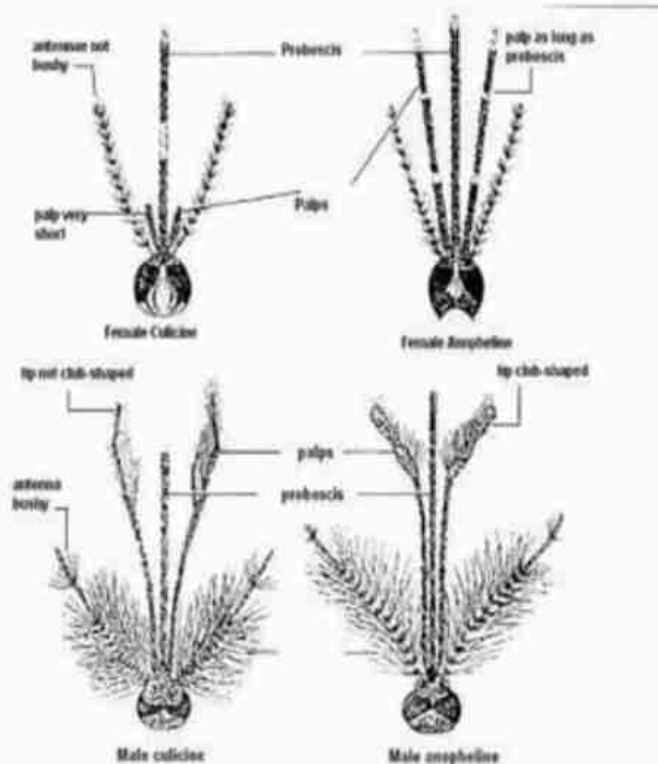


Pupa



Adult mosquito emerging
from pupa

Difference between Male and female mosquitoes



❑ Female mosquito is the larger one.

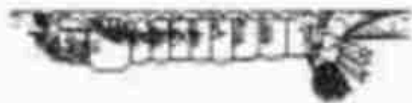
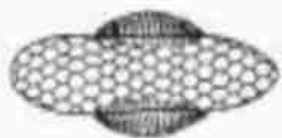
❑ Female mosquito has longer proboscis

❑ Male mosquito has more bushy antenna

❑ Male has palps as long as proboscis or even longer

❑ Low pitched whinny buzz indicates female mosquito.

ANOPHELES



AEDES

Eg



Larva



Pupa

CULEX



The adult mosquitoes



Culex



Anopheles



Aedes

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Mosquitoes and diseases

- Annoyance pest: A mosquito bite may induce local dermatitis or even systematic reaction in sensitive persons.
- Parasitic diseases: Malaria and filariasis.
- Virual diseases: Japanese encephalitis B, Dengue fever and yellow fever.
- Mechanical transmitter: Some mosquitoes may carry fly eggs to humans, inducing myiasis.