- *Drosophila melanogaster* : Is a small common fly found near ripe and rotted fruit and it was used for over a century in genetics studies.
- **Thomas Hunt Morgan** was the first biologist that study *Drosophila* in 1900, and he was the first biologist whom discovers **sex-linkage and genetic recombination.**
- ***Drosophila* used in genetic studies:**

1- *Drosophila* caring and culturing requires little equipment and takes little space even when using large cultures and its cost is low.

2- Small and easy to breed in the laboratory and its morphology is easy to identify once anesthetized with (ether, dioxide gas, by cooling or with flyNap).

3- Has short generation (about 10 days), so several generation can be studied within few weeks.

4- Has **high fecundity** (female lay 100 eggs per a day and perhaps 2000 in a lifetime).

5- Males and females are readily distinguished and virgin females are easily isolated.

6- The mature larvae show giant chromosomes in the salivary glands called **polytene chromosomes** "are giant chromosomes common to many (two-winged) flies, they begin as normal chromosomes, but after repeated rounds of DNA replication without any cell division they become large" indicate regions of transcription and hence gene activity.

7- Has only four pairs of chromosomes: three **autosomes** and one pair of **sex** chromosomes.