

Insects and their Characteristics

Insects are tracheate arthropods (Greek Arthron = segmented, podos = leg) in which the body is segmented with a relatively tough integument and jointed limbs.

The main characteristics of insects (Latin insectum = having cut into) are summarised below :

1. The body is bilaterally symmetrical (i.e. the longitudinal half is the mirror image of another half) and triploblastic (presence of three germ bands during embryonic development viz. ectoderm, mesoderm and endoderm).
2. The body is divided into three distinct regions the head, thorax and abdomen.
3. The exoskeleton or the integument is hard and the flexibility is because of the chitin present, thus the integument combines strength and rigidity with flexibility.
4. The head is formed by the fusion of six embryonic segments.
5. The anterior region of head is provided with the mouth parts adapted for biting and chewing, piercing and sucking, siphoning, sponging and chewing and lapping etc.
6. There is a pair of segmented antennae situated near the eyes except the order protura in which they are absent.
7. The thorax consists of 3 segments viz., pro-, meso- and meta- thorax having one pair of legs in each segment. The second and third thoracic segments carry a pair of wings. Usually there are two pairs of wings, but some times only one pair is functioning and the other is reduced, vestigial or absent.
8. The abdomen is comprised of 7 to 11 segments.
9. The alimentary canal is tubular in structure which opens anteriorly into the mouth and ends into the anus. In place of liver, there is a pair of salivary glands extending along the sides of alimentary tract and opens into the mouth.
10. Circulatory system is open type i.e., the blood is circulated in the body through the lateral openings of the heart known as ostia.
11. The blood is devoid of red blood corpuscles and yellowish green in colour.
12. The respiratory system consists of tracheae which open exteriorly by means of paired spiracles.
13. The nervous system is composed of the ganglionic masses which are interconnected with the nerve cord.