

INTRODUCTION TO INSECTS AND ENTOMOLOGY

Insects are important to everyone--they are found almost any place and on almost everything. As you become more familiar with insects, you will be fascinated with the wide variety of forms and their ways of life. Many people have made the collection and identification of insects a useful hobby, others have made this science of insect study their life work.

The study of insects is a science called entomology. A person who studies insects is called an entomologist.

Why would anyone study insects? Well, many people begin to study insects simply because they are so abundant and unusual. They are the most diversified kind of animal life in existence, and, except for microbes, insects are the most numerous. Scientists have identified nearly a million different species of insects and expect that there may be that many more left to be discovered. In a forest you might be able to find 10,000 arthropods (insects, mites, centipedes, etc.) per square foot in just the top 3 inches of litter and soil. A Kansas farmer may find several billion greenbugs in his sorghum field. The average number of insects in one square mile is more than all of the people on earth. The total weight of arthropods in the world is several times the total weight of all other land animals combined.

Increasing knowledge of the damage done by insects, and the role they play in transmission of animal, plant and human diseases, emphasizes the necessary for correctly identifying these pests and knowing more about their life habits.

Entomologists have to alert for new pests and watch for new outbreaks of old pests. To do this one must be able to distinguish between insects that are injurious or potentially injurious and those that are beneficial or of no consequence to human welfare.

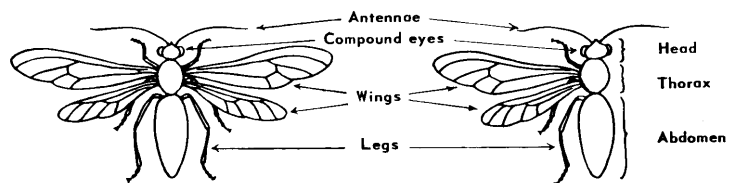
What is an Insect?

Insects have three pairs of legs and no internal skeleton (bones). The external skeleton (exoskeleton) is a waxy, durable, flexible substance called CHITIN. Because of the unusually stable character of this exoskeleton, insects can be kept for many years without preservation, and still retain a lifelike appearance after death.

The body of an adult insect is divided into three body regions:

1. The head
2. The thorax
3. The abdomen

The head bears the eyes, the antennae and mouth parts. The next division behind the head is the thorax; attached to it are the wings and legs. The third part is the abdomen. Here we find the spiracles or openings through which insects breathe.



Sketch of an Insect Showing Body Parts.

The Place of Insects in the Animal Kingdom

All of the known animals in the world are separated into 16 major division called PHYLA. Each phylum includes all animals having similar physical characteristics. For example, the phylum ARTHROPODA includes all animals with segmented bodies and jointed legs. Several different Arthropods are recognized and those of each distinct type are grouped together as a CLASS. There are five major classes of Arthropods: 1. Class Crustacea (crayfish, sowbugs) 2. Class Arachnida (spiders, ticks, mites) 3. Class Diplopoda (millipedes) 4. Class Chilopoda (centipedes) 5. Class Hexapoda (insects)

The class Hexapoda is a highly specialized group and differs from the other classes in having just six legs.

Such physical characteristics as: Metamorphosis (the change in shape of an insect as it grows), type of mouth parts, number and kind of wings and type of legs further divide the class Hexapoda into 22 common ORDERS. The beetles which belong to the Order COLEOPTERA are perhaps the best known of all insects. Each order is further divided into FAMILIES. Each family is divided into GENERA and finally genera into SPECIES. The genus and species name of an insect is written in Latin and when used together make up the SCIENTIFIC NAME.

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