4-H Study Materials for Entomology Contests

January 2003

IV. Classification

Why Classification Is Important

Classification of living organisms is based on a scheme of grouping similar organisms together. Each group is in turn made up of smaller groups that share even more characteristics. The most precise group is a species. Individuals in a species are capable of interbreeding and reproducing additional members.

Classification of Insects and Their Relatives

Multicellular animals are classified into the animal kingdom. The kingdom is further divided into lesser groupings. The names of groups in a typical complete classification of species are (the example is for a honey bee, *Apis mellifera* Linnaeus):

Kingdom	Animalia
Phylum	Arthropoda
Class	Insecta
Order	Hymenoptera
Family	Apidae
Genus	*Apis*
Species	*mellifera*

Sometimes additional groups are used that are intermediate to the groups listed. These groups often use a prefix of super- (above) or sub- (below) to indicate the position of the new group in the above list. Thus, superfamily falls between order and family, while subfamily falls between family and genus.

Scientists refer to a species with the genus name, the species name and the name of the author of the species which is the scientist who originally described the species. The genus name and species name typically are in italics, with the genus name capitalized but not the species name. The author's name is in plain type and appears in parentheses if the genus name was changed by other authorities since it was first described. Including the author's name often avoids confusion when investigating the proper names for species.

Technically, entomology is concerned only with the study of one class Insecta or Hexapoda in the Phylum Arthropoda (all animals with segmented legs, segmented bodies and exoskeletons). However, entomologists often study some members of other classes including:

1. Class Arachnida - (ticks, mites, spiders and scorpions)

2. Class Chilopoda - (centipedes)

3. Class Diplopoda - (millipedes)

4. Class Malacostraca - (sowbugs and pillbugs)

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