Lecture I - Introduction

* Course Schedule

* Requirements and grading

* Assignment: For review read Chapter 3 in your text (pp. 24-71). You will be responsible for it come test time.

* We will begin with a few definitions:

Entomology - this, of course, is the study of insects.

Taxonomy - According to R. E. Blackwelder, taxonomy is the handling and identification of specimens, the publication of the data, the study of the literature, and the analysis of variation shown by the specimens.

Classification - is the arrangement of individuals into groups and the groups into a system (= classification).

Phylogeny - the study of relatedness among taxa.

Systematics - This term is usually considered a more broad concept and usually includes the functions of both taxonomy and classification. Many people, however, use the terms taxonomy and systematics interchangeably, giving taxonomy a more broad definition similar to that given here for systematics. For example, your text defines taxonomy as the science of classification into categories of varying rank, based on similarities and differences, and the describing and naming of these categories.

So based on these definitions, a taxonomist might be more restricted to identifying, naming, and describing of specimens, whereas a systematist would also do these things, but would also be concerned with arranging these species into a classification.

So in the broad sense, a systematist would engage in the following professional activities:

1) faunistics - the exploration or discovery of what organisms exist and their distribution in nature.
2) zoography - the description of animals so that the scientific world will know about them.
3) nomenclature - the formal naming of taxa (taxonomic categories; taxon is singular).
4) identification
5) classification
6) phylogenetics - the study of relationships (who is related to who) and evolution.
7) experimental taxonomy - the testing of hypotheses proposed in classifications and phylogenies.
8) historical studies
9) teaching
10) curation

In this course, we will be concerned primarily with the principles of identification, although there will a few introductory lectures on classification, etc. You will be responsible for identifying insects to Order and Family, by sight and/or through the use of keys. I will also try to make you aware of the basis of our present classifications as well as some classifications that have been used by other authors.

Those who use taxonomy in the broad sense general further break it down into 3 parts:

alpha taxonomy - this is taxonomy in the strict sense; that is, the identifying, naming, and describing of taxa.
beta taxonomy - this is the part of taxonomy concerned with classifications.
gamma taxonomy - this part of taxonomy is concerned with phylogenetics; that is, figuring out who is related to who.

It is important for you to understand that classification and phylogenetics are not the same thing. It is better if a classification reflects true relationships between taxa, but it does not have to. You could have a classification, for example, based on some artificial character such as color. In this type of classification you would have grouped blue beetles with blue butterflies. So this does not reflect true relationships, and so it is not phylogenetic.