INSECT MORPHOLOGY
Lab 1 - Arthropod Evolution

Title: A study of metamerism, tagmosis, and associated specializations in representative arthropod classes.

Introduction: Traditionally, many morphologists believe that present day arthropods have evolved from a worm-like ancestor which had 20 distinct but undifferentiated segments or metameres. This primitive metamerism evolved through the years as different body regions began to change to meet the functional needs of specialization. Each such specialized body region is called a tagma (plural tagmata). Each arthropod class is recognized chiefly by the arrangement of its tagmata. Therefore, tagmosis is the evolutionary process in which two or more segments (metameres) are grouped together to form a functional unit known as a tagma.

Procedure: Compare the examples of representative arthropod classes presented for study. For each specimen try to answer the following questions.

1. Class to which it belongs.
2. Presence or absence (and how many) of simple eyes.
3. Presence or absence (and how many) of compound eyes.
4. Presence or absence (and how many) of antennae.
5. Types of feeding appendages and their specializations.
6. Number of pairs of locomotor appendages and how specialized.
7. Tagmosis.
8. Location of the genital pore.
9. Any other notable specializations.

This information should be presented in tabular form, and turned in by 5:00 PM Friday. For reference purposes see an An Introduction to the Study of Insects (6^{th} edition) by Borror, Triplehorn, and Johnson.