

**Immature Insects  
BSPM 555**

**Instructor:** B.C. Kondratieff, 970-491-7314, email:  
[Boris.Kondratieff@Colostate.edu](mailto:Boris.Kondratieff@Colostate.edu)

**Text:** Immature Insects Lab Manual – H.E. Evans

**Supplemental Texts:** Immature Insects, Vols. 1 & 2, (F. Stehr);  
Larvae of Insects (A. Peterson);  
How to Know the Immature Insects (H.F. Chu and  
Cutkomp, 2<sup>nd</sup> ed)  
(copies available in lab)

**Objectives:**

1. Gain an understanding of the taxonomy of Exopterygota and Endopterygota immature insects:
  - a. learn morphological structures and nomenclature unique to each of the major orders.
  - b. be able to identify all immature insects to order and most to family on sight
  - c. be able to identify all immature insects to family and some to genus or species with taxonomic keys with microscope.
2. Gain an understanding of the biology of immature insects by discussing some research on representative species in each order (Reading assignments).
  - a. behavior
  - b. habitat and adaptation of organism
  - c. food
  - d. life history
  - e. physiology

**Collection:**

A collection of 25 families (1 vial each) of the following orders is required (depending on weather conditions):

Ephemeroptera	-	2 families	Coleoptera	-	3 families
Odonata	-	2 families	Trichoptera	-	3 families
Orthoptera	-	2 families	Lepidoptera	-	3 families
Plecoptera	-	2 families	Diptera	-	4 families
Hemiptera	-	2 families			

Homoptera - 2 families

These 25 families count 3 points each making a total of 75 points. Up to 25 more points must be earned in the following manner: (1) identification to the generic level (up to 24 at 1 point each), (2) collection of additional families or additional identifiable genera in the same family (up to 10 at 1.5 points each). While it is possible to earn more than 100 points, no score higher than 100 will be recorded. The extra points are designed to help students who may have problems collecting certain groups in the spring and not to make the collection competitive.

The following rules apply to the collection:

1. All material must be collected in the field, etc. by the student turning in the collection; there will be no exchanges. However, if several students actively participate in a collection trip, the “catch” may be divided up.
2. Collections will be graded on quality of preservation and labeling.

### **Project:**

Each student is required to review the known biology and/or taxonomy of a particular species or group of species of immature insects. A 10-page paper maximum will be handed in by the set deadline.

### **Lecture and Lab Syllabus**

January	Introduction Introduction; Orders
February	Exopterygota Small orders of Endopterygota Review and Collection
March	Coleoptera Coleoptera <b>Lab Practical I,</b> <b>Lecture Test I,</b>
April	Lepidoptera Lepidoptera Lepidoptera (Guest Lecturer) Diptera Hymenoptera;
May	Hymenoptera; Review and Collection Review and Collection) <b>Lecture Test II,</b> <b>Final Exam – Lab Practical II,</b> Collection due

## EVALUATION

Lecture Test 1	100 points
Lecture Test 2	100 points
Lab Practical 1	100 points
Lab Practical 2	150 points
Project	50 points
Collection	100 points
<b>TOTAL</b>	<b>600 points</b>

A = 549-600

B = 477-548

C = 417-476