



ECOLOGY AND EVOLUTION OF COLEOPTERA (BEETLES)

WHEN: June 5 – 24, 2017

Latest arrival 4 June, earliest departure June 25.

WHERE: Costa Rica — La Selva Biological
Station.

Description

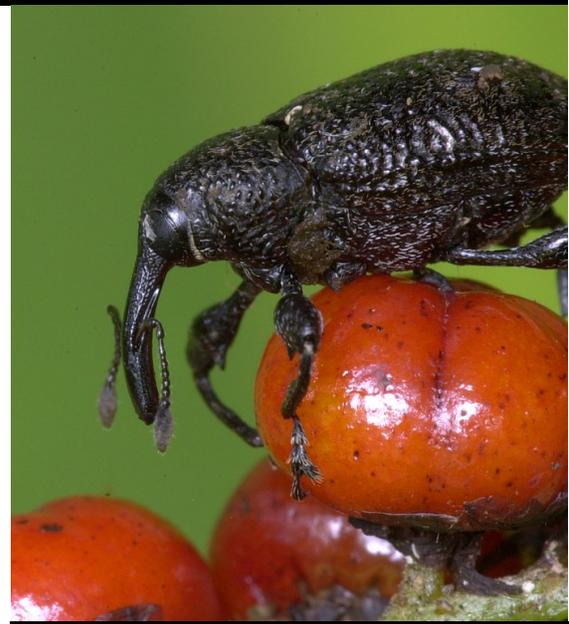
This three week course is oriented towards graduate students interested in intense training in the collection, identification and inquiry-based research on the largest order of insects, Coleoptera. Single site diversity in tropical rain forests, such as those in Costa Rica, has been estimated to be as high as 14,000 species. The study of beetles (including some of the largest and most beautiful of all insects) is not only fascinating, but economically important because the order includes numerous harmful as well as beneficial species that affect agriculture, forestry and man.

Emphasis of the field component of the course will be Neotropical species diversity, as revealed by a wide array of sampling and collecting methods. Students will gain experience in light trapping, flight intercept trapping, litter extraction, and other collection techniques. They will come away with a better understanding of morphological characters necessary for identification and phylogenetic reconstruction, and new ideas for designing their own studies and research on coleopteran diversity. This fieldwork, lab identification, and hands-on research experience will be complemented by a lecture series that will cover systematics of Coleoptera on a global scale with emphasis on Neotropical groups. The organization of the lecture series will emphasize distribution of taxa among habitats in order to more directly link lecture content with the field component. The course will take place in the exceptionally diverse wet forest habitats at the La Selva Biological Station.

The course will consist of three projects and the lecture series.

Faculty-led project: The Faculty will lead the students in a morphology based systematics project. Faculty will present an over-view of the discovery, description and phylogenetic placement of a hypothetical new species that will be “discovered” during the course.

Group projects: Each project is designed to develop team organization and cultivate a positive group dynamic to achieve common objectives. Students will be divided into three groups, each with a faculty advisor. They will implement a single sampling method and will identify beetles represented in the samples to the lowest taxonomic rank possible. The results will be compared and contrasted among the three groups to achieve an understanding of the complementarity



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and biases among sampling techniques.

Independent projects: Each student will develop and implement an independent project that will be nested within their group project. Students will select a genus group taxon for morpho species sorting and analysis. At the close of the class, oral reports will be presented on the results of these investigations.

Taxonomy Lecture Series: Eight lectures will be presented (1.5 hours/lecture) covering the higher classification and family-level taxonomy of Coleoptera. These lectures will be organized by habitat with emphasis on dominant taxa within each habitat. Larger families (e.g., Staphylinidae, Scarabaeidae) will be treated to the level of major subfamilies. Priority will be given to taxa expected to be represented in field collected samples.

Lecture Series:

- ◆ Taxonomy overview: suborder and superfamily classification of world Coleoptera.
- ◆ Coleoptera inhabiting soil and litter/soil interface.
- ◆ Coleoptera inhabiting ground surface forest litter.
- ◆ Saproxyllic Coleoptera and introduction to fungivory.
- ◆ Fungal specialists.
- ◆ Epigeal Coleoptera 1: Herbaceous and understory Coleoptera.
- ◆ Epigeal Coleoptera 2: Arboreal Coleoptera, including wood borers.
- ◆ Unique and unusual habitat specializations.

Course Instructors:

Dr. Christopher Carlton
 Professor and Director, Louisiana State Arthropod Museum, Louisiana State University Agricultural Center.

Dr. Richard A. B. Leschen
 Coleopterists, New Zealand Arthropod Collection, Landcare Research, New Zealand.

Dr. Nathan Lord
 Associate Professor, Department of Biological and Environmental Sciences, Georgia College and State University, Milledgeville, Georgia.

Victoria M. Bayless
 Curator, Louisiana State Arthropod Museum, Louisiana State University Agricultural Center.

TUITION:
 \$ 1400 OTS consortium applicants
 \$ 2100 Non-consortium applicants

A limited number of partial need-based scholarships are available, with first priority to OTS consortium applicants and Latin Americans. Costa Rican residents are eligible for a full scholarship.

Tuition includes 5 academic credits awarded through the University of Florida Levin College of Law for participants from eligible academic institutions. Continuing education credits may also be available.

FURTHER INFORMATION:

Guiselle Castro
graduate@tropicalstudies.org

For course content:
 Eileen Hebets ehbets2@unl.edu

APPLICATION DEADLINE:

February 3, 2016 (for priority consideration, followed by open enrollment until filled; 20 participants)

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