

## **Project Report, CSE grant, Center for Systematic Entomology**

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Project title: Taxonomic Revision of *Polycentropus* (Trichoptera: Polycentropodidae) from the Eastern Nearctic

Travel Dates: March 1 – March 14, 2020

### **Summary of Trip:**

During my two week visit to the Clemson University Arthropod Collection (CUAC), I was able to work in the extensive aquatic insect collection and focus on the caddisfly (Trichoptera) material. My host, world-renowned Trichopterist Dr. John Morse, was kind enough to provide all of the tools to make the most of my trip and answer my many caddisfly-related questions. During my visit, I sorted through thousands of specimens, examined many dozens of specimens, and ultimately borrowed dozens more for additional work. I was able to look at rare and type material and encountered a tentatively undescribed species.

I was able to learn or improve upon multiple techniques, for example clearing genitalia with the lactic acid method and rendering line drawings in Adobe Illustrator. I was also able to take advantage of being near the type locality of a rare species and collected numerous larvae from the site which will be used in my ongoing research. For the benefit of the collection itself, I am helping with the transfer of specimens from degraded stopper-topped vials to evaporation resistant screw-top vials. Additionally, I am helping to digitize the specimen data for those specimens I am working on to be included in the searchable CUAC database.

With the borrowed and collected material, I will generate molecular sequence data to attempt associating life stages of my focal species group. I will also build on the morphological matrix that I worked on quite a bit during my visit to generate taxonomically and phylogenetically informative data. Ultimately I hope to revise the *Polycentropus confusus* species group, describing the male and females and providing keys to all species.

The opportunity to work in the CUAC afforded to me by the Center for Systematic Entomology grant has bolstered my research and knowledge in the field of Trichopterozoology. Working with a giant in the field and a fellow Trichoptera systematics PhD student, among a wealth of invaluable material, and being able to compare material through collected across many years and all over eastern North America in one place has truly reinforced my love of this field and posed wonderful new research avenues for later years. Material that I have collected, including undescribed species and undescribed larvae and females of several species to be described during my work, will be deposited at CUAC and the Florida State Collection of Arthropods upon completion of my dissertation.



Photo 1: Alex Orfinger working on caddisfly specimens during his visit to the Clemson University Arthropod Collection for his ongoing PhD research. Photo by Matt Green (Clemson University).



Photo 2: A male specimen of a potentially undescribed species of *Polycentropus* (Trichoptera: Polycentropodidae). Part of the specimen's abdomen was dissected and cleared for examination.