

Project Information for the ATBI Aphid Study Project

Principal Investigator: Colin R. Favret

Project Description: Aphididae of GRSM, Illinois Natural History Survey (DLIA2003-21, DLIA 2005-32)

Project Dates: **Start Date:** 4/1/2003 **End Date:**

Protocol:

Project Notes:

Summary:

The first survey targeting the aphids (Insecta: Hemiptera: Aphididae) of the Great Smoky Mountains National Park was conducted in summer of 2003, with the financial assistance of a grant from Discover Life in America . The PI spent two weeks in the park, those of May 30 and 12 July, primarily collecting aphids directly off of host plants, and also by using a sweep net and "bug-vac." In all, 70 collections were made.

Several thousand aphids were collected and a series of adults mounted to microscope slides. Immature aphids are difficult or impossible to identify so they were not mounted, nor were "excess" adults from large colonies. The DNA was extracted from a single specimen from each of 40 host-associated collections, and that specimen and a sampling of others were mounted to microscope slides in Canada balsam. We were able to identify 201 of the 320 specimen slides and found 37 species we could identify. There may be a dozen or so species in the undetermined material, but they will require more work. Some unidentified specimens are from mass samples and we may not be able to identify them beyond the genus level.

The aphids were identified, labeled, and databased. The data are now searchable on the Internet at http://ctap.inhs.uiuc.edu/insect/search_inhs.asp. The data are also here provided. The plant specimens have been identified, curated, and added to the INHS herbarium. Ants tending the aphids were also collected, but they are still being identified and their determinations will be added to the database at a later date. All specimens are currently deposited at the Illinois Natural History Survey, although we will send duplicate aphid slides to the GRSM collection and the National Aphid Collection (USDA, Beltsville , MD) when the multi-year project is complete.