

## ENTOMOLOGICAL STUDIES AT THE UWM FIELD STATION

Although the invertebrate fauna represents the greatest number of species and individuals within most animal communities, little work on them has been done at the UWM Field Station. Most of the invertebrate work which has been done used insects, which are the largest class of animals. This reflects the orientation of the invertebrate zoologists at UWM towards the Center for Great Lakes Studies and the lack of an entomologist orientated to field work. This report is a statement of where we stand at the Field Station as far as past entomological research is concerned and where we are going in the next year or two.

### PAST RESEARCH

#### *Reference Collection*

The primary work done on insects has been the development of a reference collection. The present collection consists of about 400 specimens representing 11 orders, with half of the specimens being Lepidoptera (moths and butterflies) and Coleoptera (beetles). (Table 1). In nearly all cases the collection has been keyed down to family. Generic and specific information for all but the Lepidoptera and Odonata (dragonflies, etc.) is meager. The collection is housed in insect boxes in a Zoological-Ornithological specimen cabinet at the Field Station.

This collection resulted from the efforts of Ms. C. Meyer working in 1971 and Ms. M. Plonczynski and Mr. J. Ingold working primarily in 1975 and 1976. Ms. Meyer obtained most of the Lepidoptera and this part of the collection is a catalogued one. Ms. Plonczynski did most of the other collecting and her collections are not catalogued. In addition to the pinned collection, there is a small alcohol collection. Primarily, this is a collection of ants done by Mr. G. Schultz in 1975.

The collection has some serious drawbacks which we are trying to rectify. First the cataloguing of the Lepidoptera is being revised so that the catalogue information will appear on the pin along with the insect. Secondly, the classification of the insects is being worked on to get most down to species. This work is being done by Mr. Pleyte and M. Kunowski.

The current collection is primarily a summer collection with almost no collecting being done from October through May. We will be working on a winter and spring collection this year. Also most of the collection has been obtained from black lighting, sweep netting, butterfly netting, and advantageous looking. Tree sugaring, ground and aerial trapping, and soil and litter sampling have been used only sparingly, if at all. Future work will employ these other methods also.

The collection has emphasized the larger, pinnable insects. More of the smaller and soft bodied forms have to be collected and maintained. Also work on the insects within the bog area is poorly represented and thus work in these areas must progress. The same can be said for the aquatic immature forms. Lastly, the collection should be housed in its own insect cabinet with each family (genus) within its own unit tray. This will make the collection both easier to use and also maintain it for a longer period of time in the excellent condition it is in.

### *Other Projects*

About the only other use of insects at the Field Station, has been the research on the ant species present at the station and the use of insects by our Animal Ecology class during their study of diversity. The latter is an excellent study not only from a teaching standpoint but also from a research one. The study uses sweep net samples and water trap samples. Each sample is keyed down to order (family?) which provides the basis for diversity calculations. This year we have established a permanent numbered, pinned, reference collection for this study. The diversity can then be calculated on a species level. The name of the species will be obtained as time allows. However the data from the class can be compared from year to year and may prove useful in documenting ecological changes at the Field Station.

## ONGOING AND FUTURE RESEARCH

We are currently starting a project on the population genetics of one of the common underwing moths *Catocala concumbens*. This is a large moth found in the upland woods of the station. We are looking at the amount of enzyme polymorphisms which exist in this species in relation to the amount which should be present based on theoretical consideration. The Field Station represents a base line for the comparisons to other remnants of the climax forest found in southeastern Wisconsin. Currently the electrophoretic techniques which will be used are being perfected on a small sample of *C. concumbens* collected in September.

Additionally, projects using dragonflies are in the planning stages by two of our Ph.D. students. Mr. T. Pleyte is planning to look at competitive exclusion between the northern and southern species of the genus *Somatochlora*. Ms. M. Melville is planning to look at some aspects of the behavior of dragonflies.

TABLE 1: Summary of the pinned insect collection at the UWM Field Station. The number of specimens for each group includes duplicates and triplicates in some cases. For the Lepidoptera and Odonata some species are represented by members of both sexes.

<i>Order</i>	<i>Number of Specimens</i>	<i>Number of Species Identified</i>
Odonata	32	8
Orthoptera	20	None
Hemiptera	38	None
Homoptera	14	None
Neuroptera	3	None
Coleoptera	85	3
Mecoptera	6	None
Trichoptera	4	None
Lepidoptera	125	56
Diptera	37	None
Hymenoptera	37	None

## CONCLUSION

There are many other projects involving insects which could be performed at the Field Station. Most of the equipment which is needed is available at the station. The diversity of habitats makes it ideal for the study of diversity, competition, successional changes, habitat preferences, natural selection, etc. What we lack the most is individuals who are interested in looking at the largest class of animals, the class Insecta.

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