

LOCAL ZYGOPTERA

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ABSTRACT

During the summer of 1990, a collection was made of the damselfly species on the UNDERC property in Gogebic County, Michigan and Vilas County, Wisconsin. Damselflies are of the order Odonata, suborder Zygoptera. The other suborder under Odonata is Anisoptera, commonly called dragonflies. The purpose of this collection is to provide a reference of the species indigenous to the land for future use. A total of eighteen species from three families, Calopterygidae, Coenagrionidae, and Lestidae, were collected.

INTRODUCTION

An endless list of reference sources is always needed. The purpose of this collection is to provide a list of the species of the Zygoptera found on UNDERC property. This property is used extensively for biological research, so all data which can be compiled about the area will be valuable for future assistance. If a compact reference source is compiled about a specific area then researchers will not need to waste time and energy plowing through lengthy unnecessary files.

MATERIALS AND METHODS

The insects were collected with large butterfly nets, and placed in glass ether killing jars. The damselflies can be fairly easily swept up by sweeping low to the ground and through the bushes. They are not very aggressive fliers; although, they do not seem to be deterred by cool weather, contrary to the dragonflies. They were then frozen to insure that the creatures had in fact died. The next step involved spreading the insects on wooden spreading boards so that the wings would lie back flat. A characteristic of the Zygoptera is that they fold their wings back against their bodies while resting, whereas the Anisoptera will rest with their wings out horizontally; although they too need to be spread. After at least forty-eight hours, the insects could be taken off the boards and identified. The insects were identified using keys from The Odonata of Canada and Alaska, and An Introduction to the Aquatic Insects. They were placed on dissecting pins and stored in cedar boxes with some naphthalene to protect them.

Actually, a few problems arose in the identification process. It was very difficult to identify these animals due to their minute size and delicacy. Body parts were constantly falling off. If the insects were put on pins early, before identification, this made it difficult to view the bodies from all angles under the dissecting scope. If too much time elapsed between their death and the placing on the pins, the brittle creatures fell apart in the process. It was important to get the animals off the boards as quickly as possible before they dried out too much, but they could not be taken off too soon for the wings would fold back to their natural position. This is a delicate task, and sometimes

quite frustrating.

RESULTS

From the collection efforts over the summer, eighteen species were gathered. The list of the species is in appendix A with a four star scale to give an idea of the relative abundance in the general vicinity. The individual locations of collection are under appendix B with listing of the species found at the particular site.

The two species under the one genus Calopteryx were collected from Brown Creek, but were also seen at Tenderfoot Creek. These were not found unless there was a stream nearby. These are readily distinguishable by their characteristic metallic green and dark coloring. The species in the family Coenagrionidae were definitely the most diverse and abundant. The most common genus was Enallagma. The species could be seen along the roadsides, in bushes next to lakes, in the plants surrounding bogs, and in marshes. Many of the species of the Coenagrionidae family are very similar and need to be looked at in great detail to discern the correct species. They are also the smallest of the species. The third family Lestidae were intermediate in diversity; they were mainly found around marshes and swamps, as opposed to being around the open water.

DISCUSSION

The chemical used to kill the damselflies was ether, a rather distastefully smelling chemical that also had the negative side effect of causing rapid fading of the insects' coloring. This is rather sad, because some of the species are most brilliantly colored; the preservation of these colors would be a definite plus. They are a beauty to look at, and would give later viewers a more accurate idea of the creatures' features while alive. This would aid in identifications.

This collection is by no means complete, but it does provide a base from which to begin. Species are not stationary, and the local composition will change over time. For now, the list, added to the collection of Anisoptera, gives a good indication of the Odonata on UNDERC property.

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APPENDIX A: List of the Species of Zygoptera Collected
and Relative Abundance

ZYGOPTERA

RELATIVE ABUNDANCE
****=very abundant
* =least abundant

CALOPTERYGIDAE

Calopteryx aequabilis ***

Calopteryx maculata ***

COENAGRIONIDAE

Chromagrion conditum ***

Enallagma boreale ****

Enallagma carunculatum *

Enallagma civile *

Enallagma clausum *

Enallagma cyathigerum *

Enallagma ebrium **

Enallagma hageni ****

Ischnura verticalis ****

Nehalennia gracilis ***

Nehalennia irene ****

LESTIDAE

Lestes disjunctus **

Lestes dryas ***

Lestes forcipatus ***

Lestes rectangularis **

Lestes unquiculatus *

APPENDIX B: List of Areas Where Zygoptera Were Collected
and What Species Were Found at The Site

BIG LAKE: 7/11

Ischnura verticalis

Nehalennia spp.

BROWN CREEK: 6/15

Calopteryx spp.

Chromagrion conditum

Enallagma hageni

Ischnura verticalis

CRANBERRY LAKE: 5/31

Chromagrion conditum

Enallagma civile

Enallagma clausum

Enallagma cyathigerum

Enallagma hageni

FOGGY LAKE: 7/9

Ischnura verticalis

Nehalennia sp.

GILBERT/PALMER LAKE: 7/11

Enallagma hageni

Lestes rectangularis

Lestes forcipatus

JOHN CAROZZA'S TREE FROG MARSH: 7/2

Enallagma cyanthigerum

Ischnura verticalis

Lestes dryas

Lestes forcipatus

LANGFORD LAKE: 7/9

Enallagma boreale

Ischnura verticalis

MAIN ROAD: 7/2

Enallagma boreale

Ischnura verticalis

Lestes dryas

Lestes forcipatus

MARSH ACROSS FROM FOREST SERVICE BOG: 5/30

Enallagma boreale

Enallagma carunculatum

Ischnura verticalis

Nehalennia irene

Lestes unquiculatus

MARSH NEAR MISTY LAKE: 7/9

Chromagrion conditum

Enallagma ebrium

Enallagma hageni

Lestes disjunctus

Lestes dryas

Lestes forcipatus

MISTY LAKE: 7/9

Enallagma boreale

Nehalennia irene

MOOSEHEAD LAKE: 7/9

Ischnura verticalis

NORTHEAST ROAD: 7/13

Enallagma hageni

Nehalennia spp.

Lestes disjunctus

Lestes forcipatus

NORTH GATE BOG: 5/28, 7/12

Enallagma boreale

Enallagma ebrium

Enallagma hageni

Ischnura verticalis

Nehalennia spp.

Lestes rectangularis

PLUM LAKE: 6/13

Enallagma carunculatum

Enallagma cyathigerum

Ischnura verticalis

ROACH LAKE: 5/30, 6/14

Ischnura verticalis

Nehalennia spp.

SWAMP TO BROWN LAKE: 7/11

Enallagma boreale

Lestes dryas

Lestes inequalis

TENDER BOG: 7/2

Nehalennia spp.

TENDERFOOT CREEK: 7/2

Ischnura verticalis

Nelalennia spp.