

SURVEY AND INVENTORY OF GYRINIDS OF THE PRIMITIVE TEXAS BIG THICKET

Project Description

I propose to establish a gyrinid TWIG of the Big Thicket ATBI through a survey and inventory of gyrinid diversity in the Primitive Texas Big Thicket.

Introduction

The Gyrinidae are a cosmopolitan family of beetles with approximately 700 species in 13 genera. Gyrinids inhabit the surface of a wide variety of aquatic environments, including: ponds, lakes, creeks, swamps and bayous. Gyrinids are unique for their many aquatic adaptations, such as: a highly streamlined exoskeleton, a toxic defense secretion, strongly flattened middle and hind legs for rapid swimming (50-60 kicks per second), Johnston's organs capable of detecting minute water vibrations, and a pair of divided compound eyes. Gyrinids are commonly observed forming aggregations which may contain several species in up to three genera. New species have been discovered as recently as 2004 and several regions within the United States are potential habitats for new species of gyrinids (Babin and Alarie, 2004).

Existing Survey and Taxic Estimates

Gyrinids are true aquatic insects and given their habitat preference, the Primitive Texas Big Thicket, which is comprised of several aquatic corridors, is a likely bastion for gyrinid diversity in North America north of Mexico. 56 species of gyrinids in four genera are reported from America north of Mexico: *Dineutus* MacLeay (11 species), *Gyretes* Brullé (3 species), *Gyrinus* Müller (41 species) and *Spanglerogyrus* Folkerts (1 species) (Babin and Alarie, 2004). A preliminary survey examining the composition of gyrinid aggregations in the Big Thicket revealed several interesting observations as well as new locality records. Ten species of gyrinids in three genera were collected in the Texas Primitive Big Thicket. However, many areas of the Big Thicket have not been surveyed and the potential for finding new species is high.

Table 1: List of Gyrinid species reported from Texas, U.S.A. (Data from Babin and Alarie, 2004; Oygur and Wolfe, 1991; Wood, 1962)

DINEUTUS	GYRINUS
<i>Dineutus analis</i> *	<i>Gyrinus aeneolus</i>
<i>Dineutus assimilis</i>	<i>Gyrinus analis</i> **
<i>Dineutus carolinus</i> *	<i>Gyrinus elevatus</i>
<i>Dineutus ciliatus</i> *	<i>Gyrinus gibber</i> **
<i>Dineutus discolor</i>	<i>Gyrinus parvus</i> **
<i>Dineutus emarginatus</i> *	<i>Gyrinus pachysomus</i> **
<i>Dineutus productus</i>	<i>Gyrinus plicifer</i>
<i>Dineutus serrulatus</i>	<i>Gyrinus woodruffi</i> **
<i>Dineutus sublineatus</i>	
GYRETES	
<i>Gyretes sinuatus</i> **	

Gyretes torosus

* reported from the Primitive Big Thicket

** new locality record within the Big Thicket

Project Methods

Collecting, processing and disposition of specimens. Gyrinids will be collected with dip nets from lotic and lentic aquatic sites. The smaller genera (*Gyretes* and *Gyrinus*) will mostly likely be found close to the water's edge, under over hanging banks or branches. All specimens will be preserved in 85-90% ethanol for identification and processing. Representative voucher specimens from all localities will be deposited in collections at Sam Houston State University.

Literature Cited.

Babin, J., and Y. Alarie. 2004. Taxonomic Revision of Genus *Gyretes* Brullé (Coleoptera: Gyrinidae) from America North of Mexico. *The Coleopterists Bulletin* 58(4): 538-567.

Oygur, S. and G. W. Wolfe. 1991. The Classification, Distribution and Phylogeny of North American (North of Mexico) Species of *Gyrinus* Müller (Coleoptera: Gyrinidae). *Bulletin of the American Museum of Natural History* 207: 1-97.

Wood, F. E. 1962. A synopsis of the genus *Dineutus* (Coleoptera: Gyrinidae) in the Western Hemisphere. Ph.D. thesis, University of Missouri, Columbia MO. 99 pp + 8 plates.