

Terrestrial Snails of the Ethician Foundation Preserve, San Jacinto Co., Texas

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November 14, 2016

On October 8, 2016, two collections of empty shells and leaf litter were made by Ben Hutchins (TPWD), to provide an initial survey of the terrestrial snail fauna present at the site (Table 1). Because the property sites atop the Miocene Fleming Formation, a calcareous clay, mud, and sandstone deposit, we had expectations of high snail diversity. Particularly in the often acidic soils of East Texas, snail diversity is often limited by calcium availability. One collection took place in calcareous mixed grass prairie, and a small patch of scrub and woodland, and the second collection took place in an adjacent upland hardwood forest.

Table 1: Location data for samples.

Site	Zone	Easting	Northing	Uncertainty (+/- m)
Flemming Formation prairie site	Z15R	285332	3414233	100
Flemming Formation woodland site	Z15R	285035	3414170	50

Thirteen species were collected at the prairie site, and 18 species were collected at the woodland site (Table 2, Appendix A). Although the total number of individuals appears greater at the woodland site (Table 2), this can be due to differences in the amount of leaf litter collected at the two different sites, so total numbers should not be taken to represent true difference in the density of individuals at the two sites.

In general, the prairie species represent a subset of the woodland species, and some of these species are probably restricted to relatively mesic scrub and woodland patches within the prairie. However, a few species, including *Gastrocopta sterkiana*, *Rabdotus dealbatus*, and *Linisa texasiana* are commonly found in more xeric, grassland and savannah habitats and probably represent ingenuous components of the prairie snail fauna. The amber snails (family Succineidae) are represented by about a dozen species in documented from the state. However, the taxonomy of this group is currently in disarray, and species-level determinations are not reliability possible, particularly using shell morphology alone. Consequently, amber snails were only identified to the family level.







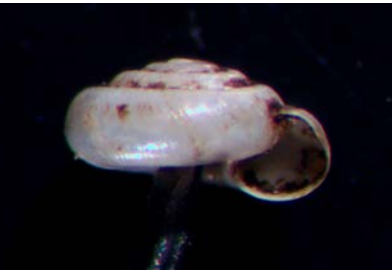












Thirteen of the twenty documented species represent new county records for San Jacinto County. Although these new records represent over half of the species collected, the occurrence of these species in San Jacinto County is not surprising given that they occur in nearby counties. The documentation of these species for the first time in San Jacinto County illustrates the lack of sampling for small snail fauna rather than sustentative additions to our knowledge of the distributions of these species. To illustrate this, without exception the species that had previously been documented in San Jacinto County are all

over 5mm in diameter and the new county records are all for species under 5mm in diameter. Nevertheless, with 20 species documented, the Ethician Foundation site represents an important site for snail diversity in the state. Species richness is comparable to the most diverse snail sites yet documented in the state, including mesic limestone canyons in the southeastern Edwards Plateau and high-elevation, mesic talus slopes in the Chisos and Davis Mountains. Furthermore, the list of species in table 2 is almost certainly incomplete. Future sampling should target riparian and bottomland hardwood sites for additional species. Repeated sampling of prairie and upland sites also has the potential to yield additional species records and should be conducted in mid- to late-spring, when precipitation spurs vegetative growth and increased snail activity.

*Table 2: Number of individuals of each species collected. * represent new county records.*

Species	Prairie Site	Woodland Site
Carychium mexicanum*	3	21
Daedalochila leporina	1	11
Euconulus trochulus*		11
Gastrocopta contracta*	7	26
Gastrocopta pentodon*		9
Gastrocopta sterkiana*	2	1
Glyphyalinia indentata		4
Hawaiiia miniscula*	8	12
Helicina orbiculata	2	5
Helicodiscus parallelus*		6
Linisa texasiana	5	
Punctum minutissimum*	1	4
Pupoides albilabris*		2
Rabdotus dealbatus	5	
Striatura meridionalis*	2	10
Strobilops texasiana*	15	45
Succineidae undet.		12
Triodopsis vultuosa	1	4
Vertigo milium*	6	29
Vertigo oscariana*		8

Appendix 1: Photographic index of snail species collected at the Ethician Foundation Preserve. Scale bars = 1 mm where shown.

				
<i>Carychium mexicanum</i>	<i>Daedalochila leporina</i>	<i>Euconulus trochulus</i>	<i>Gastrocopta contracta</i>	<i>Gastrocopta pentodon</i>
				
<i>Gastrocopta sterkiana</i>	<i>Glyphyalinia indentata</i>	<i>Hawaiiia miniscula</i>	<i>Helicina orbiculata</i>	<i>Helicodiscus paralellus</i>
				
<i>Linisa texasiana</i>	<i>Punctum minutissimum</i>	<i>Pupoides albilabris</i>	<i>Rabdotus dealbatus</i>	<i>Striatura meridionalis</i>
				
<i>Strobilops texasiana</i>	<i>Succineidae undet.</i>	<i>Triodopsis vultuosa</i>	<i>Vertigo milium</i>	<i>Vertigo oscariana</i>