LAND SNAILS OF BELIZE

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INTRODUCTION

Land Snails of Belize documents one hundred fifty-seven native and two exotic land snail species from twenty-three families. One hundred twenty-two species are recognized with a remaining thirty-five species undetermined possibly new to science, endemic or range-restricted to Belize.

Belize belongs to a much larger biotic region including Mexico and Central America that contains many biomes, different geological structures, complex physiographic features and a myriad of ecological settings. The number of recorded land snail species (an estimated 1239 taxa) from this area is about 35% of the actual fauna predicted with as much as 65% remain undiscovered. Recent efforts have documented an estimated 85-90% of the total fauna expected to occur in Belize.

Belize is divided into three land snail regions: the North (Corozal, Orange Walk and Belize Districts) which includes a unique biome, the Dry Tropical Forest, Western Slopes of the Maya Mountain Divide (Cayo District) and Eastern Slopes of the Maya Mountain Divide (Toledo and Stann Creek District).

The Maya Mountains Massif (East and West) is one of the most important molluscan regions in Belize and indeed in Central America, a result of early geographic isolation of the mountains. Northern Belize harbors one of the most endangered biomes in the world, the Dry Tropical Forest. Interesting subregions such as Tower Karst of the savanna of the Belize District and Yalbac Hills (border of Orange Walk and Cayo Districts) add to the overall biodiversity. Terrestrial gastropods are critical components in ecosystems as food sources to several taxonomic groups and dispersers of critical fungi and other taxonomic groups.

STUDY AREA

The study area encompasses all of Belize and also includes species that may occur in the adjacent borders of Mexico, Guatemala and Honduras.

METHODS

Recent surveys were conducted beginning in 2007 with focus initially on the Bladen Nature Reserve and the southern Maya Mountains. Habitats surveyed included karst foothills to the Volcanic Maya Mountains, base of limestone outcroppings, caves, floodplains of the Bladen River, and aerial habitats such as tank-bromeliads. Large land snails over 5 mm in size were hand-picked from these locations while land snails under 5 mm in size were secured from leaf-litter collections. These leaf-litters were dried under laboratory conditions and then sorted. All recovered and identifiable shells were assigned to species using "An Annotated Checklist and Bibliography of the Land and Freshwater Snails of Mexico and Central America (Thompson, 2011), Fred Thompson (pers. com.), and Bouchet and Rocroi (2005).

RESULTS

Land Snails of Belize documents one hundred fifty-seven native and two exotic land snails from twenty-three families representing species found during surveys conducted from 2007 to the present as well as museum records and literature of past collectors. One hundred twenty-two species are recognized with a remaining thirty-five species undetermined possibly new to science, endemic or range-restricted to Belize.

Eucalodium belizensis, n. sp. was recently described by Thompson and Dourson (2013) and is considered extremely rare, only known from the type locality.

One of many species of animals that benefit from land snails, the speckled snailsucker, *Sibon nebulata* who's primary diet consist of *Drymaeus* species of land snails

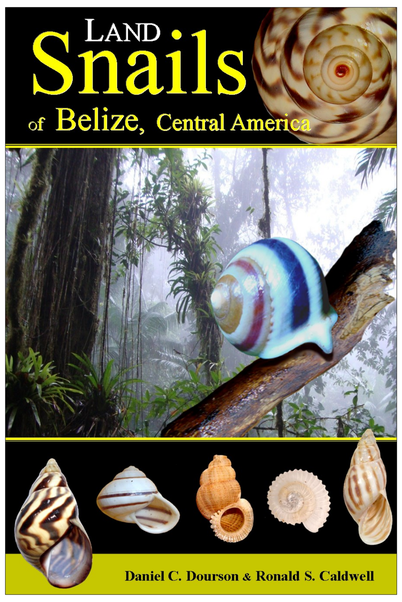
Talus Lucidella, *Lucidella* species (undetermined)

DISCUSSION

In general, our understanding of gastropod diversity, ecology and distribution is vastly incomplete, particularly in tropical regions of the world and Belize is no exception. The Maya Mountains has developed a rich snail fauna including a number of range-restricted and endemic species. *Land Snails of Belize* brings together past research and current survey work and includes images of the species (some photographed for the first time) to provide a baseline reference for future work in Belize and in the region. Numerous species await scientific description.

Eucalodium belizensis, n. sp, Thompson and Dourson (2013)

New Land Snail Book for Belize by Dourson & Caldwell



Orange-lip Dome — HELICINIDAE

***Helicina oweniana,* (Pfeiffer,1849)**

Diameter: 8-10 mm wide, 8 mm tall

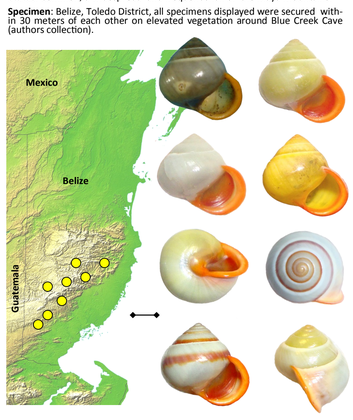
Description: Dome-shape; lip reflected and painted orange, aperture roundish, with an operculum; shell with 4.5 whorls; imperforate; color of shell can vary greatly from buff to grayish-blue or even yellow and are with or without color bands (below images showing the remarkable shell color variation in *H. oweniana*), the orange lip however appears to be a constant and reliable feature; periphery well rounded.

Similar Species: Other *Helicina* are without an orange lip

Habitat: A species of limestone regions, becoming less common at higher elevation acidic soils; usually on the undersides of Heliconia leaves and other elevated vegetative places.

Status: Common, a widespread and frequent snail of the Maya Mountains.

Specimen: Belize, Toledo District, all specimens displayed were secured within 30 meters of each other on elevated vegetation around Blue Creek Cave (authors collection).



Banded Crater — NEOCYCLOTIDAE

***Neocyclotus dysoni berendti* (Pfeiffer, 1861)**

Diameter: 17-21 mm wide, 15 mm high

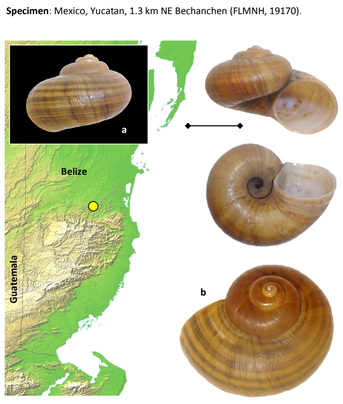
Description: Heliciform; lip simple, aperture oval to roundish, with an operculum; shell with 4 whorls; umbilicate; olivaceous, straw colored with multiple light bands of various widths (figures a & b); shell has a dull gloss; periphery is well rounded; a detritivore, feeding on decaying vegetation.

Similar Species: *Neocyclotus dysoni* has a higher shell profile and is without the revolving bands; similar to *Amphicyclotus* but smaller, has a much thinner shell and has a more narrow umbilicus.

Habitat: Found on limestone hillside around Big Hill in southern Belize where it can reach large numbers.

Status: Reported from St. Hermann's Cave entrance at Blue Hole National Park, Cayo District; Corozol Town, Corozol District; San Pedro Columbia, Toledo District (S. P. Christman, 1989).

Specimen: Mexico, Yucatan, 1.3 km NE Bechanchen (FLMNH, 19170).



Belize Globe — XANTHONICHIDAE

***Drytrochus trigonostoma* (Pfeiffer, 1844)**

Diameter: 25-30 mm wide

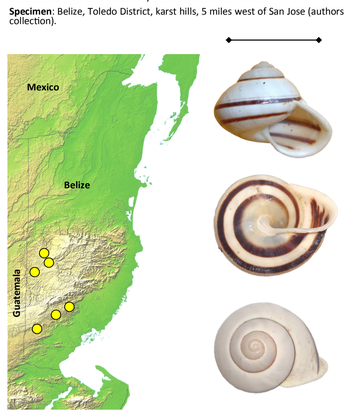
Description: Heliciform; lip reflected, aperture oval and without an operculum; shell with 4-5 whorls; imperforate; shell surface glossy, thick with conspicuous black bands of varying width; shell color bone white, some specimens having a yellowish tinge; periphery well rounded.

Similar Species: Helicinidae species are 15 to 20 mm smaller; other heliciform land snails of similar size are without the contrasting color features.

Habitat: Found only sparsely in topical rainforests along wet limestone in the lower Bladen River valley and Macaw River Gorge, becoming more frequent in southern portions of the Maya Mountains, especially on higher and wetter limestone; this colorful gastropod is thought to live on trees.

Status: Uncommon; the species appears to be sparsely but widespread in southern Belize and is never very abundant where it is found.

Specimen: Belize, Toledo District, karst hills, 5 miles west of San Jose (authors collection).



Mayan Drum — UROCOPTIDAE

***Eucalodium belizensis* Thompson and Dourson, 2013**

Height: 50-60 mm tall (without top)

Description: Cylinder-shape; shell widest at the bottom; lip reflected; shell without top having around 10 whorls; the lost top (d) having around 15 whorls; the entire shell reaching a length of more than 75 mm; perforate; with an operculum; shell well constructed and heavy-duty; the shells internal axis is solid (figure c) and ribbed; sutures shallow; shell with a dull gloss and copper color; well developed transverse striae on all whorls; without any notable spiral striae; the last whorl roundish.

Similar Species: Similar to *Coelocentrum gigas* but smaller, lighter in color and most importantly has a solid axis not open.

Habitat: Found in topical rainforests, under leaf litter covering karst foothills.

Status: Rare, ENDEMIC to BELIZE, known only from the type locality; less than a dozen shells have been found and one live specimen from which it was formally described..

Specimen: Belize, Toledo District, 5 miles west of San Jose (authors collection).