

GEOGRAPHIC DISTRIBUTION OF EXTANT REMIPEDIA IN ANCHIALINE CAVES, MATANZAS, CUBA

Geographic Distribution

Caribbean Region: Yucatan Peninsula, Bahamas, Belize, Cuba, Turks and Caicos and the Dominican Republic

Other Locations

Canary Islands, Lanzarote (Atlantida Tunnel / lava tube), Western Australia, Exmouth (Bundera Sinkhole)

Specific caves in Matanzas

Located on the southern coast of Matanzas:

Cueva Susana (Dietz/King 2024/2025)

El Brinco (Dietz/King 2024/2025)

Cueva Maribel (Dietz/King 2024/2025)

Situated in the town of Playa Giron:

Cueva de los Carboneros (Yager 1994)

Cueva 1900 (Bozanic 1992)

Comment: We found extant Stygiomysid in Cueva Maribel.



Stygiomysids do not swim with the water column. These anchialine critters are crawlers, preferring rocks, wall and the ceiling of their habitat.

Habitat

Remipedia and Stygiomysid are exclusively found in anchialine caves. These caves are submerged with surface openings and subsurface connections to the sea.

They typically have a meteoric water layer (fresh or brackish) overlying deeper marine water. Some caves have an additional layer of hydrogen sulfide (H_2S).

Remipedes live in the dark beneath the density halocline in low oxygen water. Salinity in these caves can vary, but is generally quite low. Temperatures in the caves range from 22 to 26°C.

Density interface is created by differences in salinity and temperature. Remipedes and Stygiomysid often inhabit deeper parts of the cave, below the halocline.

Origins of Anchialine Fauna

A cave fauna often shows highly unusual distributions in isolated locations of opposite sides of the Atlantic and Pacific Oceans and are considered Tethyan relicts.

Various hypotheses have been proposed to explain the origin and distribution of anchialine fauna.

Vicariance Model (Plate Tectonics)

Regression Model (Shoreline of late Mesozoic)

Deep Sea Origin (Cave and deep sea are old environments)

Active Migration Model (Colonize empty niches)

Source: Thomas M. Iliffe



Photo credits: Jorgen Olesen and Wesley Skiles

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Editor: Peter Dietz, Friedensstraße 38, 61184 Karben pezdama69@gmail.com www.yellowsharkdiving.de