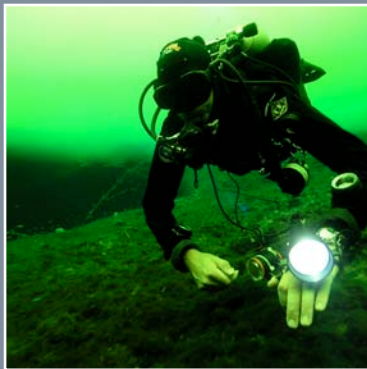


# CAVE SAMPLING

Aug. 27th-Sept. 8th 2006



Ponderosa Cave System



Foraminifera *Ammonia beccarii*

## Project Members

McMaster University

Dr. Eduard Reinhardt

Dr. Patricia Beddows

Peter van Hengstum

Jeremy Gabriel

Zero Gravity and Aqua Exploration

Daniel Riordan

Fred Devos

Cave Exploration

Simon Richards

## Reconstructing Yucatan Cave Environments using Microfossils

Thecamobians and foraminifera are testate amoeba that inhabit fresh to marine water environments around the world. They have exploited every aquatic niche from the deep sea to lakes and marshes. These organisms produce a shell (microfossil) which are about the size of a grain sand, and are found in abundance in the sediment, with a tablespoon often containing thousands of specimens. They are also very sensitive to environmental change, with certain species living in specific aquatic environments. This makes them very useful for reconstructing past environments and how they changed through time. So, we can retrieve a sediment core, examine the succession of microfossils in the sediments and reconstruct environmental changes that have occurred in that location through time.

This technique of environmental reconstruction is well developed, and often used in the oil industry, having been applied in many locations around the world, from oceans, lakes, deltas, lagoons etc. However, it has never been applied in the cave environment. We know nothing of the distribution of these organisms in cave systems and their potential for understanding the environmental evolution and paleohydrology of caves. The research is still in its infancy, but based on preliminary results showing that thecamoebians

and foraminifera inhabit the cave environment it looks promising.

The 2006 project (Aug 27th to Sept 8th) retrieved sediment and core samples from Ponderosa, Aktun Ha and Mayan Blue. Further analysis in

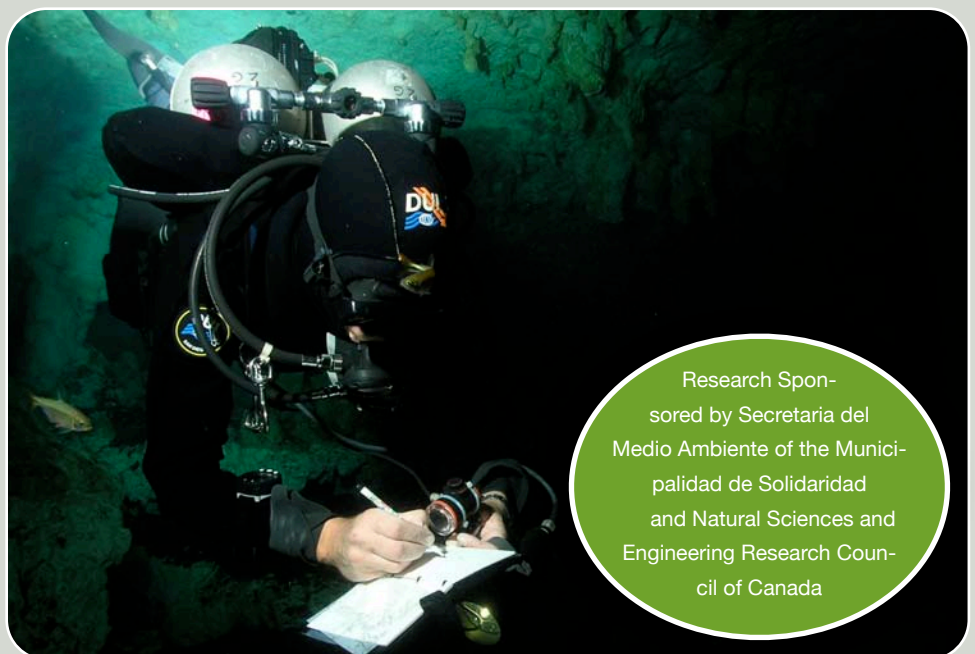
Ponderosa Cave System



Thecamoebian *Centropyxis aculeata*

the laboratory over the next year will determine the distribution of species relative to environment (eg. salinity, light etc.) to interpret species changes we find in the sediment cores. Radiocarbon dating will place the core sediments in a temporal context allowing a reconstruction of the cave environment through time.

No doubt this preliminary work will pose further questions that will require further sampling and research to fully understand the cave system. However, we hope this research will make a significant contribution to our understanding of how the cave systems evolved to what they are today.



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