CALIFORNIA STATE SCIENCE FAIR
2014 PROJECT SUMMARY

Name(s)
Emily B. Hughes

Project Number
34770

Project Title
Extreme Fossil Snails: A Question of Survival

Abstract

Objectives/Goals
The purpose of this project is to identify two species of Ordovician Gastropods and then determine if either of these species survived the End-Ordovician Extinction and due to what factor. Finally, if one or both survived, to determine whether some of their biological and ecological characteristics are present in modern gastropods today.

Methods/Materials
In the summer, I began documenting and recording information about saltwater periwinkle snails. Later, I compared this information to two species of fossilized gastropods. I researched as much information as I possibly could about these two species, and conducted tests and measurements on their size distribution and average size.
The materials used varied for the different components of the project. Over the summer, I took pictures documenting the periwinkle snails that cluster near the edge of a creek. Later, I counted and classified the fossilized snails from the Ordovician Period, and these each required different materials.
Periwinkle Materials: Notebook, camera, plastic bags, measuring tape, different sized coins, periwinkles
Fossilized Snails: Measuring app, computer, image j app, fossil specimens, camera, taxonomic papers on Ordovician gastropods.

Results
Two fossil snails were identified; the planispiral snail is Clathrospira and the high spired snail is Murchisonia. Based on literature research, I discovered that Murchisonia, the high-spired gastropod survived the end Ordovician extinction but the planispiral species, Clathrospira, did not.
Hypothesis one is falsified.

Size data, as well as morphology and eating habits of the fossil snails were compared to that of the modern periwinkles. In particular, Murchisonia was compared because only this genus survived the mass extinction. The similarities between the periwinkles and Murchisonia are:
1. Both are (were) grazers, unlike the planispiral species.
2. Both have a high spired shell.
3. The two had similar size ranges for adult snails (see analysis).
Hypothesis two is confirmed.

Conclusions/Discussion
My project showed that environment does not affect whether or nor a species will survive a mass

Summary Statement
This project is a research of why gastropods can survive mass extinctions, and it focuses on what factors there are that allows them to.

Help Received
Aunt Carolyn helped take pictures, and Robyn helped find rocks, and gave advice.