California Science Center

CALIFORNIA STATE SCIENCE FAIR
2001 PROJECT SUMMARY

Your Name (List all student names if multiple authors.)
Erik W. Finck

Project Title (Limit: 120 characters. Those beyond 120 will be ignored. See pg. 9)
Hermit Crab Shell Selection

Science Fair Use Only

J1808

Division
X **Junior (6-8)** _ **Senior (9-12)**

Preferred Category (See page 5 for descriptions.)
18 - Zoology

Abstract (Include Objective, Methods, Results, Conclusion. See samples on page 14.)
Use no attachments. Only text inside these boxes will be used for category assignment or given to your judges.

OBJECTIVE: This project was executed to determine if hermit crabs preferred fresh water snail shells, washed down from the Carpinteria Salt Marsh, over marine snail shells commonly found in the Carpinteria tide pools. My hypothesis was that hermit crabs did indeed prefer fresh water snail shells over those of marine origin because the majority of the hermit crabs observed in these tide pools inhabited the fresh water snail shells from the salt marsh.
MATERIALS AND METHODS: Eighteen hermit crabs were gathered from the tide pool at the Carpinteria State Beach. They were then placed in a 13" x 48" glass aquarium divided into eight equal chambers. Each chamber included equal numbers of olivella, fresh water, horn and miscellaneous snail shells that had been matched to the size of the shell that the crab had occupied when harvested. They were observed daily and the shell that they were occupying was recorded.
RESULTS: 50% of all the crabs chose olivella shells, while 28% chose fresh water shells, and 22% chose miscellaneous shells. None of the crabs selected horn shells. These numbers greatly differed from the shells that they had been found in at the tide pool, which were 45% fresh water, 44% olivella, and 11% miscellaneous.
CONCLUSION: The results of this experiment show that hermit crabs prefer olivella shells over the fresh water snail shells, which was against my hypothesis. I believe the crabs in the tide pools are selecting fresh water shells because there is an abundance of them. This experiment has added to my understanding of the nature of hermit crabs and has created even more questions that I intend to answer.

Summary Statement (In one sentence, state what your project is about.)
My experiment is designed to determine if hermit crabs prefer to inhabit fresh water snail shells over marine snail shells.

Help Received in Doing Project (e.g. Mother helped type report; Neighbor helped wire board; Used lab equipment at university X under the supervision of Dr. Y; Participant in NSF Young Scholars Program) See Display Regulation #8 on page 4.
Ranger Linda Tornello authorized gathering shells and crabs and gave me advice, UCSB professor Miriam Polne-Fuller gave me advice, Dottie and Vern from Aquatic Gardens gave me advice on how to create a suitable environment for the crabs.