CALIFORNIA STATE SCIENCE FAIR
2011 PROJECT SUMMARY

Name(s)

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Project Number

31005

Project Title

Is It a New Species?

Abstract

Objectives/Goals

There are many species within the genus of clams Tucetona. Recently a clam emerged from Baja California that fit in the genus Tucetona, but did not fit into any of the species already described. The clam was studied by taking observations and measurements by counting, sketching, and observing under a microscope. Similar studies were done on Tucetona bicolor, Tucetona multicostata, and Tucetona strigilata, clams in the same genus, to act as a control. They were then compared to the new shell and found to be similar, yet different, confirming that the clam is new. A scientific article was written and the clam was recorded as a new species. The next step for this project is to research more about the fossil record of Tucetona isabellae and study, describe, and publish scientific articles on more possible new species of clams.

Methods/Materials

Clam Specimens: Axinactis inaequalis, Tucetona flabellate, T. bicolor, T. strigilata, T. multicostata; Clam of interest: Tucetona sp. 1; Scientific articles and journals (see Reference List); Calipers; Nikon D1 camera with lighting system; Lab counter; Dissecting microscope; Forceps; Lab notebook, pens, and pencils.

I. Research background information on species description
II. Research background information on Tucetona sp. 1, location and distribution, family, genus, and species
III. Consult expert scientists in the field (see Reference List)
IV. Take observations and measurements of Tucetona sp. 1; shape, sculpture, color, hinge plate and teeth, adductor muscle and pallial scars, inner ventral crenulations and ribs, and chevron grooves by counting, sketching, and observing under a microscope
V. Repeat observations and measurements done in step 4 with the Clam Specimens (see Materials List)
VI. Compare observations and measurements from steps 4 and 5
VII. Analyze data and compile observations, measurements, and analyses into a scientific article for publication to describe and record the clam of interest as a new species of bivalve mollusk
VIII. Take pictures of Tucetona holotype, paratype, syntype, and vouchers.
IX. Publish scientific article in Zootaxa

Summary Statement

I tested and described the characteristics of a clam to determine whether or not it was a new species.

Help Received

Materials and guidance supplied by the Invertebrate Zoology Department at the Santa Barbara Museum of Natural History.

Preliminary