

Tatum
et al

to snakes in that their presence in the snakes' feces requires discussions with the Gulf Coast Herpetological Society and local veterinarians.

CREATION OF A DATABASE TO ENHANCE SLIDE IDENTIFICATION AND ORGANIZATION

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The purpose of this project was to install a database system for the organization of 35 mm slides. The cross-referencing ability of the database will provide easier accessibility for patrons of the aquarium and local teachers who wish to purchase or view the slides. The divisions of existing slides include: plants, marine mammals, terrestrial mammals, reptiles, amphibians, marine and aquatic fish, and marine invertebrates. The specific objective of this database system is to categorize all plant slides according to genera, species, common names, and habitats. Upon completion of this research, each category mentioned above will subsequently follow the same pattern of cross-referencing by future interns.

THE IMPORTANCE OF STUDENT INVOLVEMENT IN CAMPUS ACTIVITIES CAPTURED BY VIDEO ANALYSIS

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Participation in student activities beyond the classroom and cooperative interaction among students and faculty are important factors in insuring collegiate success. Students who affiliate with a club or who attend college functions expand their horizons, increase their skills, and prepare themselves for better citizenship and leadership. Students at a commuter campus often do not get involved because of jobs, family responsibilities, and lack of awareness of what is available. This project will produce a comprehensive video of student activities to be shown at all orientation sessions. After filming events and developing a storyboard, the film will be edited and narrated to form a finalized video. The purpose of this production is to educate students concerning the variety of activity offerings and encourage students to participate in them.

DEVELOPMENT OF TRAINING VIDEO FOR DETECTING MOISTURE IN SCALLOPS USING THE OHAUS ANALYZER

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This video will be used for training NMFS consumer safety officers in analyzing scallops for moisture content. Various aspects in the development of this project included interviews with the scientific staff at the Laboratory, literature research for proper scientific procedures, development of script, videotaping of process and equipment, editing of raw footage, and post-production editing for the master video tape. Due to numerous locations of consumer safety officers, the use of training videos provides both labor and cost savings for the Laboratory and the National Marine Fisheries Service.

DEVELOPMENT OF SUPPLEMENTAL COMPUTER INTERACTIVE STUDY AID FOR ANATOMY AND PHYSIOLOGY STUDENTS

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Students enrolled in Anatomy and Physiology courses often have difficulty assimilating the vast quantity of information presented. Instructors within the Science Department at the Community College believe students' instructional time can be enhanced by interactive computer programs designed to supplement and reinforce information offered in the classroom. An interactive computer program was developed incorporating Anatomy and

Physiology graphics and review questions and answers for student practice. It is hoped that this interactive program will encourage students to review materials more often as well as provide a means for them to determine areas of weaknesses and strengths in order to better apportion their study time. It is also hoped that this program will reinforce the student long term retention of information and ultimately lead to better grades and more knowledgeable graduates.

ZOOLOGY AND ENTOMOLOGY

ANALYSIS OF INORGANIC AND ORGANIC CONTAMINANTS IN FRESHWATER MUSSELS FROM THE BIG SUNFLOWER RIVER, MISSISSIPPI: OCT 1993

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Nine species of freshwater mussels from the Big Sunflower River were chemically analyzed for three classes of contaminants, including metals, pesticides, and PCBs. Mussels were collected from eight sites, from river miles 34.5 to 150 (near Cleveland, MS). The metals Cd, Hg, Pb, Se, Ni, and Cr, were found at concentrations generally < 30 ppm dry wt. Hg concentrations were generally < 0.2 ppm dry wt. The animals did not contain PCBs, analyzed as Aroclors, at the 5 ppb detection limit. Many pesticides, however, such as toxaphene, DDT compounds, chlordane and dieldrin were found in the mussel tissues. Most of the concentration were in the < 0.1 ppm wet wt. range, however, some of these mussels contained toxaphene at concentrations > 0.35 ppm wet wt. The metals and pesticides found were not specific to any one site or mussel species but were evenly distributed. Statistical analyses of the data were used to determine whether the contaminants exceeded USFDA action limits or USFWS predator protection limits. There was a proposal to harvest these animals for their shells and to use the tissues for animal feed. Based on these analyses it was recommended that the tissues not be used as animal feed.

GENETIC CHARACTERISTICS OF A LABORATORY POPULATION OF EARTHWORMS (*EISENIA FETIDA*) BETWEEN 1987 AND 1993

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In 1987 a laboratory population of *E. fetida* was established from 750 earthworms purchased locally. Periodically this population was supplemented with additional earthworms from the original source. By 1993 the population had grown to approximately 10,000 individuals. Since 1987, our laboratory has conducted physiological genetic experiments which have assumed implicitly that genetic effects have been due to experimental protocols and not to extraneous factors occurring in the stock laboratory population. A comparison of the population in 1987 vs. 1993 reveals almost no differences in genetic structure at 5 polymorphic loci sampled on both dates: *Pgm*, *Gpd*, *Mpi*, *Pgd*, *Mdh*. In 1987 all loci were in Hardy-Weinberg equilibrium, and in 1993 all loci except *Pgm* were in HWE. Between sample dates, there were no significant differences in mean frequency of common alleles (0.643), heterozygosities (0.449), or heterozygote deficiencies (0.008). There is no evidence that selection, drift, migration or non-random mating has altered the genetic structure of this laboratory population. Supported by NSF grant DEB-9221094 to WJD.

SOIL MOISTURE AND TEMPERATURE HAVE DIFFERENT EFFECTS ON MULTILOCUS HETEROZYGOSITY - GROWTH RELATIONSHIPS IN THE EARTHWORM *EISENIA FETIDA*

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Heterozygosity-growth relationships in many species are often found under environmentally stressful conditions. This experiment examined the effects of temperature and soil moisture stress on multilocus heterozygosity (MLH)-growth relationships in *E. fetida*. Earthworms were grown under all possible combinations of the following temperatures and moisture levels: 20°C & 25°C and 2, 3, & 4 ml H₂O/g dry peat moss. MLH for 8 polymorphic loci was determined using starch gel electrophoresis; growth was measured for a 2-week period early in development.