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HELMINTH PARASITES OF *TRACHEMYS SCRIPTA ELEGANS* OF SOUTHERN OKLAHOMA. Carol L. Bratt, LeeAnn Bowerman, Don Lee, and Dr. Kenneth D. Andrews. Biology Department, East Central University, Ada, OK, 74820.

Testudines are a heavily parasitized group of poikilotherms and are commonly host to multiple species infections. There is a paucity of current data on the helminth parasites of Oklahoma Testudines. Much of the available data is in excess of fifty years old. Our findings show much needed information on parasites of Oklahoma Testudines and adds to the current knowledge. This will provide data for further studies. This work builds on a previous study in which fifty red-eared slider turtles (*Trachemys scripta elegans*) were collected from five counties in Southern Oklahoma and one county in Eastern Texas. These were dissected, size and sex recorded, and all organs inspected for parasites. Parasites were preserved in a formalin solution. Representative samples of each type of parasite found from each host were stained and histologically prepared for study. We are currently identifying these representative parasites to a specific level. Upon completion of identification, density of each species within *Trachemys scripta elegans* will be tabulated. Data will also be tabulated to provide information on parasite prevalence and frequency with relation to age and sex of the Testudines as well as a regional correlation of species. This data will be compared with previously recorded information to show changes in parasite density, abundance, prevalence, and incidence. We also expect to be able to show differentiation of the parasitic community of *Trachemys scripta elegans* based on the geographical location of the host.

OBSERVATIONS OF TWO UNCOMMON VARIATIONS FOR PROXIMAL BRANCHES OT THE FEMORAL ARTERY. Christina A. Evans, Kent S. Smith, and Kirby L. Jarolim. Department of Anatomy and Cell Biology, Oklahoma State University Center for Health Sciences, Tulsa, OK, 74107.

Normal variations of the subcutaneous and deep branches of the proximal part of the femoral artery are commonly observed on cadavers. Our study involves observations and descriptions of the deep branches of the proximal part of the femoral artery. These branches typically occur inferior to the subcutaneous arteries and include the deep femoral artery and the medial and lateral circumflex femoral arteries. The circumflex femoral arteries may arise from the deep femoral artery as a common trunk or with separate, distinct origins. The circumflex femoral arteries have also been reported as independent branches that arise from the femoral artery. Herein we describe two variations of the circumflex femoral arteries that have not previously been observed. First, we observed an unusually long common trunk for the medial and lateral circumflex femoral arteries that arises from the femoral artery inferior to the subcutaneous branches, but superior to the branch of the deep femoral artery. In addition, the common trunk of the circumflex femoral arteries is larger in diameter than the deep femoral artery. The second variation observed is a common trunk for the medial circumflex femoral and inferior epigastric arteries that arise from the femoral artery superior to the deep femoral artery.

ANALYSIS OF BACTEROIDALES 16S rRNA GENE SEQENCES FROM CHICKEN FECES. Jonathan Hatley, Tatsuya Akiyama, Lori Arney, and Cindy R. Cisar. Department of Natural Sciences, Northeastern State University, Tahlequah, OK 74464.

Fecal pollution in waterways is a serious environmental problem and tracking the source of the fecal contamination is an important step in remediation. Some bacteria present in feces have been shown to be host-specific. *Bacteroidales* are anaerobic bacteria that are common in the gut of warm-blooded animals and have been shown to be host-specific in ruminants, humans, pigs and horses. Amplification of host-specific *Bacteroidales* 16S ribosomal RNA gene (rDNA) sequences can be used to detect and identify the source or sources of fecal contamination in a water sample. In this study, chicken *Bacteroidales* strains were examined for their potential use as chicken fecal contamination indicators. DNA from chicken feces was amplified using 16S rDNA primers specific for *Bacteroidales*. The PCR products were cloned and sequenced. Published *Bacteroidales* 16S rDNA sequences were aligned with 16S rDNA sequences obtained from this study and used to create phylogenetic trees. Phylogenetic analysis revealed a clade of six chicken fecal 16S rDNA clones that appears to be host-specific. Primer pairs for polymerase chain reactions (PCR) were designed based on the sequences from this clade. Future plans include testing the primer pairs in PCR reactions for their specificity and development of a chicken feces-specific PCR assay.

ENVIRONMENTAL FACTORS INFLUENCING THE GROWTH AND SPORULATION OF *STACHYBOTRYS ATRA*. Sabrina Scroggins, Charles Biles, and Terry Cluck. Biology Department, East Central University, Ada, OK 74820.

The fungus, *Stachybotrys atra*, is often found in water damaged buildings and has been associated with Sick Building Syndrome. Experiments were conducted to determine environmental factors that influence the growth and sporulation of *S. atra*. *S. atra* was isolated from a ceiling tile in the Physical and Environmental Science Building at East Central University. The fungus was grown on potato dextrose agar (PDA) for at least 7 days before being used in various tests. Growth of *S. atra* on corn meal agar (CMA) had the greatest growth diameter when compared to growth on potato dextrose, tile, carboxymethyl cellulose, Sabourand's, malt extract, and water agars. The fungus grew the same in both the light and dark environments. When concentrations of PDA were compared, the best growth occurred at 39 g/L. *S. atra* grew best at 30 °C and did not grow at 5 and 37 °C. When the 5 °C and 37 °C where placed at room temperature, the 37 °C exposed plates did not resume growth. Tile agar and PDA supplemented with $KClO_3$ showed inhibition of growth at 15 g/L and 10 g/L, respectively. CMA and Tile agar supplemented with Borate showed inhibition of *S. atra* growth diameters at 15 g/L and 10 g/L, respectively. Further experiments are being conducted to determine the effects of environmental factors on sporulation.

KERATINOCYTE SENESCENCE AFFECTS CELL MIGRATION, MORPHOLOGY DEGRADATION, BUT NOT DIFFERENTIATION OF *IN VITRO* SKIN EQUIVALENTS. Matt S. Skaley and Melville B. Vaughan. Department of Biology, University of Central Oklahoma, Edmond, OK 73034.

Replicative senescence suggests deficient telomere lengths instruct cells in culture to quit dividing and this may impact aging. The purpose of this study was to characterize the effects of skin keratinocyte senescence using an *in vitro* model called the skin equivalent. Our *in vitro* model was constructed of keratinocytes, fibroblasts, and collagen. This unique

construct reduces the number of variables, and allows use of senescent cells. After culturing, the tissues were histologically prepared, and immunohistochemistry was conducted to specifically examine the protein expression with respect to proliferation, differentiation, and structural stability. The presence of p63, BrdU, K14, and involucrin were all proteins associated with contributing to a marginal difference between young and old cells. Collagen IV showed a colossal distinction between young and old, therefore it is imperative to analyze the distribution of this protein. The potential collagenase activity related to collagen IV was also observed in laser wounded tissue as a factor that may explain increased migration in senescent cells. Future studies using this model hope to identify whether senescent cells could secrete proteins that enhance aging and promote morphological characteristics. Establishment of missing or decreased expression of proteins from old cells of the *in vitro* model could provide an opportunity in the future to understand the entire process of human skin aging.

ENVIRONMENTAL AND POTASSIUM CHLORATE EFFECTS ON THE GROWTH OF *CHAETOMIUM GLOBOSUM*. Desiree Wright and Charles Biles. Biology Department, East Central University, Ada, OK 74820

Mold infestation of building materials results in the production of allergens and potential mycotoxins. Molds have been implicated in causing human health problems at work and home. One fungus often found in indoor environments is *Chaetomium globosum*. This fungus produces sexual reproductive structures called perithecia that can be easily visualized on a media plate. Scanning electron microscopy, light microscopy, and stereo- microscopy were utilized to observe hyphae and perithecia production. Malt extract agar (MEA) was found to be the best media for determining hyphae growth and perithecia production, however, the fungus grew well on filter paper, gypsum board, ceiling tile agar, carboxyl-methyl cellulose (CMC) agar, and potato dextrose agar (PDA). Abundant growth of the fungus was observed on PDA, in which individual perithecia were indistinguishable and difficult to numerically quantify. No perithecia grew on CMC during the two weeks that the experiments were conducted. Potassium chlorate is known to mutate the nitrogen synthesis pathway in many fungi. Experiments were conducted to determine at what concentration of $KClO_3$ hyphae growth and perithecia production were inhibited. Hyphae growth was inhibited between 5 and 10 g/L of $KClO_3$ in MEA. Perithecia formation was inhibited in $KClO_3$ levels as low as 0.1 g/L. Enhanced pigmentation was observed when the fungus was grown at 30 °C when compared to 25 °C. Some kinds of media also stimulated a pink/red pigment formation. Light did not have an affect on the formation of perithecia. Results indicate that $KClO_3$ inhibits perithecia growth at low concentrations while not reducing hyphae growth until 50-100X greater concentrations are utilized. Currently, Wet-Scanning Electron Microscopy (Wet-SEM) is being used to further distinguish the effects of potassium chlorate on hyphal growth.