



**CALIFORNIA STATE SCIENCE FAIR
2007 PROJECT SUMMARY**

Name(s) Alexander J. Payne	Project Number J0720
Project Title Eocene Fossil Environment	
Abstract Objectives/Goals The goal of my research is to obtain a better understanding of the environment during the Eocene epoch through analysis of the plant and insect fossils I discovered during excavation of 45 million year old shale rock located at 9,000 foot Douglas Pass in Western Colorado in August 2006. Methods/Materials Fossils from shale rock including mosquito, bee, beetle, and several types of leaves and twigs Rock hammer Magnifying glass Millimeter ruler Pencil Paper Results The fossils were carefully examined and measured. Their features such as their length, width, abdomen size, wing size and leg lengths were evaluated. Leaf length, width, and features were also noted. These results were compared to their modern-day counterparts' features and measurements. The large leaf fossil was most consistent with the Black Willow (<i>Salicaceae</i>), known to grow in this region of North America. The fossil mosquito, bee, and beetle bore remarkably similar features and size with their modern-day counterparts. These animals and plants are known to co-exist in a warm climate with access to water most of the year. Conclusions/Discussion My hypothesis that the Eocene epoch would be warm and wet was supported by my fossil findings. The coexistence of a leaf similar to the Black Willow with mosquito, bee, and beetle suggest there was access to fresh, standing water in this environment 45 million years ago.	
Summary Statement Eocene Epoch Fossils Discovered at Douglas Pass, Colorado Confirm a Warm, Wet Environment	
Help Received Teacher, Mr. Kuhn guided project. Father accompanied on excavation trip. Sister assisted with photography. John Foster, PhD, Chief Paleontologist of the Museum of Western Colorado led the expedition and provided information on the age of the rocks.	