



**CALIFORNIA STATE SCIENCE FAIR
2004 PROJECT SUMMARY**

Name(s) Michael J. Boland	Project Number J1902
Project Title Antlion Natural History	
Objectives/Goals Antlions are insect larvae whose pit traps for ants are noticeable in sandy areas. I studied several aspects of antlion natural history. The question my main study addresses is, #If given the choice, do antlions prefer to build their pits in open sand or in sand under leaf litter?# My hypothesis is that antlions prefer to build their pits in open areas rather than areas covered with leaf litter because leaves would make it mechanically difficult for antlions to dig their pits, and leaves would make it possible for ants to climb out of the traps.	
Abstract Methods/Materials To answer my question, I did an experiment in which I gave antlions a choice of open, sandy areas or sandy areas covered with leaf litter. I filled three pans with sand and covered half of each pan with leaf litter. I then collected 33 antlions, and released 11 antlions into each pan at the border of the leaf-covered and sand-only sides. I recorded the number of pits visible on the sand-only sides every day for nine days.	
Results After just one day, most of the antlions had built their pits on the sand-only sides, and after nine days, 27 of the 33 antlions (82%) were on the sand-only sides of the pans.	
Conclusions/Discussion I conclude that antlions prefer building their pits in open sand, and will live in areas free of leaf litter when given a choice. I also conducted some more experiments on antlion natural history, from which I concluded that: 1) Antlions do not move around a lot once established; 2) An antlion can dig a pit in as little as 15 minutes; 3) Antlions can remove small debris from their pits; 4) Antlion pits are frequently found in open sand at the base of trees; and 5) Antlions can 'doodle' as far as 3.5 meters.	
Summary Statement I studied many aspects of antlion natural history, and in my main study I found that when given a choice, antlions will build their pits in areas of sand not covered with leaves.	
Help Received My mother and younger sister helped me collect antlions; my mother provided pans for my experiment; and my father drove me to Tijuana River Valley and helped photograph and measure antlion doodles.	