



**CALIFORNIA STATE SCIENCE FAIR
2013 PROJECT SUMMARY**

Name(s) Mounir J. Saunders-Newton	Project Number J2213
Project Title How Camouflage Affects the Predatory Behavior of Praying Mantids	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals Praying mantids use camouflage to avoid predation and to ambush their prey. Research shows that mantids pay attention to structural cues, by demonstrating a preference for a camouflage environment as opposed to an un-camouflaged environment. My project explored the effects of camouflage on hunting behavior. My hypothesis was that apprehension time of prey would increase in an un-camouflaged environment for praying mantids as compared to the camouflaged habitat.</p> <p>Methods/Materials I placed nine mantids into separate habitats; 3 Creobroter Pictipennis, 3 Stagmomantis Limbata, and 3 Phyllocrania Paradoxa. The mantids were fed wingless fruit flies every other day. I constructed two habitat environments for each species of mantids. The first habitat corresponded with, and matched each species's camouflage. The second habitat was absent of camouflage. After two weeks, I started testing by placing one mantis into the camouflaged matched habitat. After waiting 5 minutes to allow the mantis to find a comfortable position, I placed a fruit fly into the habitat, in front of the mantis, in the center of the habitat. Once the fruit fly was inside the habitat, I started the stop watch. After the first attempt to apprehend the fruit fly, I stopped the watch, recorded the time and position of the mantis. I conducted the same procedure with the other eight (8) mantids. I waited two days to conduct the second part of the experiment. Using the un-camouflaged habitats, I performed the same procedure. As before, after timing the first attempt to apprehend the prey, I recorded the data and repeated with the remaining mantids.</p> <p>Results Four findings emerged. First, there were differences in apprehension time averages across species. Next, differences in hunting behavior across species were observed. As hypothesized, apprehension times were less in the camouflaged habitat as compared to the un-camouflaged habitat. And finally, there was significant overlap in the range of apprehension times, across species, in the camouflaged habitat.</p> <p>Conclusions/Discussion While I predicted that apprehension times would be less in the camouflaged habitat, I did not anticipate that individual differences in performance would be greater in the camouflaged habitat as compared to the un-camouflaged habitat. By comparison, the lack of apprehension time ranges overlap between species in the un-camouflaged condition highlights differences between species.</p>	
Summary Statement The purpose of this project was to demonstrate the effect of camouflage on the predatory behavior of praying mantids.	
Help Received My mother purchased the praying mantids.	