



**CALIFORNIA STATE SCIENCE FAIR
2008 PROJECT SUMMARY**

Name(s) John Michael L. Jones	Project Number S2007
Project Title The Mantid Project, Year 7: Male Pheromone Production in Iris oratoria	
Abstract Objectives/Goals The objective was to use a y-maze to provide evidence that male Iris oratoria produce pheromones to signal their presence to female Iris oratoria. If all factors that could influence the movement of a female Iris oratoria are neutralized except the presence of male pheromones, then female movement towards the male indicates that male Iris oratoria produce pheromones, to signal presence. Methods/Materials A Y-maze configuration allows the subject to choose between two directions and was used to test male Iris oratoria for pheromone production. An air pump was used to move the air from the source area to the vicinity of the test subject. The test subject is placed on the X and a male is placed on the right side, in a container allowing airflow. The left side was the blank. The females movement was observed. Three different assays were performed. The first was as described above (scent only trials). The second was performed similar to the scent only but a female enclosed in a jar was placed next to the male as a visual aid (scent with model). The third assay was a visual only trial, where the male was placed in front of the view block inside a sealable jar. Results Females moved in different directions. The direction the females went was a direct result of many confounding variables. Blocking was utilized to divide the females according to age, oöthecae production, physical stability, and possible personality. Quadrant scores were assigned to areas in the Y-maze in order to allow statistical evaluation of female movement. Wild caught females consistently moved towards the male. Young adults most frequently avoided the male. Some females appeared to change their minds, stopping and redirecting, either toward or away from the male. Conclusions/Discussion During the Y-Maze trials, all factors but the variable were neutralized, however mixed reactions, rather than just movement towards the male, provide evidence for the production of male pheromones. During the trials, movement related actions of the females signaled either interest or disinterest in the male, the females knew the male was near. The induction of a pheromone enclosed female (the model) next to the male caused a decrease in the mean quadrant score, meaning a greater interest in the male. The most obvious deduction from this was that males produce more pheromones with a visual of a female.	
Summary Statement This series of behavioral assays whose purpose is to investigate possible male pheromones in Iris oratoria.	
Help Received Grandmother helped with board construction; Mother helped with editing.	