

Antsel and Gretal

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To discover whether an ant's pheromones can determine the route taken by another ant to a destination, an experiment was designed using different combinations of pavement, fire, and carpenter ants. I made a 4-foot (121.9 cm) by 2-foot (60.96 cm) rectangular wooden frame. Graph paper was smoothly placed on the floor and the frame kept on it. The camera was placed above the frame. The honey coated string was placed at $y=76$. The camera begins recording. Donning gloves, I picked up the first ant using tweezers and moved it to the coordinates (16,0). The ant was released. Once it reached the string, it was picked up and the recording was stopped. The graphs of the ant trails were created using the recording. The groups where all the ants were of the same species had a minor mean deviation of 1 cm. The groups where the pavement ant started, had the largest amount of deviation. The carpenter ant had an average of 10 cm of deviation while the fire ant had an 11.8 cm deviation as their averages. The carpenter ant groups had little deviation from fire ants (~1.15 cm) but the pavement ants had 9.4 cm of deviation. In the fire ant groups, the carpenter ants had deviated by 1.6 cm. The pavement ant deviated 14.5 cm (average). There is an impact on the route taken by an ant to its destination due to the chemical composition of the previous ants' pheromones and thus, my hypothesis was proven correct.