Oriented Crescentic Mounds of a Gardening Ant *Trachymyrmex septentrionalis* (McCook) -

(Abstract) In the spring of 1971, I noted compass orientation of 500 crescentic mounds of *T. septentrionalis* at localities 10 miles N of Gainesville and 20 miles N of Tallahassee, Florida. The raised spherical sectors of 438 mounds faced different directions, an observation corroborating earlier work (N. A. Weber, Gardening Ants: The Attines, 1972, p. 55). The mounds constructed on a slope were invariably opposite to the down-slope. I removed 50 mounds from an open, level area, and 30 from the area with approx. 50° slope; orientation of the reconstructed mounds was identical with that of the originals. Turn-table experiments showed that the ants oriented their mounds to some external cues, e.g., when the table was turned soil particles were placed in the original direction. When covered with 30cm diam. × 28cm tin cans for 7 days, mounds on the level ground were disoriented. Further, the ants constructed their mounds opposite to holes (i.e., windows; 2cm diam, 5cm from the ground) on each can.

Ants carrying soil particles were let through a 0.4cm diam, 2cm long glass tubing glued on a 30cm² piece of cardboard held vertically over the nest opening. In the diffused light of a Kodak safelamp (15-watt bulb, Filter OA) the ants oriented to the gravity along a constant angle of 30 ± 2°. When ants carrying soil particles were let through a tube onto a horizontal cardboard they placed their soil particles in all directions. When the cardboard was tilted 25° +, the resulting mounds were directly opposite to the slope, and in an arc. In all cases, ants carrying the particles traversed loops. When the glass tube was tilted through 25° + and the cardboard held horizontal, the ants placed soil particles in the direction of the tilt. However, when the plane of the cardboard was tilted 25° + in any compass direction, the ants placed the particles opposite to incline of the slope. Mound building in *T. septentrionalis* seems to involve gravitational and visual cues.

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