grip, she bit down and pulled back on her legs. Sometimes the mandibles cut directly through, lopping off one of the appendages or slashing open the abdominal wall. Often the ant either let go and maneuvered for a better grip or else held on while trying to drag the opponent backward. At this point one or more of her nestmates might join the attack, taking advantage of the temporary immobilization of the enemy. The ant under attack then found herself spread-eagled by enemies pulling in different directions. In most instances she was dispatched over the next few minutes by further mandibular cuts.

Encounters with alien members of the same species were exceptionally exciting to the *Oecophylla* major workers. Those not detained in combat dashed in swift and irregular patterns over the arena floor, their mandibles open and abdomens frequently lifted to a vertical position. Some returned to the nest tree while laying odor trails in the characteristic manner of intense long-range recruitment. As the trail layers encountered nestmates they antennated them vigorously while jerking their bodies back and forth in swift, exaggerated movements (Fig. 15). The ants jerked at a frequency of 8–12 back-and-forth movements/s, and their displays usually lasted less than a second (0.3–0.8 s). We were impressed by the close similarity between this body signal and the motions displayed by the same ants when dodging around enemy *Oecophylla* workers. The signal can be plausibly interpreted as a ritualized version of overt fighting behavior.

During the experiments those colonies won that were able to assemble the heaviest battalions of major workers. To use the celebrated phrase of General Nathan Bedford Forrest during the American Civil War, the winners arrived at the battle scene 'fustest with the mostest.' The colony with the highest density of workers present was victorious in the largest percentage of duels, since small groups were able to gang up more frequently on single opponents. As the combat d'usure proceeded, and fatalities mounted, the more weakly represented colony was gradually eliminated from the arena. It finally was able to hold ground on the thin wooden bridges leading to its nest tree, where small masses of workers were sufficient to halt superior forces of enemy invaders. Occasionally, a colony forced back at first eventually turned the tide when earlier recruitment efforts resulted in a new surge of major workers entering the field.

It seemed to us that colonies engaging an enemy in their own arena had an initial advantage due to the greater readiness with which their foragers entered the familiar ground. In order to test this impression and to determine the cues being used by the ants themselves, we performed the following experiments. We allowed two vigorous, queenright colonies (A and B) to become thoroughly familiar with their own, separate arenas; the workers were also allowed to mark the papered floors with anal spots for a period of two or more days. The long axes of the two arenas were set at an angle of 90° to each other. We then removed the foragers overnight, and the following morning permitted workers from both colonies to come into one or the other two arenas simultaneously. Just before this step, however, the spatial arrangement of the colonies and the test arena was changed so as to give one colony or the other the advantage of prior familiarity with the visual cues, or odor cues, or both kinds of cues: