Table 7. Attraction to preparations of various body parts by *O. longinoda* workers on their territories. In each replication of the five series (I–V) the equivalent of one body part was presented in competition with a dummy treated with ether alone (series I), left entirely untreated (II), or containing a different body part (III–V). The number given for each replication is the average number of ants attracted during a sequence of 16 30-s periods

Series		Replication number						p
		1	2	3	4	5	6	
I	Untreated control	2.3	2.7	4.2	3.8	3.5	1.8	<0.001
	Sternal gland extract	9.9	5.6	13.5	9.2	9.4	6.9	
II	Untreated control	0.3	1.7	1.0	–	–	–	<0.01
	Fresh sternal gland	3.7	4.6	5.5	–	–	–	
III	Hindgut extract	1.2	1.3	1.6	2.5	2.3	–	<0.001
	Sternal gland extract	8.2	4.5	6.9	8.1	6.9	–	
IV	Poison gland extract	6.3	3.9	3.8	4.3	3.6	–	>0.1
	Sternal gland extract	10.8	3.3	6.9	4.5	9.5	–	
V	Dufour's gland extract	10.6	3.2	4.4	2.9	3.6	–	>0.1
	Sternal gland extract	6.1	5.1	5.3	5.6	4.3	–	

they produced more aggressive responses, which were not followed by clustering in the manner induced by short-range recruitment.

Other lines of evidence support the conclusion that the sternal gland is the source of the pheromone used in short-range recruitment. When *Oecophylla* workers were picked off their territory with the fingers or a pair of forceps and held lightly, they rotated the terminal abdominal segment upward to expose the shining cuticular surface that covers the sternal gland. When released back onto the territory, they immediately performed the typical display of short-range recruitment. *Oecophylla* workers grappling during territorial fights lifted their abdomens and exposed the sternal glands by the same upward rotation of the terminal abdominal segment. When they broke apart they too performed the characteristic abdomen-dragging of short-term recruitment.

e) Long-Range Recruitment. When contacts with enemies became frequent, a few of the ants returned to the nest laying odor trails in the conventional manner. When such ants reached the nest tree, they stimulated nestmates to leave for the arena where the invasion had taken place. We refer to this interaction as 'long-range recruitment to enemies.' It differed from other forms of recruitment in at least four respects:

(1) The workers did not always begin to lay a trail as soon as the *Pogonomyrmex*, *Polyrhachis*, or alien *Oecophylla* were contacted. This behavior usually began only after a delay, often of a minute or more, and typically after engaging in short-range recruitment. Thus as the trail was deposited, the intruder was often not close to the trail's terminus.

(2) At low intensities the path of the trail-layer was typically very irregular in pattern and was interrupted frequently by periods of ordinary locomotion. The interruptions occurred most commonly after the recruiter had encountered