

Homing in a tropical social wasp: role of spatial familiarity, motivation and age

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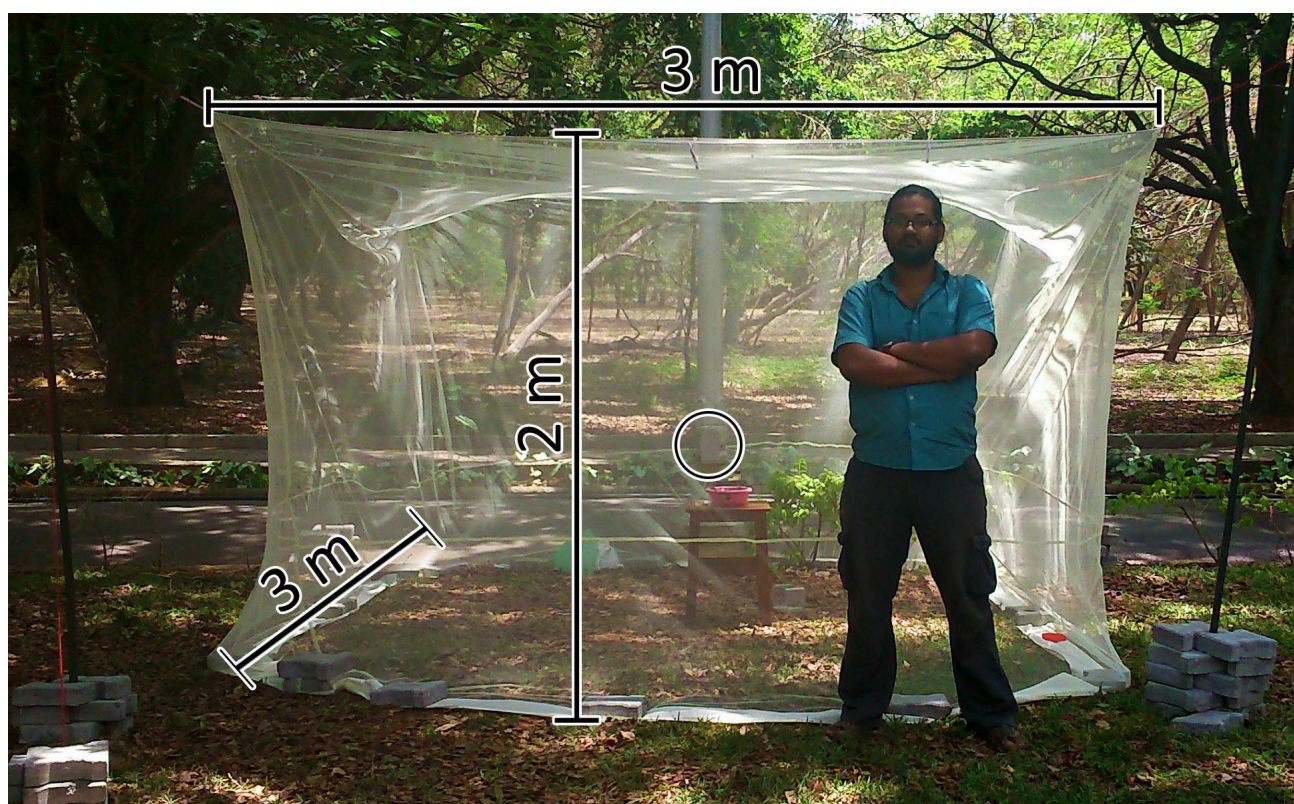


Fig. S1 One of the experimental mosquito net tents erected in the field for experiment 3. The experimental nest (N23) was inside the box attached to the lamppost (that contains fuse for the electric light) demarcated by the circle. Food and water were kept on the wooden stool. For the experiment, we included only those wasps that eclosed within this confinement and brought food from the feeder to the nest. After keeping this set-up for three months, we removed the tent and released the foragers 100 m away at the forest patch seen in the background. We repeated the set-up for another nest (N22) and released the foragers 50 m away

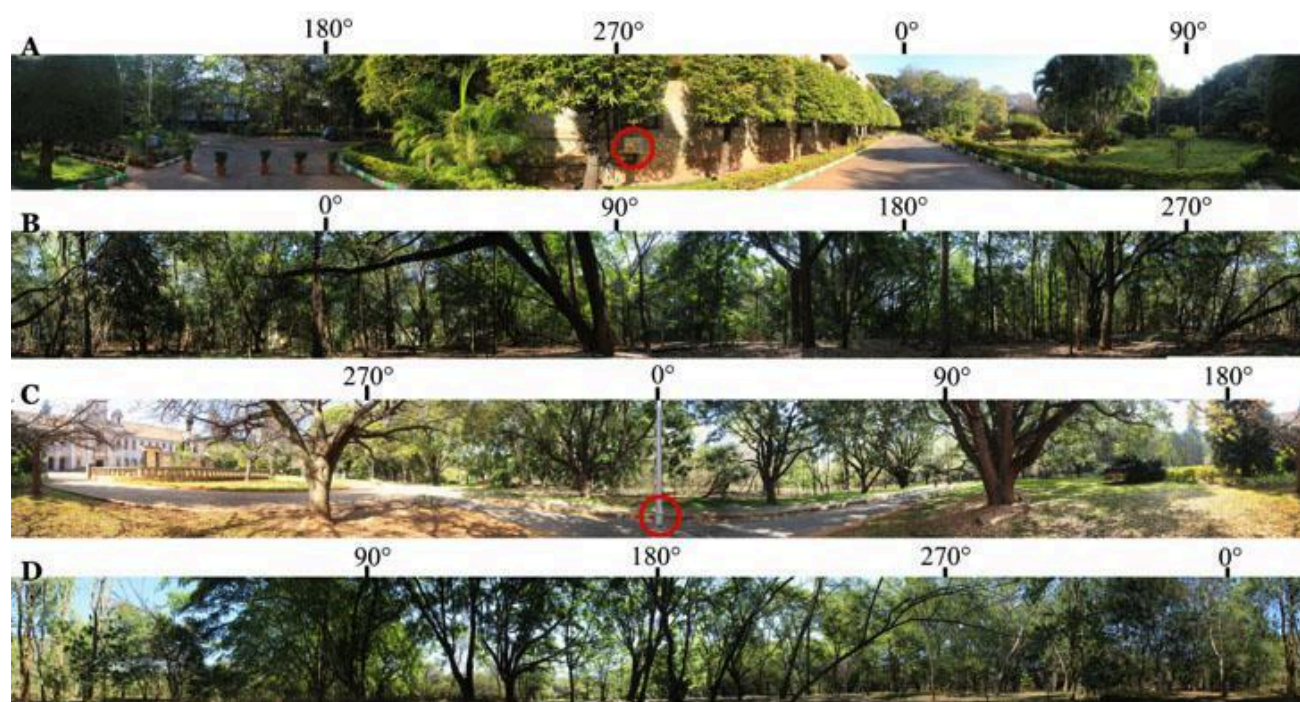


Fig. S2 Panoramic image ($360^{\circ} \times 48^{\circ}$) of the landscape near the nests and release sites for experiment 3. We captured images with Canon 700D camera and Canon 17-85 mm lens, and unwrapped the image using Adobe Photoshop software. The landscape near nest N22 and N23 is shown in panel A and C, respectively. The tower marked in Fig. 1 is a part of the building shown on the left side of panel C. Panel B shows the panoramic image of the location where we released wasps from N22, and is 50 m eastward from N22. Panel D shows the panoramic image of the location where we released wasps from N23, and is 100 m northward from N23. The colony N22 was located inside the electric box (marked with red circle) coinciding with 270° in panel A; hence the nest-ward direction from release site (shown in panel B) is 90° . Colony 23 was located inside the electric box (marked with red circle) coinciding with 0° in panel C; hence the nest-ward direction from release site (shown in panel D) is 180°

Table S1 Summary of the homing times taken by motivated and unmotivated forager wasps from different distances

	Motivated			Unmotivated		
Release distance (m)	50	100	200	50	100	200
Total releases	80	88	102	39	28	44
Unique animals used	51	59	63	27	22	34
Time taken to return to nest (in seconds)						
Minimum	7	30	50	18	109	212
Maximum	6049	12870	21810	11046	20169	22479
Mean	564	1006	2456	2628	5565	6787
Median	178	304	1239	1649	3343	5011
Number of wasps returned to nests						
within 1 minute	12 (15%)	11 (12.5%)	1 (0.98%)	4 (10.26%)	0 (0%)	0 (0%)
within 5 minutes	52 (65%)	44 (50%)	21 (20.59%)	9 (23.08%)	1 (3.57%)	1 (2.27%)
within 10 minutes	68 (85%)	60 (68.18%)	35 (34.31%)	11 (28.20%)	1 (3.57%)	1 (2.27%)
within 30 minutes	76 (95%)	78 (88.64%)	69 (67.65%)	22 (56.41%)	9 (32.14%)	6 (13.64%)
within 1 hour	76 (95%)	82 (93.18%)	86 (84.31%)	29 (74.36%)	15 (53.57%)	16 (36.36%)
beyond 1 hour	4 (5%)	6 (6.82%)	16 (15.69%)	10 (25.64%)	13 (46.43%)	28 (63.64%)
95 % wasps returned within						
in seconds	1759	4545	9987	9712	17386	21437
in minutes	29:19	75:45	166:27	161:52	289:46	357:17