SUPPLEMENTARY MATERIAL

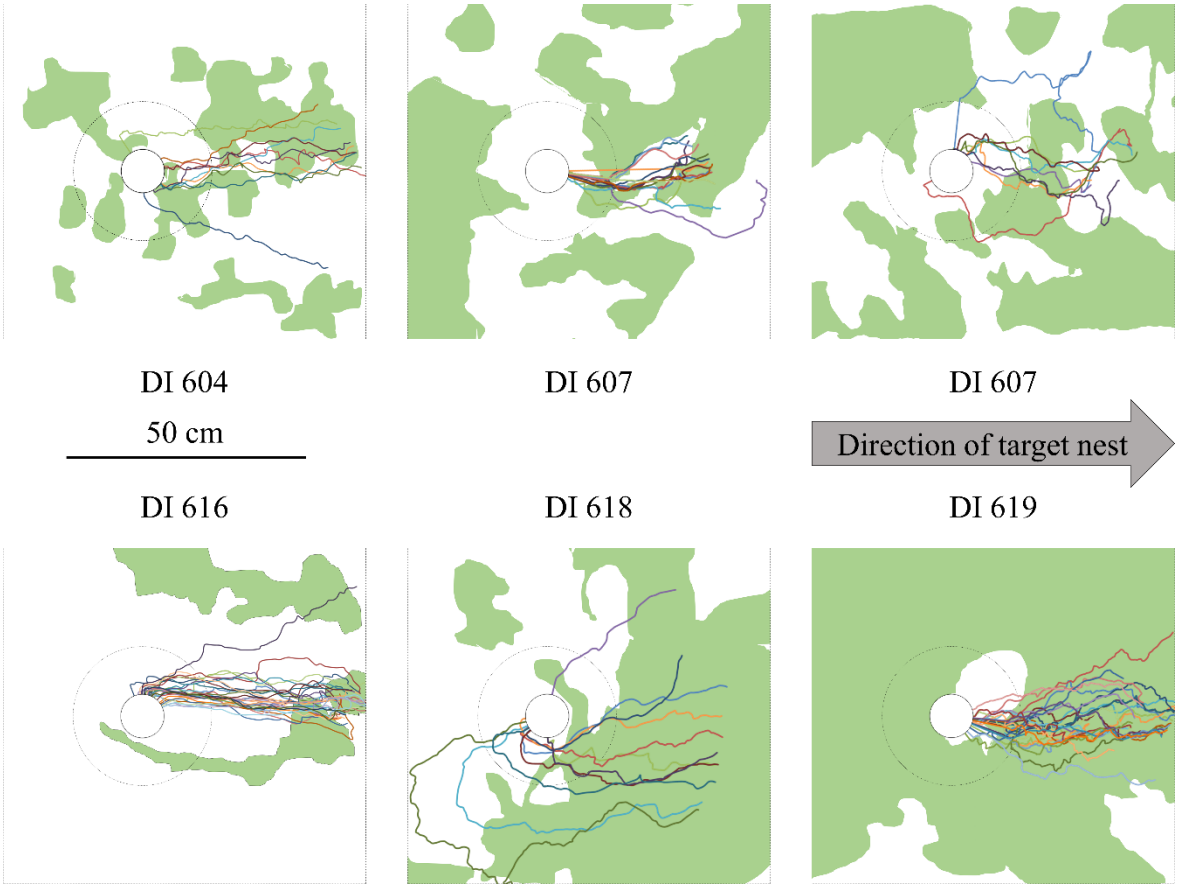

Fig. S1. — Maps showing subset of paths followed by transporters during colony relocation for six initiation-destination pairs totalling 105 transport events ($N_1 = 10$, $N_2 = 15$, $N_3 = 9$, $N_4 = 34$, $N_5 = 11$ and $N_6 = 26$), across five *Diacamma indicum* colonies. All relocations were conducted in their natural habitat and grassy patches in the experimental area have been marked green**.** The white disk represents the old nest (9 cm diameter); a 10 cm region extending from the nest exterior is represented using a dotted circle. Experiment with DI 607 yielded more than eight tracks for two of the target sites and hence both have been included. Note that all maps have been rotated so that the target nests fall directly to the right on the horizontal axis through the old nest.

Table S1a.

Results of the GLMM analysis considering a Gamma distribution to study the effect of type of transport on the speed of transporters.

Response variable				
Model	glmer(speed ~ transport_type + (1|colony_ID), family = "Gamma")			
Fixed effects	Estimate	SE	*t* value	Pr(>|z|)
(Intercept)	0.26925	0.02975	9.049	< **0.01**
Transport_typeRL	– 0.15523	0.03323	– 4.672	< **0.01**
Transport_typeTR	0.04016	0.01659	2.420	**0.015**
Transport_typeTRP	0.07140	0.02598	2.749	< **0.01**
Random effects	Name	Variance	Std. Dev.	
Colony_ID	(Intercept)	9.81E-04	0.03132	
Residual		0.0825	0.28718	
Number of obs: 220, groups: colony_ID, 7				
For comparison between the other types of transports, we releveled the variable ‘transport_type’ to change the base level, and then re-ran the model. The respective test parameters are depicted below.				

Fixed effects	Estimate	SE	*t* value	Pr(>|z|)
PT-RL	– 0.15523	0.03323	– 4.672	< **0.01**
PT-TR	0.04016	0.01659	2.420	**0.015**
PT-TRP	0.07140	0.02598	2.749	< **0.01**
RL-TR	0.19539	0.03470	5.631	< **0.01**
RL-TRP	0.22663	0.02444	9.271	< **0.01**
TR-TRP	0.031244	0.027353	1.142	0.253

Table S1b.

Results of the GLMM analysis considering a Gamma distribution to study the effect of type of transport on the path efficiency of transporters.

Response variable				
Model	glmer(efficiency ~ transport_type + (1|colony_ID), family= "Gamma")			
Fixed effects	Estimate	SE	*t* value	Pr(>|z|)
(Intercept)	1.187347	0.042600	27.872	< **0.01**
Transport_typeRL	0.155871	0.059689	2.611	< **0.01**
Transport_typeTR	0.002555	0.037177	0.069	0.94521

Transport_typeTRP	– 0.041598	0.045317	– 0.918	0.35865
Random effects	Name	Variance	Std. Dev.	
Colony_ID	(Intercept)	0.001434	0.03787	
Residual		0.016498	0.12844	
Number of obs: 220, groups: colony_ID, 7				
For comparison between the other types of transports, we releveled the variable 'transport_type' to change the base level, and then re-ran the model. The respective test parameters are depicted below.				
Fixed effects	Estimate	SE	t value	Pr(>|z|)
PT-RL	0.155871	0.059689	2.611	< **0.01**
PT-TR	0.002555	0.037177	0.069	0.94521
PT-TRP	– 0.041598	0.045317	– 0.918	0.35865
RL-TR	– 0.15332	0.05912	– 2.593	< **0.01**
RL-TRP	– 0.19747	0.04741	– 4.165	< **0.01**
TR-TRP	– 0.044154	0.045500	– 0.970	0.33184

Table S2a.

Time taken for the respective combination of transports to traverse a displacement of 1 m, across each of the terrain types. Times have been calculated based on the speed and path efficiency for each of the terrain types. Note that the speed in the field is affected by the barren patch, grassy patch, and the transition between these patches. The respective time taken in a homogenous sand arena under a laboratory setting have been provided for comparison.

Terrain / Transports	Barren patch	Grassy patch	Field	Sand (lab)*
TR + RL + PT + RL	88 sec	104 sec	107 sec	102 sec
TRP + RL	57 sec	63 sec	64 sec	57 sec

*Data obtained from previous lab based experiment (Kaur et al. 2017).