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Supplementary Material

Ant mediated dispersal of spiny stick insect (*Extatosoma tiaratum*) eggs and *Acacia longifolia* seeds is ant-species dependent

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Supplementary Material Appendix 1. Ant behaviour towards phasmid eggs; study sites and trial notes.

Species	Replicate	Date	Location	Latitude	Longitude	Time	Weather	Colony Notes	Nest Notes	Egg Placement
<i>Iridomyrmex purpureus</i>	1	26/03/19	Elm Avenue, University of New England	30°29'38''S	151°38'45''E	9:55am	Overcast, cool	Active, not a lot of interest in eggs	Large nest	50cm from nest perimeter
	2	29/03/19	St Marks Church, University of New England	30°29'12''S	151°38'25''E	12:10pm	Sunny, warm	Very active	Small nest, a lot of individuals	30cm from nest perimeter
	3	29/03/19	Sport UNE	30°29'30''S	151°38'30''E	12:30pm	Sunny, warm	Active	Small nest	30cm from nest perimeter
	4	01/04/19	Sport UNE	30°29'34''S	151°38'30''E	11:30am	Sunny, warm + windy	Very active	Small nest	30cm from nest perimeter
	5	03/04/19	University of New England	30°29'37''S	151°38'34''E	10:00am	Sunny, cool + windy	Very active	Small nest	30cm from nest perimeter
	6	04/04/19	University of New England	30°29'54''S	151°38'39''E	9:55am	Sunny, warm + windy	Active	Small nest	30cm from nest perimeter
	7	04/04/19	Rotary Park, Armidale	30°31'9''S	151°38'48''E	12:15pm	Sunny, warm + windy	Very active	Large nest	32cm from nest perimeter

	8	15/04/19	University of New England	30°29'33''S	151°38'33''E	9:12am	Cloudy, cool + windy	Active	Small nest	30cm from nest perimeter
	9	16/04/19	University of New England	30°29'35''S	151°38'33''E	11:20am	Overcast, warm	Very active	Small nest	30cm from nest perimeter
	10	16/04/19	Sport UNE	30°29'40''S	151°38'19''E	12:35pm	Partly cloudy, sunny + warm	Very active	Small, spread out nest	34cm from nest perimeter
<i>Rhytidoponera metallica</i>	1	26/03/19	Elm Avenue, University of New England	30°29'58''S	151°38'45''E	11:00am	Overcast, cool	Not very active	Small nest, <10 individuals foraging	35cm from nest entrance
	2	01/04/19	Sport UNE	30°29'38''S	151°38'24''E	10:20am	Sunny, warm + windy	Active	Small nest, <20 individuals foraging	30cm from nest entrance
	3	10/04/19	Armidale Bicentennial Arboretum			2:25pm	Sunny, warm	Not very active	Small nest, <15 individuals foraging	32cm from nest entrance
	4	25/04/19	University of New England	30°29'37''S	151°38'34''E	11:30am	Warm, partly cloudy + slight winds	Not very active	Small nest, <10 individuals foraging	33cm from nest entrance
	5	27/05/19	University of	30°29'60''S	151°38'43''E	10:13am	Sunny,	Not very	Small nest,	30cm from

			New England				warm	active	<5 individuals foraging	nest entrance
	6	28/04/19	Sport UNE	30°29'38''S	151°38'43''E	10:52am	Sunny, warm + slight winds	Not very active	Small nest <5 individuals foraging	30cm from nest entrance
	7	29/04/19	Sport UNE	30°30'0''S	151°38'24''E	9:52am	Sunny, warm + slight winds	Not very active	Small nest, <10 individuals foraging	30cm from nest entrance
	8	15/05/19	University of New England	30°29'30''S	151°38'18''E	11:39am	Sunny, warm + partly cloudy	Not very active	Small nest, <10 individuals foraging	30cm from nest entrance
	9	14/10/19	University of New England	30°29'39''S	151°38'32''E	10:39am	Sunny, warm + slightly windy	Very active nest- a lot of interest in eggs	Large nest, >30 individuals foraging	30cm from nest entrance
	10	15/10/19	Sport UNE	30°29'39''S	151°38'24''E	9:13am	Sunny, warm	Very active, a lot of interest in eggs	Large nest, >30 individuals	30cm from nest entrance
<i>Camponotus aeneopilosus</i>	1	11/04/19	Armidale Bicentennial Arboretum	30°31'21''S	151°38'49''E	3:30pm	Hot, Sunny	Very active, not	Large nest, >100 individuals	32cm from nest

								interested in eggs	foraging	
2	14/05/19	Sport UNE	30°29'30''S	151°38'18''E	12:18pm	Partly cloudy, slight wind	Active	Small nest, <20 individuals	2=30cm from nest	
3	14/10/19	Armidale Bicentennial Arboretum	30°31'12''S	151°39'11''E	1:25pm	Sunny, warm + windy	Not very active, mainly collecting materials near nest	Small nest, <10 individuals foraging	30cm from nest entrance	
4	24/03/19	Dorothy Avenue, Armidale	30°31'35''S	151°39'8''E	9:55am	Hot, sunny	Not very active, mainly staying in or around nest	Small nest, <10 individuals foraging	56cm from nest entrance	
5	21/10/19	Armidale Bicentennial Arboretum	30°31'18''S	151°38'59''E	10:06am	Sunny, warm	Very active nest, not interested in eggs	Large nest, >50 individuals foraging	30cm from nest entrance	
6	22/10/19	Armidale Bicentennial Arboretum	30°31'22''S	151°39'4''E	10:25am	Sunny, warm	Very active nest-interested in eggs	Shaded nest, large, >30 individuals foraging	30cm from nest entrance	

	7	23/10/19	Sport UNE	30°29'45''S	151°38'30''E	1:00pm	Sunny, warm	Very active	Small nest, <30 individuals	30cm from nest entrance
	8	25/10/19	Armidale Bicentennial Arboretum	30°31'13''S	151°38'50''E	2:30pm	Hot, sunny	Not very active-not very interested in eggs	Shaded nest, small, <10 individuals	30cm from nest entrance
	9	26/10/19	Armidale Bicentennial Arboretum	30°31'12''S	151°38'50''E	11:00am	Sunny, warm + windy	Very active-not very interested in eggs	Large nest, >30 individuals foraging	30cm from nest entrance
	10	26/10/19	Armidale Bicentennial Arboretum	30°31'16''S	151°38'55''E	12:05pm	Sunny, warm + very windy	Not very active-not interested in eggs	Small nest, <10 individuals	30cm from nest entrance
<i>Iridomyrmex rufoniger</i>	1	17/04/19	University of New England	30°29'58''S	151°38'42''E	11:11am	Cool, windy + overcast	Not very active-no interest in eggs	Small nest <15 individuals foraging	30cm from nest entrance at base of tree
	2	21/04/19	University of New England	30°29'36''S	151°38'35''E	11:25am	Sunny, slight winds	Very active-interested in eggs	Large nest, >100 individuals foraging	30cm from nest entrance
	3	20/04/19	University of New England	30°29'36''S	151°38'33''E	10:50am	Sunny, light	Active-some	Small nest, <50	30cm from nest

							winds	interest in eggs	individuals foraging	entrance
4	20/04/19	University of New England	30°29'35''S	151°38'32''E	11:55am	Sunny, light winds	Active-some interest in eggs	Small nest, <50 individuals foraging	30cm from nest entrance	
5	20/04/19	University of New England	30°29'35''S	151°38'33''E	11:55am	Sunny, light winds	Active-some interest in eggs	Small nest, 50-100 individuals foraging	30cm from nest entrance	
6	22/04/19	University of New England	30°29'37''S	151°38'32''E	11:28am	Warm, overcast	Active, some interest in eggs	Small nest, 50-100 individuals foraging	30cm from nest entrance	
7	22/04/19	University of New England	30°29'37''S	151°38'30''E	11:30am	Warm, overcast	Very active-interested in eggs	Large nest, >100 individuals foraging	30cm from nest entrance	
8	23/04/19	Armidale Bicentennial Arboretum	30°31'35''S	151°39'7''E	10:40am	Cool, overcast + windy	Not very active-no interest in eggs	Small nest, <30 individuals foraging	30cm from nest entrance	
9	24/04/19	Sport UNE	30°29'39''S	151°38'23''E	11:10am	Sunny, warm + slight winds	Not very active-no interest in eggs	Small nest, <30 individuals foraging	30cm from nest entrance	

*Myrmecia
tarsata*

1	03/04/19	UNE Mountain Bike Track	30°29'26''S	151°38'15''E	11:40am	Sunny, warm	Not very active- not interested in eggs	Large nest, only 2-3 individuals foraging, others near nest opening	30cm from nest entrance
2	25/08/19	Sport UNE	30°29'28''S	151°38'23''E	9:31am	Hot, sunny, slight wind	Not very active- mainly staying in nest	Small nest, only 1 individual foraging	30cm from nest entrance
3	25/10/19	Armidale Bicentennial Arboretum	30°31'12''S	151°38'50''E	11:35am	Hot, sunny, slight wind	Active- some interest in eggs	Large nest, >5 individuals foraging	30cm from nest entrance
4	25/10/19	Armidale Bicentennial Arboretum	30°31'18''S	151°38'49''E	12:45p m	Warm, sunny + windy	Not very active-no interest in eggs	Shaded nest, small, only 2-3 individuals foraging	30cm from nest entrance
5	25/10/19	Armidale Bicentennial Arboretum	30°31'18''S	151°38'59''E	1:50	Warm, sunny	Not very active-no interest in eggs	Small nest, only 3-4 individuals foraging	30cm from nest

6	12/11/19	Armidale Bicentennial Arboretum	30°31'23''S	151°39'5''E	8:00am	Warm, sunny, windy	Very Active- some interest in eggs	Large nest- 5-10 individuals foraging	30cm from nest
7	12/11/19	Armidale Bicentennial Arboretum	30°31'10''S	151°38'52''E	9:05am	Warm, sunny, windy	Very Active- no interest in eggs	Small nest- 3-4 individuals foraging	30cm from nest
8	12/11/19	MTB Track, Sport UNE	30°29'28''S	151°38'18''E	10:45am	Warm, sunny, windy	Not very Active- no interest in eggs	Small nest- 2 individuals foraging	30cm from nest

Supplementary Material Appendix 2. Seed removal trial: study sites and trial notes.

Species Longitude	Replicate	Date	Location	Latitude	Time	Weather	Colony Notes	Nest Notes	Seed Placement
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<i>Iridomyrmex purpureus</i>	1	10/10/19	University of New England	30°29'33''S	151°38'33''E	10:20am	Sunny, warm	Very active	Small nest	30cm from nest perimeter
	2	10/10/19	Rotary Park, Armidale	30°31'9''S	151°38'48''E	12:00pm	Warm, overcast, windy	Very active	Large nest	30cm from nest perimeter
	3	14/10/19	University of New England	30°29'34''S	151°38'34''E	9:16am	Hot, sunny	Very active	Small nest	30cm from nest perimeter
	4	14/10/19	Sport UNE	30°29'39''S	151°38'35''E	10:23am	Hot, sunny	Very active	Small nest	30cm from nest perimeter
	5	15/10/19	Sport UNE	30°29'34''S	151°38'30''E	10:24am	Sunny, warm	Active	Small nest	30cm from nest perimeter
	6	17/10/19	University of New England	30°29'33''E	151°38'29''E	10:35am	Very windy, warm	Very active	Spread out nest	30cm from nest perimeter
	7	17/10/19	University of New England	30°29'39''S	151°38'31''E	11:40am	Very windy, warm	Very active	Large, shaded nest	30cm from nest perimeter
	8	19/10/19	Sport UNE	30°29'41''S	151°38'25''E	11:02am	Warm, sunny, slight wind	Active	Small, spread out nest	30cm from nest perimeter

<i>Rhytidoponera metallica</i>	1	16/10/19	Sport UNE	30°29'38''S	151°38'24''E	11:00am	Hot, sunny, windy	Not very active	Small nest, <10 individuals foraging	30cm from nest entrance
	2	18/10/19	University of New England	30°29'55''S	151°38'35''E	10:05am	Sunny, warm	Very active	>30 individuals foraging	30cm from nest entrance
	3	18/10/19	University of New England	30°29'37''S	151°38'31''E	10:27am	Sunny, warm	Active	<30 individuals foraging	30cm from nest entrance
	4	18/10/19	University of New England	30°29'37''S	151°38'33''E	11:39am	Sunny, warm	Active	Smaller nest, <30 individuals foraging	30cm from nest entrance
	5	18/10/19	University of New England	30°29'37''S	151°38'32''E	12:03am	Sunny, warm	Not very active-mainly staying in nest	Small nest, <5 individuals foraging	30cm from nest entrance
	6	19/10/19	Trevenna Rd, UNE	30°29'11''S	151°38'22''E	9:25am	Sunny, warm	Very active	Large nest, >50 individuals foraging	30cm from nest entrance
	7	19/10/19	Trevenna Rd, UNE	30°29'5''S	151°38'23''E	10:29am	Sunny, warm	Very active	Small nest, >30 individuals foraging	30cm from nest entrance
	8	21/10/19	Armidale Bicentennial Arboretum	30°31'17''S	151°38'50''E	11:24am	Sunny, warm	Not very active, mainly	Small nest, <10 individuals	30cm from nest

								staying in nest	foraging	entrance
<i>Camponotus aeneopilosus</i>	1	21/10/19	Armidale Bicentennial Arboretum	30°31'18''S	151°38'59''E	9:03am	Sunny, warm	Very active, no interest in seeds	Large nest, >50 individuals foraging	30cm from nest entrance
	2	22/10/19	Armidale Bicentennial Arboretum	30°31'20''S	151°39'3''E	9:05am	Sunny, warm	Active, no interest in seeds	Small nest, <20 individuals foraging	30cm from nest entrance
	3	22/10/19	Armidale Bicentennial Arboretum	30°31'21''S	151°39'4''E	9:10am	Warm	Very active-interested in seeds	Shaded, large nest, >50 individuals foraging	30cm from nest entrance
	4	23/10/19	Armidale Bicentennial Arboretum	30°31'16''S	151°38'55''E	12:00pm	Sunny, warm	Very active, some interest in seeds	Small nest, <30 individuals foraging	30cm from nest entrance
	5	24/10/19	Armidale Bicentennial Arboretum	30°31'12''S	151°38'50''E	9:10am	Sunny, cool	Active-some interest in seeds	Small nest, <30 individuals foraging	30cm from nest entrance
	6	24/10/19	Armidale Bicentennial Arboretum	30°31'13''S	151°38'50''E	9:18am	Cool, cloudy	Not very active, no interest in seeds	Shaded, small nest, <30 individuals foraging	30cm from nest entrance

	7	24/10/19	Sport UNE	30°29'45''S	151°38'30''E	10:10am	Sunny, cool, windy	Not very active, mainly removing debris from nest	Small nest, <20 individuals foraging	30cm from nest entrance
	8	26/10/19	Dorothy Ave, Armidale	30°31'35''S	151°39'8''E	2:00pm	Sunny, warm, very windy	Not very active, no interest in seeds	Shaded, small nest, <10 individuals foraging	30cm from nest entrance
<i>Iridomyrmex rufoniger</i>	1	19/10/19	Sport UNE	30°29'39''S	151°38'23''E	11:48am	Sunny, warm	Very active, interested in seeds	Large nest, >50 individuals	30cm from nest entrance
	2	21/10/19	Armidale Bicentennial Arboretum	30°31'17''S	151°38'46''E	12:30pm	Sunny, warm	Very active, no interest in seeds	Large nest, >50 individuals	30cm from nest entrance
	3	22/10/19	Armidale Bicentennial Arboretum	30°31'25''S	151°39'7''E	11:27am	Sunny, warm	Very active, no interest in seeds	Small nest, <50 individuals foraging	30cm from nest entrance
	4	22/10/19	Armidale Bicentennial Arboretum	30°31'23''S	151°39'5''E	11:31am	Sunny, warm	Very active, some interest in seeds	Small nest, <50 individuals foraging	30cm from nest entrance
	5	23/10/19	Sport UNE	30°29'27''S	151°38'27''E	9:08am	Sunny, warm	Very active, some interest in seeds	Small nest, <30 individuals	30cm from nest entrance

									foraging	
	6	23/10/19	University of New England	30°29'34''S	151°38'28''E	10:12am	Sunny, warm	Active, no interest in seeds	Shaded nest, <30 individuals	30cm from nest entrance
	7	23/10/19	University of New England	30°29'36''S	151°38'33''E	10:16am	Sunny, warm	Very active, no interest in seeds	Shaded nest, <50 individuals foraging	30cm from nest entrance
	8	23/10/19	University of New England	30°29'35''S	151°38'32''E	10:19am	Sunny, warm	Very active, some interest in seeds	Large nest, >50 individuals	30cm from nest entrance
<i>Myrmecia tarsata</i>	1	23/10/19	Sport UNE	30°29'27''S	151°28'25''E	9:02am	Sunny, warm	Very active, a lot of interest in seeds	Large nest, >15 individuals foraging	30cm from nest entrance
	2	24/10/19	Armidale Bicentennial Arboretum	30°31'14''S	151°38'48''E	9:01am	Cool, slight winds	Not very active, no interest in seeds	Shaded nest, 2 individuals foraging	30cm from nest entrance
	3	24/10/19	Armidale Bicentennial Arboretum	30°31'12''S	151°38'50''E	10:04am	Sunny, cool	Very active, no interest in seeds	Large, shaded nest, 5-10 individuals foraging	30cm from nest entrance
	4	24/10/19	Armidale Bicentennial Arboretum	30°31'18''S	151°38'49''E	11:10am	Sunny, cool	Not very active, no interest in seeds	Shaded nest, small nest, 2-3 individuals	30cm from nest entrance

									foraging	
5	26/10/19	Armidale Bicentennial Arboretum	30°31'16''S	151°38'57''E	9:00am	Sunny, very windy	Not very active, no interest in needs	Shaded nest, small, 3-4 individuals foraging	30cm from nest entrance	
6	13/11/19	Armidale Bicentennial Arboretum	30°31'23''S	151°39'5''E	8:00am	Sunny, warm, windy	Active- some interest in seeds	Large nest, 5-8 individuals foraging	30cm from nest entrance	
7	14/11/19	Armidale Bicentennial Arboretum	30°31'10''S	151°38'52''E	8:00am	Sunny, warm	Active- no interest in seeds	Small nest, 3-4 individuals foraging	30cm from nest entrance	
8	14/11/19	MTB Track, Sport UNE	30°29'28''S	151°38'18''E	11:05am	Sunny, warm	Not very active- no interest in seeds	Small nest, 2-3 individuals foraging	30cm from nest entrance	
