

SUPPLEMENTAL INFORMATION

**MALE REACTION TO FEMALE STIMULI IN *RHINOCLEMMYS AREOLATA*:
AN EXPERIMENTAL ANALYSIS TO UNDERSTAND
MATE RECOGNITION BY MALES**

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TABLE S1: List of male behaviors observed during the experiments and their grouping into Searching and Interaction categories.

	Searching	Interaction
CUP		
Sniffs the cup	X	
Puts his head under the cup		X
Puts the leg on the cup		X
SCENT		
Submerges his head inside the dish	X	
Sniffs intensely moving his head across the dish	X	
Sniffs and alternately pops his head off the dish	X	
Cleans itself with paws and pokes its head inside the dish	X	
Overturns the dish		X
Cleans himself and kicks on the floor		X
Drops water on the ground and smells the ground		X
CARAPACE		
Sniff the carapace	X	
Kicks the ground		X
Puts his head under the carapace		X
Bites the carapace		X
Puts a leg on the cap		X
Turns around looking for the cloaca		X
Mount		X

Seeks female head for stimulation		X
Pushes the shell while biting		X
Stretches his neck above the carapace		X
Looks around	X	
FEMALE		
Sniffs the ground	X	
Sniffs the net	X	
Snout to snout		X
Moves soil with his paw		X
Bites the net when the female approaches		X
Bites the net with no female nearby		X
Follows the female's head		X
Follows the female's cloaca		X
Walks excited around the net		X
Leans the net		X
Intent to climb the net		X
Looks around	X	

(B)

	I	II	III	IV	V	VI	VII	VIII	IX
I									
II									
III									
IV									
V									
VI									
VII									
VIII									
IX									
		1.0000	1.0000	1.0000	0.0001*	1.0000	1.0000	1.0000	1.0000
		-	1.0000	1.0000	0.0265*	1.0000	0.7929	0.7929	1.0000
		-	-	1.0000	0.0182*	1.0000	1.0000	1.0000	1.0000
		-	-	-	0.0002*	1.0000	1.0000	1.0000	1.0000
		-	-	-	-	0.0037*	0.0000*	0.0000*	0.0000*
		-	-	-	-	-	1.0000	1.0000	1.0000
		-	-	-	-	-	-	1.0000	1.0000
		-	-	-	-	-	-	-	1.0000

(C)

	I	II	III	IV	V	VI	VII	VIII	IX
I		0.0390*	1.0000	0.0005*	0.0000*	0.0002*	1.0000	0.0677	1.0000
II			0.1150	1.0000	0.0035*	1.0000	0.0294*	1.0000	0.0774
III				0.0018*	0.0000*	0.0008*	1.0000	0.1913	1.0000
IV					0.1912	1.0000	0.0003*	1.0000	0.0011*
V						0.3506	0.0000*	0.0019*	0.0000*
VI							0.0001*	1.0000	0.0005*
VII								0.0515	1.0000
VIII									0.1308
IX									

(D)

Cup	Time			Crossing Frequencies			Time Spent per Crossing	
	Mean	Standard Error		Mean	Standard Error		Mean	Standard Error
I	182.9182	36.68066		4.411765	0.795478		50.22227	11.83008
II	47.0041	11.41412		3.000000	0.658653		13.24612	2.50519
III	130.4754	28.10063		3.000000	0.500000		39.00256	7.81527
IV	65.9665	16.48310		5.294118	1.479678		12.12251	4.05332
V	1.7547	0.78661		0.352941	0.147059		1.41941	0.57178
VI	44.9106	12.06118		3.411765	0.747834		11.32988	3.64604
VII	179.5771	26.51864		5.235294	0.941406		33.99527	5.22372
VIII	76.1706	19.14840		4.823529	1.064933		16.00769	5.37000
IX	172.4606	32.20815		4.294118	0.784804		37.89972	6.94334

TABLE S3: Conover test results for scent experiment. "*" indicates a statistically significant value <0.05. (A) time spent in seconds; (B) crossing frequencies; (C) time per crossing index of males in each quadrant. along with the (D) mean and standard error for each.

(A)

	I	II	III	IV	V	VI	VII	VIII	IX
I		0.0005*	1.0000	0.0006*	0.0000*	0.9170	1.0000	0.3177	0.3596
II		-	0.0065*	1.0000	0.1908	0.9170	0.0229*	1.0000	0.0000*
III		-	-	0.0077*	0.0000*	1.0000	1.0000	1.0000	0.0481*
IV		-	-	-	0.1673	1.0000	0.0267*	1.0000	0.0000*
V		-	-	-	-	0.0000*	0.0000*	0.0002*	0.0000*
VI		-	-	-	-	-	1.0000	1.0000	0.0001*
VII		-	-	-	-	-	-	1.0000	0.0145*
VIII		-	-	-	-	-	-	-	0.0000*
IX									

(B)

	I	II	III	IV	V	VI	VII	VIII	IX
I		1.0000	1.0000	1.0000	0.0002*	1.0000	1.0000	1.0000	1.0000
II		-	1.0000	1.0000	0.0152*	0.9223	1.0000	0.8363	0.1043
III		-	-	1.0000	0.0001*	1.0000	1.0000	1.0000	1.0000
IV		-	-	-	0.0563	0.3285	1.0000	0.2944	0.0296*
V		-	-	-	-	0.0000*	0.0003*	0.0000*	0.0000*
VI		-	-	-	-	-	1.0000	1.0000	1.0000
VII		-	-	-	-	-	-	1.0000	1.0000
VIII		-	-	-	-	-	-	-	1.0000
IX									

(C)

	I	II	III	IV	V	VI	VII	VIII	IX
I		0.0000*	1.0000	0.0000*	0.0000*	0.0034*	0.7052	0.0007*	1.0000
II		-	0.0006*	1.0000	0.2246	1.0000	0.0132*	1.0000	0.0000*
III		-	-	0.0040*	0.0000*	0.4888	1.0000	0.1489	0.1295
IV		-	-	-	0.0465*	1.0000	0.0728	1.0000	0.0000*
V		-	-	-	-	0.0002*	0.0000*	0.0010*	0.0000*
VI		-	-	-	-	-	1.0000	1.0000	0.0000*
VII		-	-	-	-	-	-	1.0000	0.0080*
VIII		-	-	-	-	-	-	-	0.0000*
IX									

(D)

Scent	Time			Crossing Frequencies			Time Spent per Crossing	
	Mean	Standard Error		Mean	Standard Error		Mean	Standard Error
I	152.7518	34.08777		2.588235	0.374351		63.4526	12.55287
II	31.1005	11.86253		2.562500	0.730118		7.7744	1.57712
III	117.9863	27.85467		3.235294	0.694143		31.4776	5.87072
IV	31.8529	10.36981		1.705882	0.519931		14.7906	6.55193
V	0.4559	0.28370		0.176471	0.095305		0.4559	0.28370
VI	56.2326	14.61380		4.117647	1.028571		14.6005	2.46986
VII	100.9388	21.99993		2.764706	0.615543		28.2853	5.26694
VIII	88.0195	39.40343		3.941176	0.964329		51.0731	40.13618
IX	320.4529	49.56713		4.176471	0.697871		130.3650	34.45937

TABLE S4: Conover test results for carapace experiment. "*" indicates a statistically significant value <0.05. (A) time spent in seconds; (B) crossing frequencies; (C) time per crossing index of males in each quadrant. along with the (D) mean and standard error for each.

(A)

	I	II	III	IV	V	VI	VII	VIII	IX
I		1.0000	1.0000	0.0017*	0.0000*	1.0000	1.0000	1.0000	0.0158*
II			0.1914	1.0000	0.0666	1.0000	0.0581	1.0000	0.0000*
III			-	0.0001*	0.0000*	1.0000	1.0000	0.1482	0.1686
IV			-	-	1.0000	0.1686	0.0000*	1.0000	0.0000*
V				-	-	0.0046*	0.0000*	0.0875	0.0000*
VI				-	-	-	0.5644	1.0000	0.0001*
VII				-	-	-	-	0.0439*	0.5034
VIII		-	-	-	-	-	-	-	0.0000*
IX									

(B)

	I	II	III	IV	V	VI	VII	VIII	IX
I		1.0000	1.0000	1.0000	0.0072*	1.0000	1.0000	1.0000	1.0000
II		-	1.0000	1.0000	0.0095*	1.0000	1.0000	1.0000	1.0000
III		-	-	1.0000	0.0265*	1.0000	1.0000	1.0000	1.0000
IV		-	-	-	1.0000	0.1383	1.0000	0.2941	0.0620
V		-	-	-	-	0.0001*	0.0018*	0.0002*	0.0000*
VI		-	-	-	-	-	1.0000	1.0000	1.0000
VII		-	-	-	-	-	-	1.0000	1.0000
VIII		-	-	-	-	-	-	-	1.0000
IX									

(C)

	I	II	III	IV	V	VI	VII	VIII	IX
I		0.0123*	1.0000	0.0002*	0.0000*	0.0229*	1.0000	0.0047*	0.5156
II		-	0.0010*	1.0000	1.0000	1.0000	0.0002*	1.0000	0.0000*
III		-	-	0.0000*	0.0000*	0.0020*	1.0000	0.0003*	1.0000
IV		-	-	-	1.0000	1.0000	0.0000*	1.0000	0.0000*
V		-	-	-	-	1.0000	0.0000*	1.0000	0.0000*
VI		-	-	-	-	-	0.0004*	1.0000	0.0000*
VII		-	-	-	-	-	-	0.0001*	1.0000
VIII		-	-	-	-	-	-	-	0.0000*
IX									

(D)

Carapace	Time			Crossing Frequencies			Time Spent per Crossing	
	Mean	Standard Error		Mean	Standard Error		Mean	Standard Error
I	115.3241	30.90182		3.176471	0.676471		52.2378	24.14955
II	54.1576	15.71559		3.294118	0.950096		15.5232	4.82106
III	123.0129	21.94604		3.176471	0.576726		34.3584	5.96585
IV	25.1229	6.98652		2.411765	0.653378		7.2965	1.32832
V	9.1371	5.22136		0.411765	0.149971		10.8385	5.44389
VI	60.8918	12.99744		4.000000	0.808957		12.1772	2.16332
VII	150.3476	28.36640		3.470588	0.529412		41.6892	4.75296
VIII	51.6476	10.62305		4.235294	0.797650		10.9708	1.55259
IX	312.7729	35.92896		4.176471	0.687254		110.5041	26.77215

TABLE S5: Conover test results for female presence experiment. "*" indicates a statistically significant value <0.05. (A) time spent in seconds; (B) crossing frequencies; (C) time per crossing index of males in each quadrant. along with the (D) mean and standard error for each.

(A)

	I	II	III	IV	V	VI	VII	VIII	IX
I		0.0005*	0.0269*	0.0001*	0.0000*	0.0101*	0.0402*	0.0056*	1.0000
II		-	1.0000	1.0000	0.4057	1.0000	1.0000	1.0000	0.0009*
III		-	-	1.0000	0.0154*	1.0000	1.0000	1.0000	0.0402*
IV		-	-	-	1.0000	1.0000	1.0000	1.0000	0.0001*
V		-	-	-	-	0.0402*	0.0101*	0.0678	0.0000*
VI		-	-	-	-	-	1.0000	1.0000	0.0154*
VII		-	-	-	-	-	-	1.0000	0.0596
VIII		-	-	-	-	-	-	-	0.0087*
IX									

(B)

	I	II	III	IV	V	VI	VII	VIII	IX
I		1.0000	1.0000	1.0000	0.0072*	1.0000	1.0000	1.0000	1.0000
II		-	1.0000	1.0000	0.0095*	1.0000	1.0000	1.0000	1.0000
III		-	-	1.0000	0.0265*	1.0000	1.0000	1.0000	1.0000
IV		-	-	-	1.0000	0.1383	1.0000	0.2941	0.0620
V		-	-	-	-	0.0001*	0.0018*	0.0002*	0.0000*
VI		-	-	-	-	-	1.0000	1.0000	1.0000
VII		-	-	-	-	-	-	1.0000	1.0000
VIII		-	-	-	-	-	-	-	1.0000
IX									

(C)

	I	II	III	IV	V	VI	VII	VIII	IX
I		0.0000*	0.0478*	0.0001*	0.0000*	0.0004*	0.2563	0.0020*	1.0000
II		-	1.0000	1.0000	1.0000	1.0000	0.5160	1.0000	0.0000*
III		-	-	1.0000	0.0033*	1.0000	1.0000	1.0000	0.0098*
IV		-	-	-	0.7188	1.0000	0.9891	1.0000	0.0000*
V		-	-	-	-	0.2563	0.0004*	0.0718	0.0000*
VI		-	-	-	-	-	1.0000	1.0000	0.0001*
VII		-	-	-	-	-	-	1.0000	0.0628
VIII		-	-	-	-	-	-	-	0.0003*
IX									

(D)

Female	Time			Crossing Frequencies			Time Spent per Crossing	
	Mean	Standard Error		Mean	Standard Error		Mean	Standard Error
I	248.4812	59.28958		3.117647	0.696009		168.9135	63.24896
II	56.4947	17.44476		3.352941	1.039447		10.7393	2.57301
III	91.3606	24.88111		2.411765	0.630469		25.3623	6.56810
IV	31.3206	13.77893		1.588235	0.446051		14.9195	6.32896
V	2.4400	1.24207		0.470588	0.174002		1.6647	0.69870
VI	39.9571	11.61523		2.235294	0.591169		13.2205	3.21300
VII	66.9306	16.96336		1.294118	0.267954		39.5438	9.58684
VIII	43.7594	15.90489		2.117647	0.568036		14.8855	4.07560
IX	337.9500	63.33504		2.470588	0.429754		160.3536	37.20406

TABLE S6: Conover test results comparing the mean frequency of searching and interaction behaviors between experiments. "*" indicates a statistically significant value <0.05. (A) Searching behavior frequencies; (B) Interaction behavior frequencies; (C) Mean and standard error for each behavior.

indicates a statistically significant value <0.05. (A) Searching behavior frequencies; (B) Interaction behavior frequencies; (C) Mean and standard error for each behavior.

(A)

	Cup	Scent	Carapace	Female
Cup	-	1	0.0000*	0.0000*
Scent	-	-	0.0000*	0.0000*
Carapace	-	-	-	1
Female	-	-	-	-

(B)

	Cup	Scent	Carapace	Female
Cup	-	0.97	0.33	0.04*
Scent	-	-	0.1	0.01*
Carapace	-	-	-	0.7
Female	-	-	-	-

(C)

Searching			Interaction		
	Mean	Standard Error		Mean	Standard Error
Cup	0.411765	0.12303824		0.117647	0.080547
Scent	0.529412	0.29849681		0.176471	0.128203
Carapace	0.705882	0.11391128		1.823529	0.422138
Female	0.882353	0.14558081		2.000000	0.477432