

SUPPLEMENTAL INFORMATION

VARIATION IN COLD TOLERANCE OF NORTHERN EDGE

POPULATIONS OF THE COMMON HOUSE GECKO

(*HEMIDACTYLUS FRENATUS*)

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The following material is provided by the authors and was not subjected to review or editing by *Herpetological Conservation and Biology*.

Table S1. Individuals captured, snout-vent length (SVL) and Body weight of *Hemidactylus frenatus* in urban (UA) / rural (RA) sites on three islands.

Island / Habitat	Urban	Rural
AMA_N	7M and 2F	15M and 16F
AMA_S	15M and 14F	9M and 14F
OKI_N	13M and 9F	8M and 13F
OKI_S	13M and 13F	6M and 7F
ISG	13M and 15F	13M and 16F

Statistical results of normality and variances homogeneity of our data.

Table S2. Summary of statistical results of normality and variances homogeneity of our data in climate physical measurements and cold tolerance. ADMTY indicated annual average of daily minimum temperatures; ADMTC indicated average in daily minimum temperatures of coldest month.

Variables	Normality	Variances Homogeneity
Comparison between three islands		
ADMTY	$P < 0.001$	$P < 0.001$
ADMTC	$P < 0.001$	$P = 0.029$
Comparison between urban and rural in Okinawajima		
ADMTY	$P = 0.453$	$P = 0.900$
ADMTC	$P < 0.001$	$P = 0.994$
Physical measurements		
SVL	$P < 0.001$	$P = 0.090$
M_b	$P < 0.001$	$P = 0.118$
Cold tolerance		
critical thermal minimum (CT_{min})	$P < 0.001$	$P = 0.272$

Statistical results of comparison of annual mean daily minimum temperature among three islands (1897-2021).

Table S3. Results of Pairwise Wilcox test for comparing of annual average daily minimum temperature (ADMTY) among the three islands (1897-2021). Numbers in red indicate that row temperature is higher than column; numbers in blue color indicate that row temperature is lower than column.

	ISG	ISG	ISG	OKI	OKI	OKI	AMA	AMA
	Before 1955	1955-1999	After 2000	Before 1955	1955-1999	After 2000	Before 1955	1955-1999
ISG								
1955-1999	< 0.001***							
ISG								
After 2000	< 0.001***	< 0.001***						
OKI								
Before 1955	< 0.001***	< 0.001***	< 0.001***					
OKI								
1955-1999	0.045*	< 0.001***	< 0.001***	< 0.001***				
OKI								
After 2000	< 0.001***	< 0.001***	< 0.001***	< 0.001***	< 0.001***			
AMA								
Before 1955	< 0.001***	< 0.001***	< 0.001***	< 0.001***	< 0.001***	< 0.001***		
AMA								
1955-1999	< 0.001***	< 0.001***	< 0.001***	< 0.001***	< 0.001***	< 0.001***	< 0.001***	
AMA								
After 2000	< 0.001***	< 0.001***	< 0.001***	0.020*	< 0.001***	< 0.001***	< 0.001***	< 0.001***

Statistical results of comparing average of daily minimum temperature during the coldest month among the three islands (1897-2021).

Table S4. Results of Pairwise Wilcox test for comparing of the average of daily minimum temperature of the coldest month (ADMTC) among the three islands (1897-2021). Numbers in red indicate that row temperature is higher than column; numbers in blue color indicate that row temperature is lower than column.

	ISG	ISG	ISG	OKI	OKI	OKI	AMA	AMA
	Before 1955	1955-1999	After 2000	Before 1955	1955-1999	After 2000	Before 1955	1955-1999
ISG								
1955-1999	0.001**							
ISG								
After 2000	< 0.001***	< 0.001***						
OKI								
Before 1955	< 0.001***	< 0.001***	< 0.001***					
OKI								
1955-1999	< 0.001***	< 0.001***	< 0.001***	< 0.001***				
OKI								
After 2000	0.718	0.001**	< 0.001***	< 0.001***	< 0.001***			
AMA								
Before 1955	< 0.001***	< 0.001***	< 0.001***	< 0.001***	< 0.001***	< 0.001***		
AMA								
1955-1999	< 0.001***	< 0.001***	< 0.001***	< 0.001***	< 0.001***	< 0.001***	0.314	
AMA								
After 2000	< 0.001***	< 0.001***	< 0.001***	< 0.001***	< 0.001***	< 0.001***	< 0.001***	0.002**

Statistical results of comparison of local climate among four weather stations in Okinawajima (2013-2021).

Table S5. ANOVA results of comparison of annual average daily minimum temperature (ADMTY) among four weather stations in Okinawajima (2013-2021).

Annual average	SS	df	F	P
Location	34.4	3	119.6	< 0.001***
Residuals	3.1	32		

Table S6. Post-hoc results for comparing of annual average daily minimum temperature (ADMTY) among four weather stations in Okinawajima (2013-2021). Numbers in red indicate that row temperature is higher than column; numbers in blue color indicate that row temperature is lower than column.

Location	Naha	Itokazu	Nago
Itokazu	< 0.001***		
Nago	< 0.001***	0.001**	
Oku	0.001**	< 0.001***	< 0.001***

Table S7. Results of Pairwise Wilcox test for comparing of average daily minimum temperature of the coldest month (ADMTC) among four weather stations in Okinawajima (2013-2021). Numbers in blue indicate that row temperature is lower than column.

Location	Naha	Itokazu	Nago
Itokazu	0.040**		
Nago	0.005**	0.030*	
Oku	0.030**	0.020*	0.002**

Statistical results of the comparison of critical minimum temperature (CT_{\min}) of *Hemidactylus frenatus* in urban (UA) / rural (RA) sites on three islands.

Table S8. Results of Pairwise Wilcox test for comparing of critical minimum temperature (CT_{min}) of *Hemidactylus frenatus* in urban (UA) / rural (RA) sites on the three islands. Numbers in red indicate that row temperature is higher than column; numbers in blue indicate that row temperature is lower than column.

	ISG _RA	ISG _UA	OKI_S _RA	OKI_S _UA	OKI_N _RA	OKI_N _UA	AMA_S _RA	AMA_S _UA	AMA_N _RA
ISG_UA	< 0.001***								
OKI_S_RA	< 0.001***	< 0.001***							
OKI_S_UA	0.058	< 0.001***	< 0.001***						
OKI_N_RA	0.016*	< 0.001***	< 0.001***	0.559					
OKI_N_UA	0.017*	0.005**	< 0.001***	< 0.001***	< 0.001***	< 0.001***			
AMA_S_RA	< 0.001***	< 0.001***	< 0.001***	< 0.001***	< 0.001***	< 0.001***			
AMA_S_UA	0.471	< 0.001***	< 0.001***	0.020*	0.006**	0.152	< 0.001***		
AMA_N_RA	< 0.001***	< 0.001***	< 0.001***	0.021*	0.075	< 0.001***	0.231	< 0.001***	
AMA_N_UA	0.890	< 0.001***	< 0.001***	0.271	0.138	0.081	0.001**	0.559	0.011*