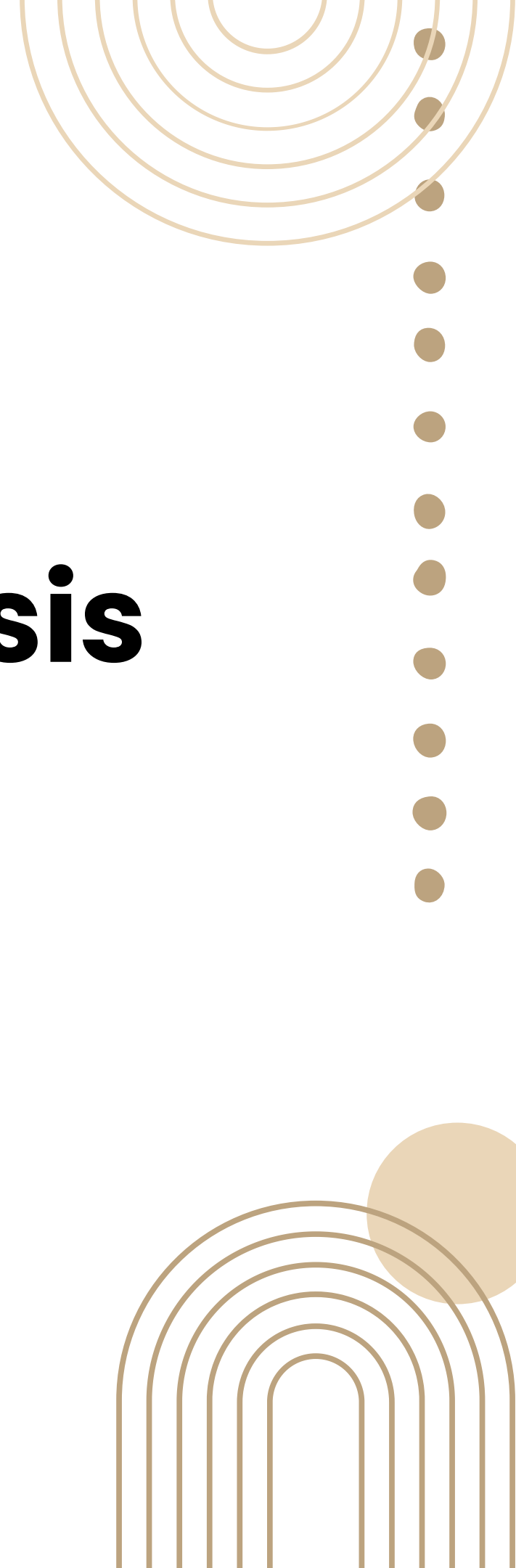


Turtles as storytellers: the potential of ancient DNA analysis to shed light on Mayan culture, life, and traditions

Yael Toyber

Supervisors: Dr. Dongya Yang, Dr. Grace Hua Zhang, & Dr. Arianne Boileau



Background



Dermatemys mawii



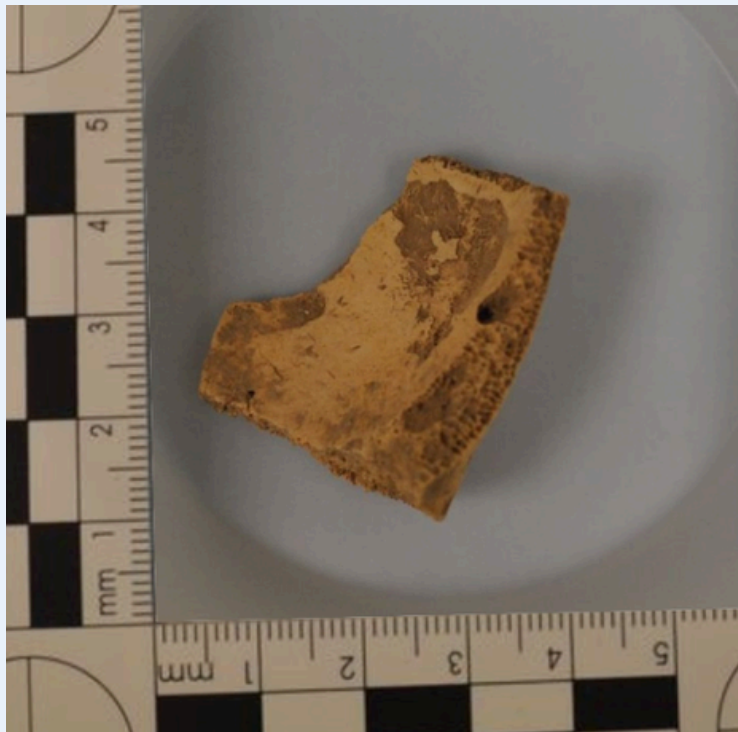
(Briggs, et al., 2019)



(Briggs, et al., 2019)

How we tested the samples

1 aDNA extraction

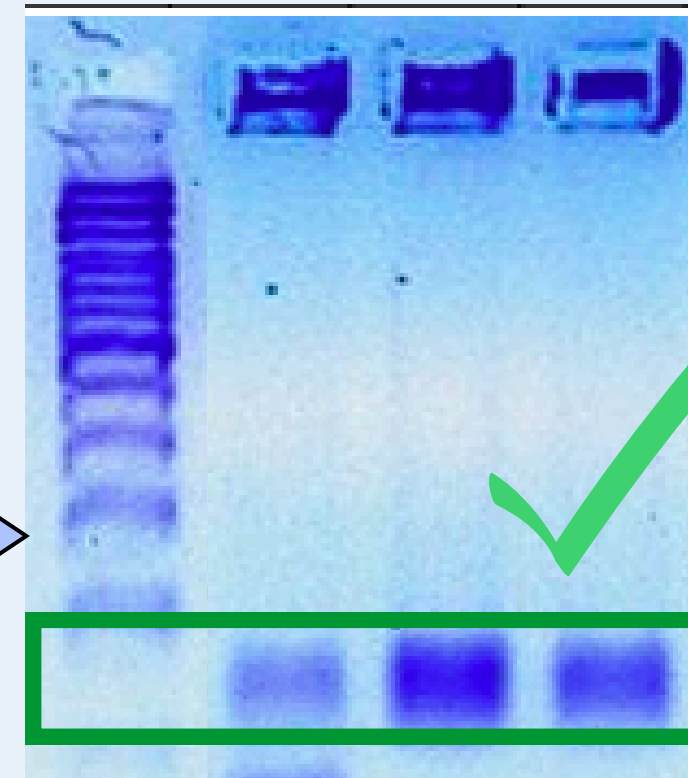


2 Amplification

PCR



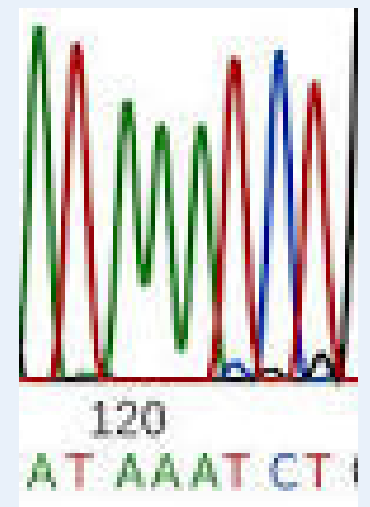
3 Check if DNA is present



Darker bands = more DNA preserved

4

Species Identification & Maternal lineages "haplotypes"



Successful aDNA recovery in most samples

1544-1700 BCE 900-1544 CE 650-850 CE

Sample name	Archeological site	Species ID	Short DNA fragments	Long DNA fragments
TF69	Piedras Negras (Guatemala)	<i>D.mawii</i>	Strong	Moderate
TF73				n/a
TF68	Lamanai (Belize)		Moderate	Moderate
TF70				n/a
TF71	Tipu (Belize)			Strong
TF72			Strong	

Preservation ranking

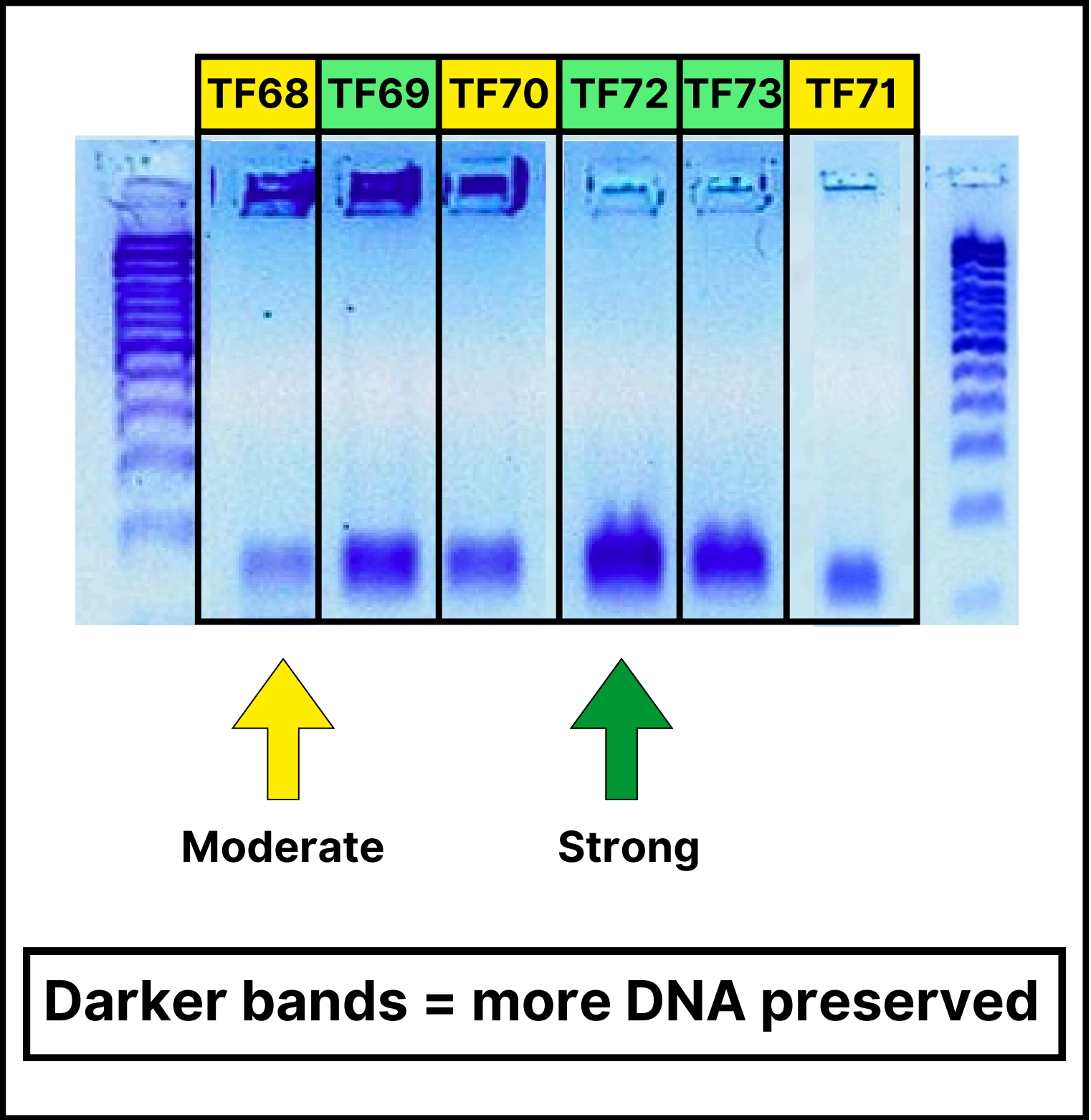
strong

moderate

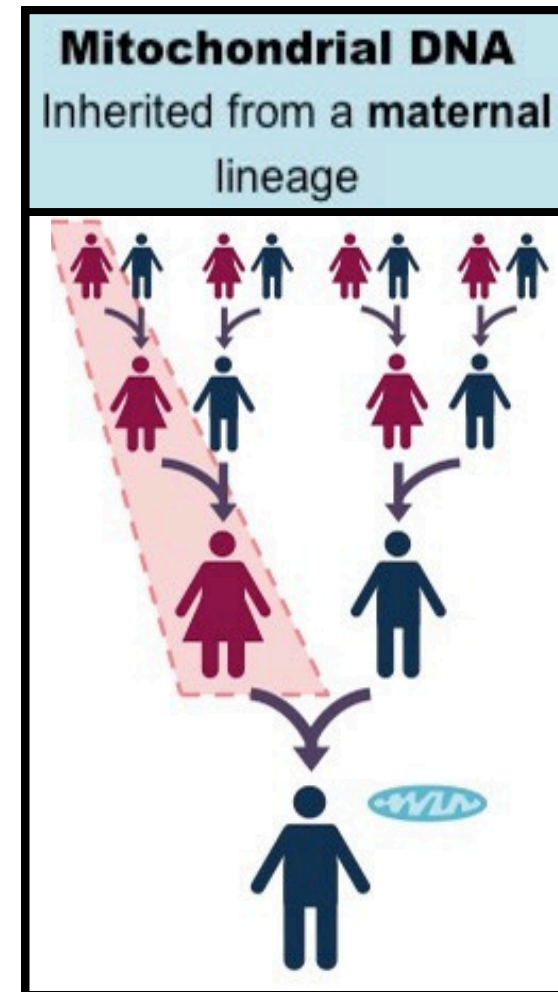
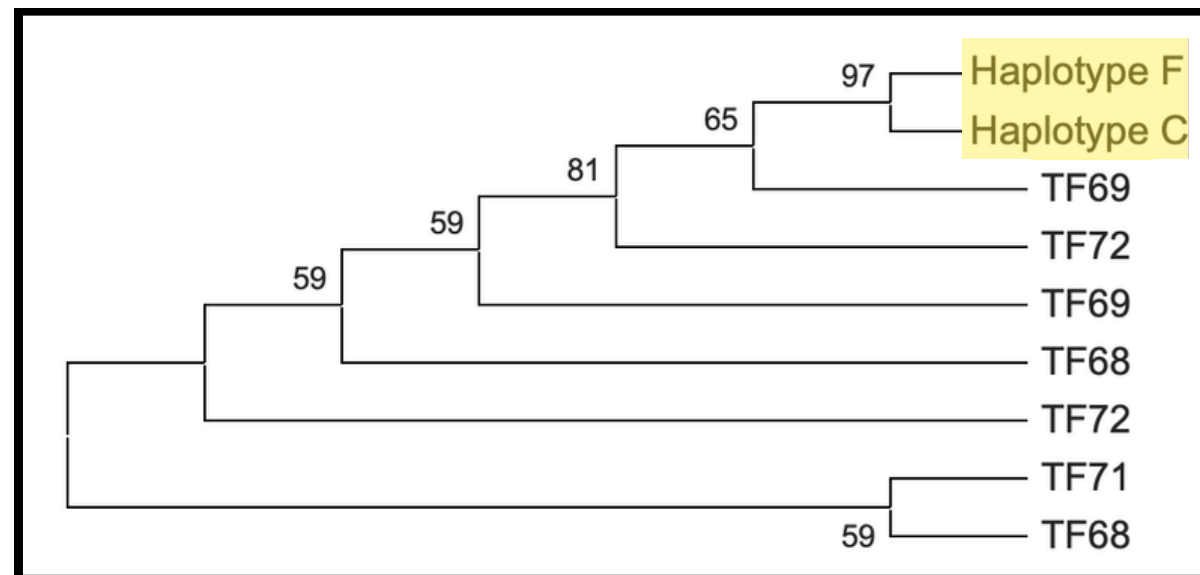
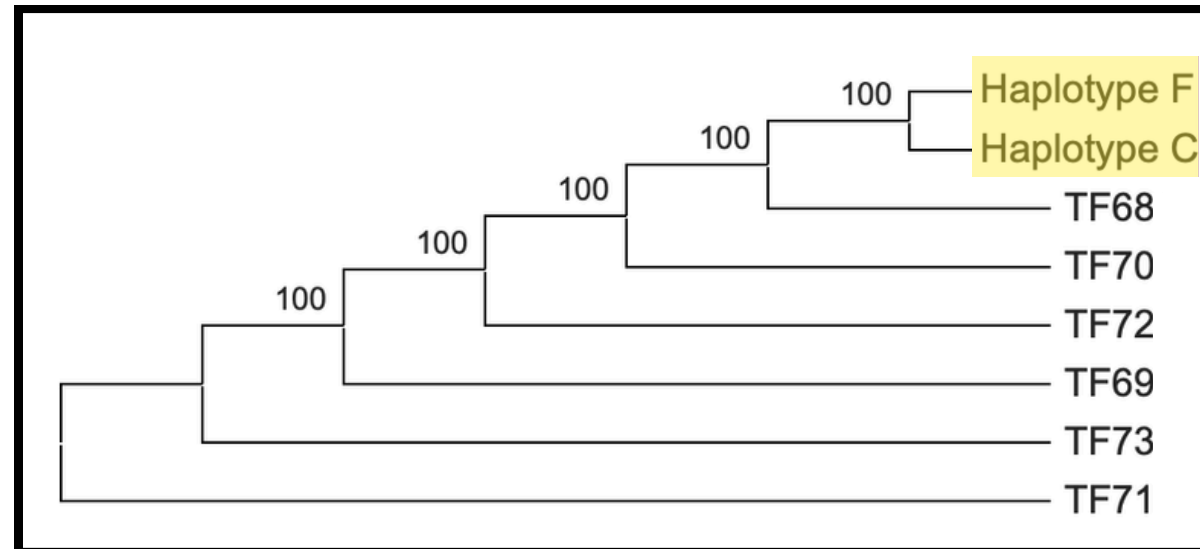
weak

n/a

Best ----- Worst



Maternal lineages



<https://old-ib.bioninja.com.au/standard-level/topic-5-evolution-and-biodi/54-cladistics/mitochondrial-dna.html>

Similar haplotypes found in samples in different sites suggest long distance transport of *D. mawii* by humans

(Increased sampling size required in further research)

Key findings

1

Successful recovery of ancient DNA from challenging conditions

Humidity, UV radiation from the sun, and high/low pH levels in soils, can all degrade DNA heavily over time.



2

Genetic continuity of *D. mawii* between sites

Indicated by species identification and haplotype data.



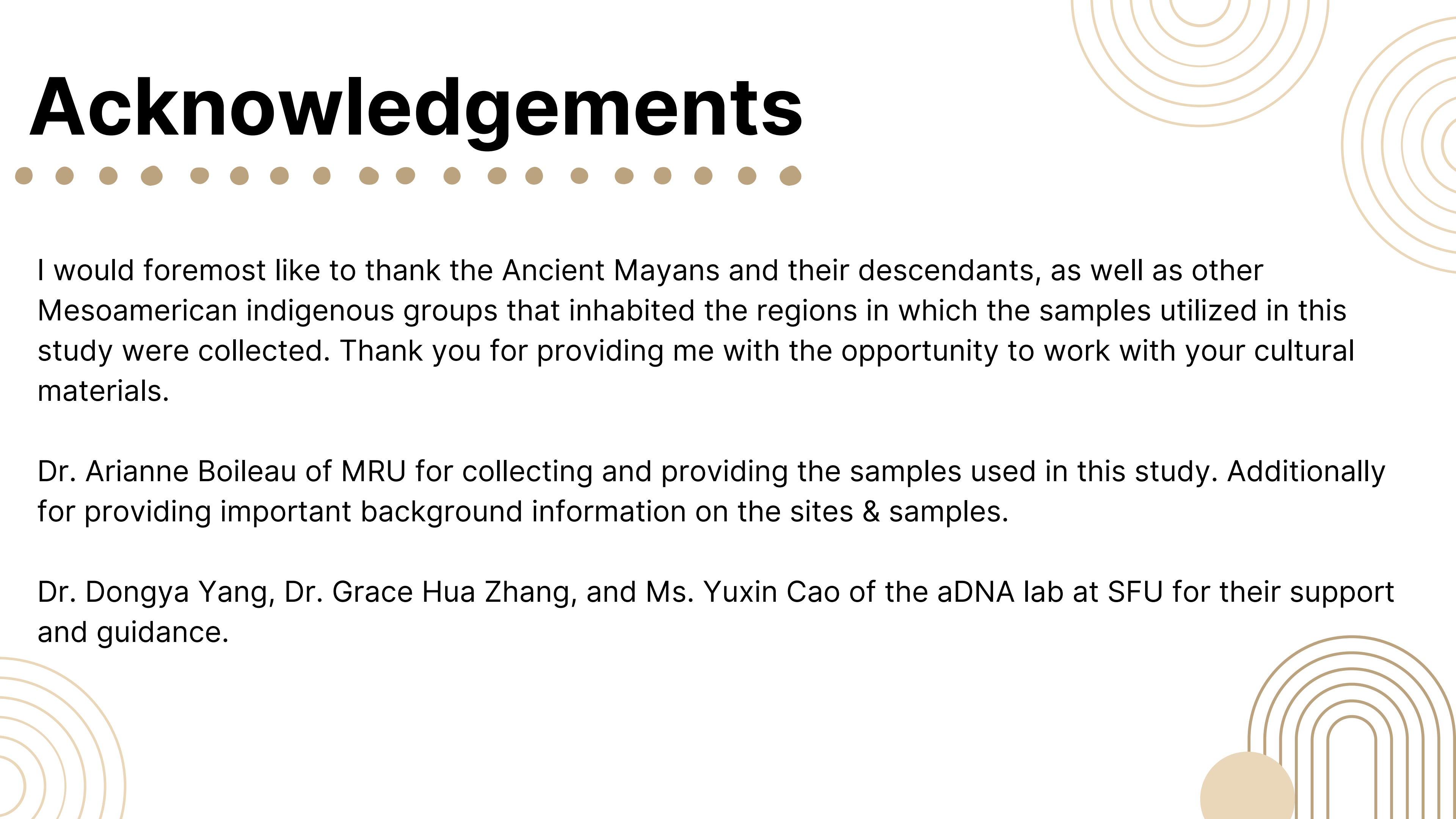
3

Genetic connections suggest that the Maya transported turtles across long distances

Possibly through trade and transport networks.



Acknowledgements



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