

## SUPPLEMENTARY MATERIAL

**Supplementary table 1.** Bones recovered from each level of Pingfo I, classified according to the element of the skeleton and the ontogenetic stage.

PINGFO I	Level 1				Level 2				Level 3				Level 4			
	SC	LC	J	A												
cranial fragment		1				1								2		
bill fragment																
Humerus		3								1	1					
radius/ulna			1		3		1									
carpometacarpus												1				
metacarpal							2									
wing phalanx																
wing bone			1									2				
femur					7	1										
femur end																
femur shaft																
fibula							1			1						
patella							1			2						
tibiotarsus					2											
tibiotarsal end		1		1												
tibiotarsal shaft																
tarsometatarsus														1		

metatarsal		2				2				1				2		
tarsometat end																
pedal phalanx	2									1				3		
ungual phalanx						3				1				2		
vertebra		17		4		1				5		1		1		
synsacrum						1										
coracoid				1		4						1				
scapula				1		3										
furcula						1										
sternum									1							
rib														1		
pelvis										1						

PINGFO I	Level 5				Level 6				Level 7				
	SC	LC	J	A	SC	LC	J	A	SC	LC	J	A	
cranial fragment										1			
bill fragment										1	1		
humerus								2		3	1*		
radius/ulna						1					3*		
carpometacarpus											1*		
metacarpals													
wing phalange											3*		
wing bone													
femur						3				2	3		

femur end								3		
femur shaft										
fibula										
patella								1		
tibiotarsus										
tibiotarsal end		1						3	1	
tibiotarsal shaft								13		
tarsometatarsus						1				
metatarsal				1		1	3	3	1	
tarsometatarsus end										
pedal phalanx			8			1		3		
ungual phalanx					3					
vertebra	1				6			11		
synsacrum								2		
coracoid								7		
scapula						1				
furcula										
sternum										
rib										
pelvis										

Abbreviations: SC small chicks, LC large chicks, J juveniles, A adults, \*includes the elements of the

articulated wing Pingfo I-151.

**Supplementary table 2.** Bones recovered from each level of Pingfo 2, classified according to the element of the skeleton and the ontogenetic stage.

PINGFO II	Level 3				Level 4				Surficial dep			
	SC	LC	J	A	SC	LC	J	A	SC	LC	J	A
cranial fragment												
bill fragment									1		1	
humerus			1							1	9	
radius/ulna			1							2		
carpometacarpus			1						1			
metacarpals												
wing phalange												
wing bone												
femur											2	
femur end										4		
femur shaft												
fibula												
patella											1	
tibiotarsus												
tibiotarsal end										2	1	2
tibiotarsal shaft												
tarsometatarsus											1	
metatarsal										1		
tarsometatarsal end												
pedal phalanX											1	
ungual phalanx												
vertebra											4	
synsacrum										1		F
coracoid								1		8	1	8

Scapula											
furcula											
sternum							1			1	
rib							1			2	
pelvis								1		F	
hind bones										2f	

Abbreviations: SC small chicks, LC large chicks, J juveniles, A adults, f flying birds.

**Supplementary figure.** Proportion of penguin bones recovered from each level of Pingfo 2, classified according to the element of the skeleton and the ontogenetic stage. Level 5 was not graphically represented given the low number of specimens collected there.

