

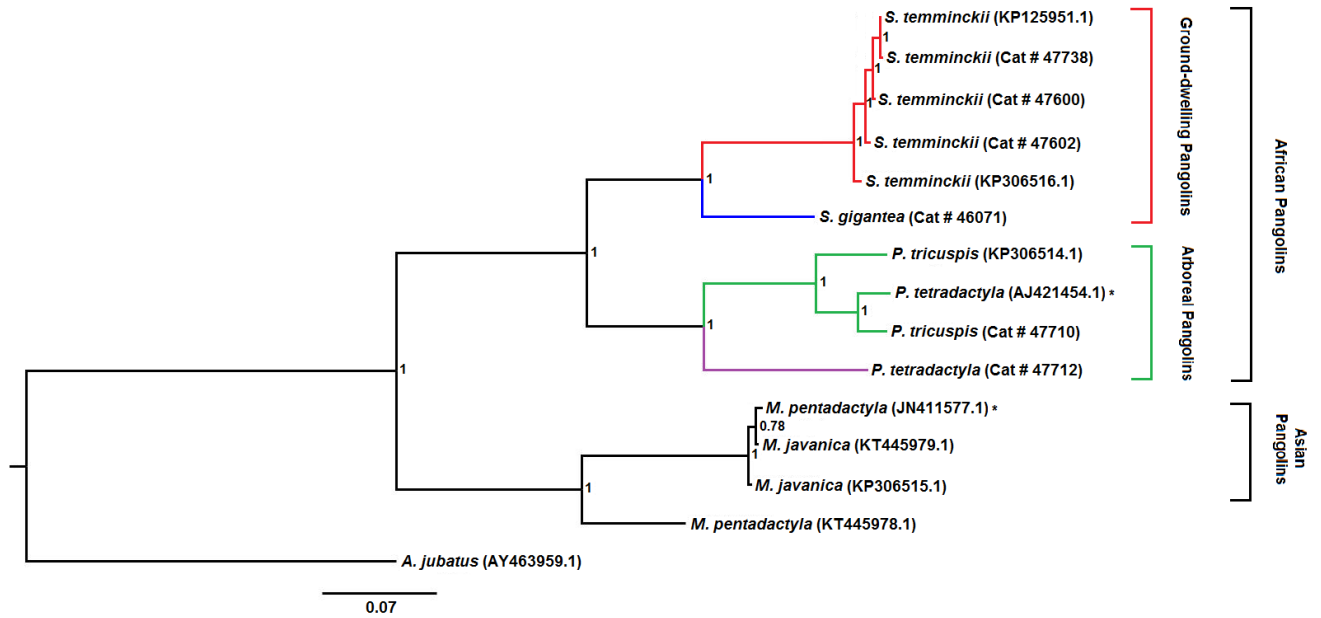
1 **Mitochondrial genomes of African pangolins and insights into evolutionary**
2 **patterns and phylogeny of the family Manidae**

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13 **Additional Information Figures and Table**

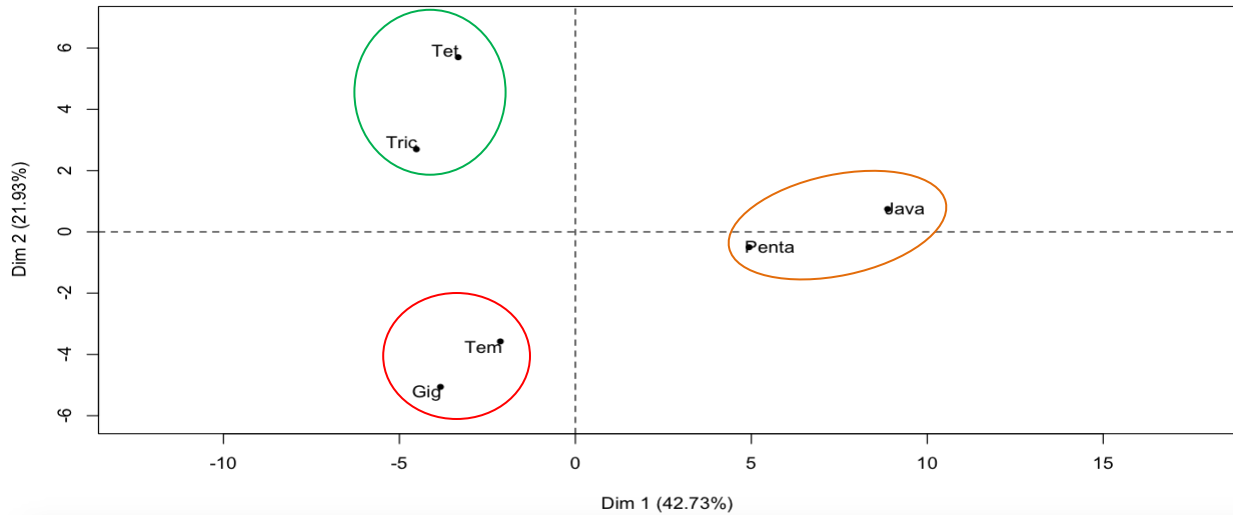
22 **Fig. S1:** Bayesian mitogenome phylogenetic tree of all available pangolin mitogenomes.
 23 Posterior probabilities are indicated on the respective branches. *A. jubatus* was selected as an
 24 outgroup as pangolins are more closely related to the order Carnivora. Asterisks indicate the
 25 misidentified mitogenomes.



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35 **Fig. S2:** Principal Component Analysis (PCA) of Relative Synonymous Codon Usage values
36 (RSCU) for six pangolin species. Three distinct genera is present (*Manis*, *Phataginus* and
37 *Smutsia*) in the (a) *CoxII*; (b) *NadI*, (c) *NadIII* genes. The two sub-families (Smutsiinae and
38 Maninae) are distinguished in the (d) *AtpVIII*; (e) *NadIV*; (f) *NadVI* genes.

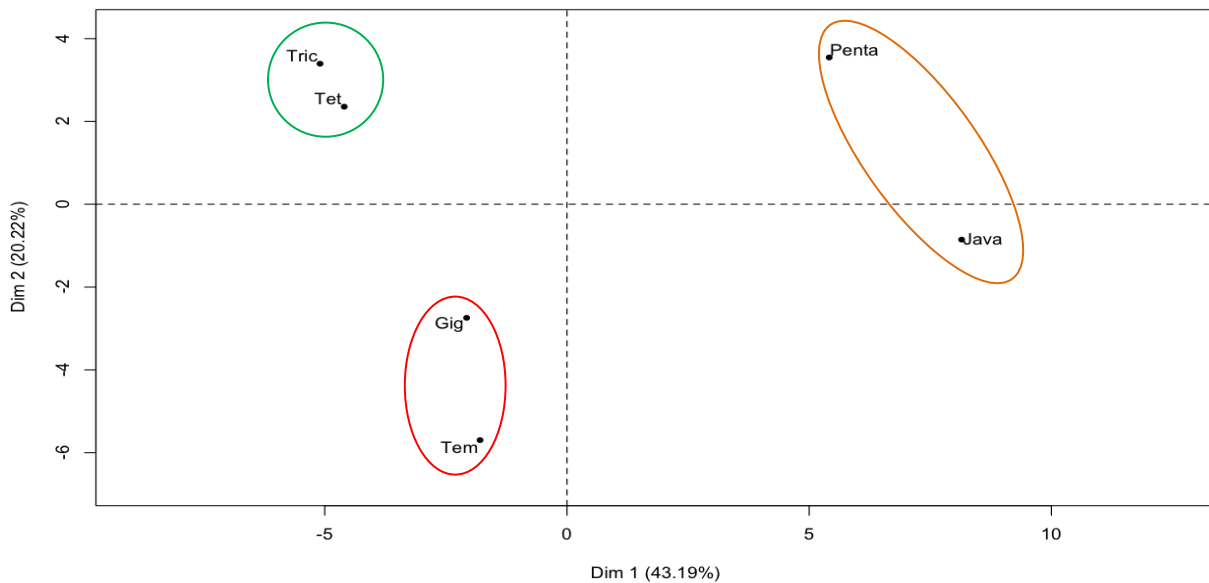
39 **(a)**



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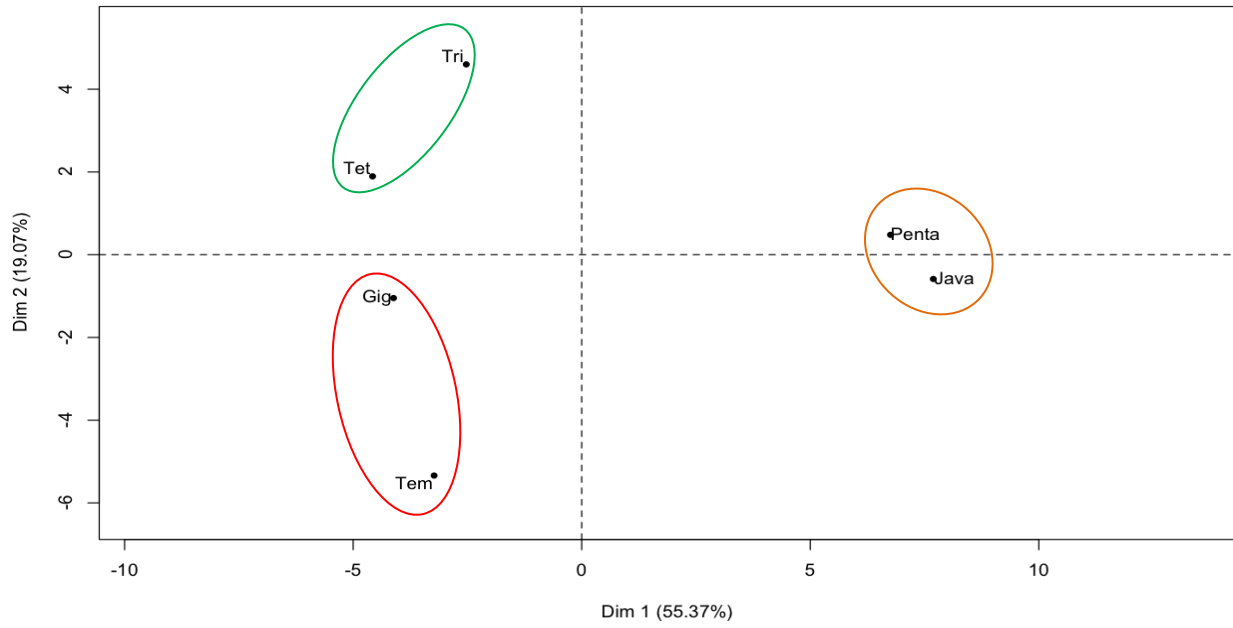
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42 **(b)**



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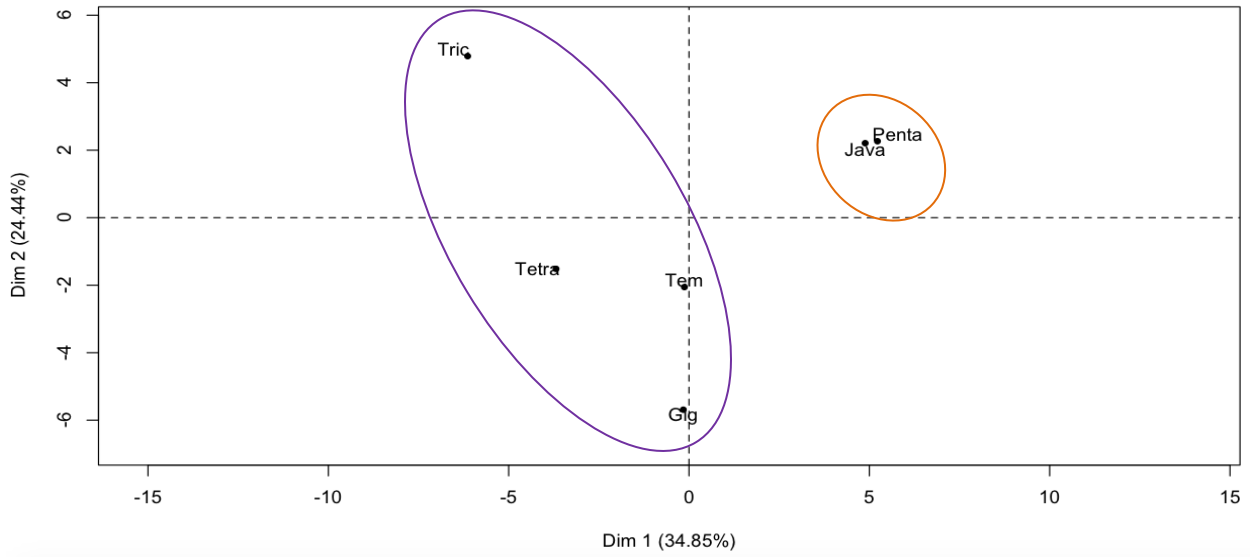
44 (c)



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47 (d)



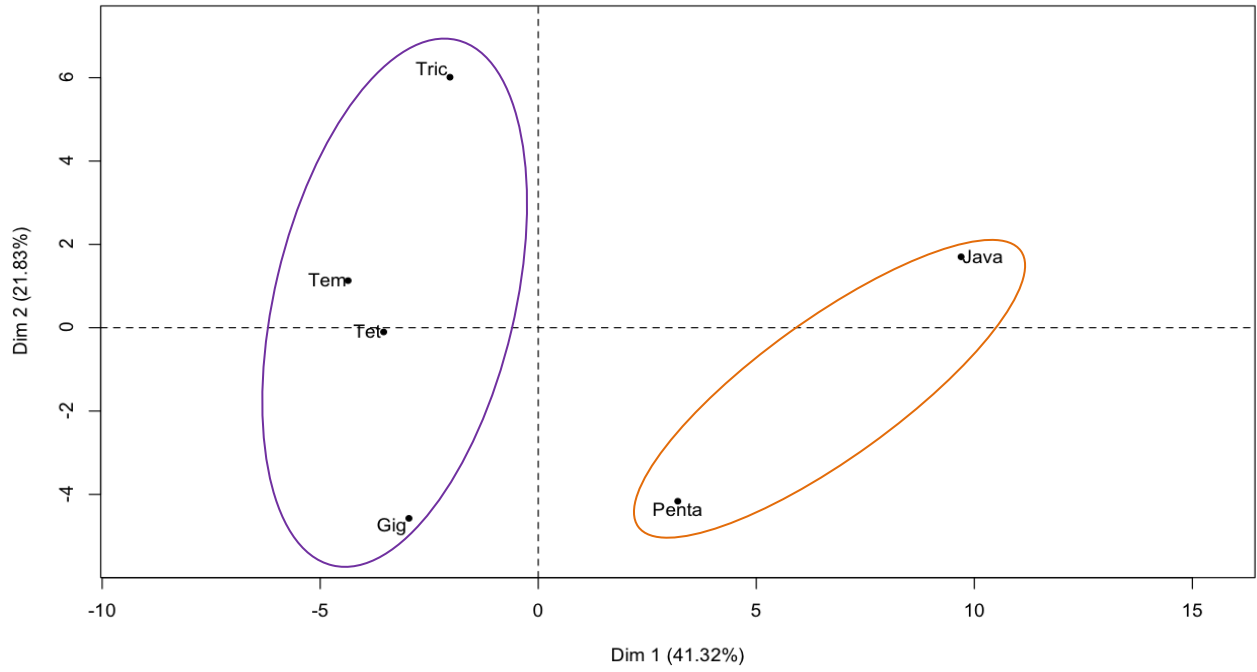
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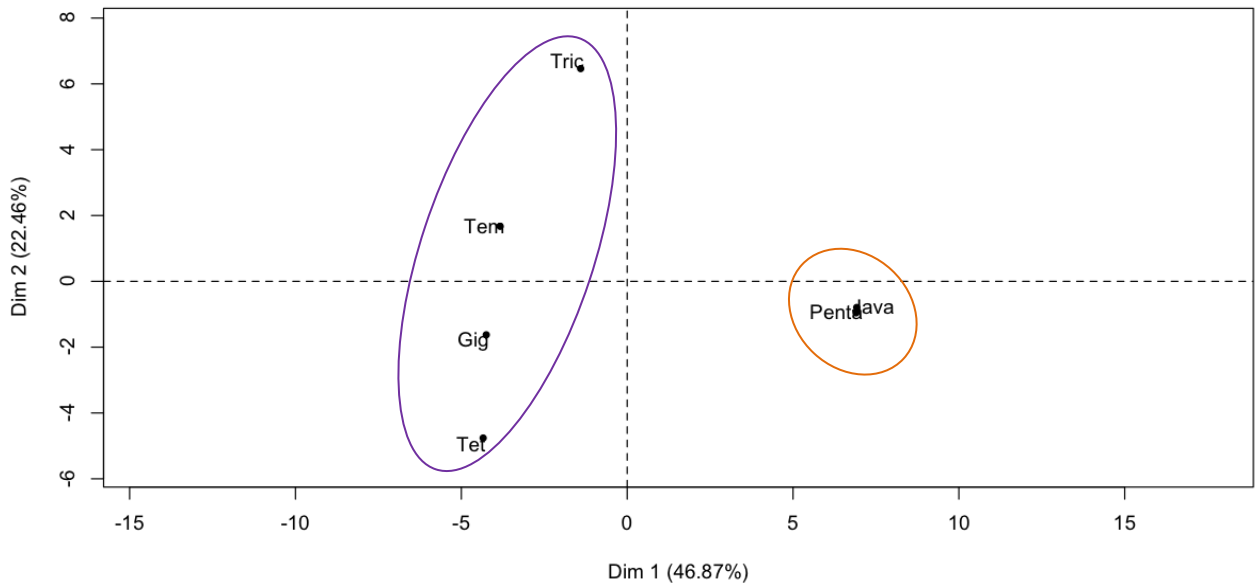
52 (e)



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55 (f)



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59 **Table S1:** List of nucleotide percentages and its 3rd codon position percentage (%).

Species	% of A	A3%	% of T	T3%	% of G	G3%	% of C	C3%
ATP6								
<i>M. pentadactyla</i>	34.4	46.7	26.4	20	9.8	2.6	29.4	30.8
<i>M. javanica</i>	31.6	38.3	23.6	12	11.9	8.8	32.9	41.0
<i>P. tricuspis</i>	32.4	40.4	31.7	32	10.7	6.2	25.2	20.9
<i>P. tetradactyla</i>	33.9	44.0	31.1	30	9.5	3.6	25.5	22.7
<i>S. gigantea</i>	33.3	44.0	29.3	25	9.5	3.1	27.9	27.6
<i>S. temminckii</i>	32.0	40.9	29.5	26	10.8	5.8	27.7	27.1
ATP8								
<i>M. pentadactyla</i>	38.8	43.3	23.9	16	7.5	9.0	29.9	31.3
<i>M. javanica</i>	38.7	45.6	22.5	13	7.8	8.8	30.9	32.4
<i>P. tricuspis</i>	35.9	39.4	33.3	41	6.1	6.1	24.7	13.6
<i>P. tetradactyla</i>	39.1	43.8	34.4	39	5.7	4.7	20.8	12.5
<i>S. gigantea</i>	37.4	41.5	31.8	29	5.6	4.6	25.1	24.6
<i>S. temminckii</i>	39.5	47.7	30.3	28	5.6	4.6	24.6	20.0
Cytb								
<i>M. pentadactyla</i>	30.9	42.9	25.6	14	13.4	3.4	30.1	40.0
<i>M. javanica</i>	30.0	42.3	24.4	10	14.2	5.6	31.4	42.1
<i>P. tricuspis</i>	30.9	41.5	31.1	26	13.1	3.2	25.0	29.6
<i>P. tetradactyla</i>	31.2	42.1	29.5	23	12.9	3.4	26.4	31.5
<i>S. gigantea</i>	32.5	44.7	28.0	18	12.2	2.4	27.3	34.9
<i>S. temminckii</i>	31.7	43.4	28.3	19	12.4	2.9	27.5	34.7
COI								
<i>M. pentadactyla</i>	28.4	39.3	27.9	21	16.6	5.8	27.1	33.7
<i>M. javanica</i>	26.1	32.8	26.6	18	18.6	11.4	28.6	38.0
<i>P. tricuspis</i>	27.0	26.8	34.1	26	16.8	29.2	22.0	18.4
<i>P. tetradactyla</i>	27.9	38.0	33.4	33	15.7	4.4	23.0	25.0
<i>S. gigantea</i>	29.0	41.8	32.1	31	15.8	3.3	23.0	24.2
<i>S. temminckii</i>	27.7	39.3	33.3	35	16.8	4.7	22.2	21.3
COII								
<i>M. pentadactyla</i>	32.6	41.7	24.9	17	13.5	6.1	29.1	35.5
<i>M. javanica</i>	31.3	37.3	21.9	11	14.8	10.1	32.0	42.1
<i>P. tricuspis</i>	32.6	42.7	30.8	31	13.4	5.7	23.2	20.7
<i>P. tetradactyla</i>	33.0	44.1	30.2	28	13.7	6.6	23.1	21.1
<i>S. gigantea</i>	33.9	46.7	29.2	28	12.3	2.6	24.5	22.5
<i>S. temminckii</i>	33.2	42.7	29.2	27	12.9	5.7	24.7	24.2
COIII								
<i>M. pentadactyla</i>	29.3	42.5	26.8	17	14.5	3.4	29.3	36.8
<i>M. javanica</i>	27.8	39.1	24.4	11	15.8	6.9	32.0	42.9
<i>P. tricuspis</i>	26.6	35.6	34.1	33	15.6	5.7	23.8	25.3
<i>P. tetradactyla</i>	28.2	39.1	33.2	30	13.8	1.9	24.8	29.1
<i>S. gigantea</i>	29.6	44.1	29.8	24	13.9	1.5	26.7	30.3

<i>S. temminckii</i>	28.1	37.5	31.7	27	14.9	6.5	25.3	29.1
ND1								
<i>M. pentadactyla</i>	32.8	52.8	24.8	11	12.3	3.1	30.0	33.0
<i>M. javanica</i>	30.3	45.9	22.6	5	14.9	10.1	32.2	38.7
<i>P. tricuspis</i>	31.0	46.3	30.9	26	13.1	5.4	25.0	22.2
<i>P. tetradactyla</i>	31.4	48.6	29.0	23	13.4	6.0	26.1	22.9
<i>S. gigantea</i>	33.0	51.4	29.0	21	11.7	2.2	26.3	24.9
<i>S. temminckii</i>	31.9	47.6	28.0	20	13.4	7.3	26.7	25.1
ND2								
<i>M. pentadactyla</i>	37.3	51.9	24.3	13	8.9	2.9	29.5	32.5
<i>M. javanica</i>	37.1	52.3	21.2	5	10.5	6.4	31.3	36.1
<i>P. tricuspis</i>	35.9	50.0	28.6	18	10.3	6.4	25.1	25.4
<i>P. tetradactyla</i>	38.2	54.9	29.5	23	9.1	2.9	23.3	19.7
<i>S. gigantea</i>	38.9	55.8	27.2	15	7.9	1.7	26.0	27.5
<i>S. temminckii</i>	38.3	54.3	28.3	18	8.0	2.6	25.3	24.6
ND3								
<i>M. pentadactyla</i>	34.6	53.9	25.1	9	11.0	3.5	29.4	33.9
<i>M. javanica</i>	31.5	45.2	22.0	3	13.9	10.4	32.7	41.7
<i>P. tricuspis</i>	31.9	51.3	31.6	20	11.3	3.5	25.2	25.2
<i>P. tetradactyla</i>	32.8	52.2	32.5	24	9.9	.9	24.9	22.6
<i>S. gigantea</i>	34.1	54.4	30.9	20	9.6	.9	25.4	24.6
<i>S. temminckii</i>	31.9	48.7	33.0	24	11.9	6.1	23.2	20.9
ND4								
<i>M. pentadactyla</i>	34.4	47.7	25.5	15	10.6	2.8	29.5	34.4
<i>M. javanica</i>	32.4	44.0	21.9	6	12.6	6.8	33.0	43.1
<i>P. tricuspis</i>	33.0	44.2	30.1	24	11.6	5.7	25.3	26.0
<i>P. tetradactyla</i>	33.7	45.6	30.5	28	10.3	3.3	25.5	23.5
<i>S. gigantea</i>	34.1	47.7	28.8	22	10.1	2.2	27.1	28.2
<i>S. temminckii</i>	34.0	45.8	29.2	26	10.7	4.6	26.0	23.9
ND4L								
<i>M. pentadactyla</i>	32.3	47.5	26.9	8	11.4	6.1	29.3	32.3
<i>M. javanica</i>	30.6	41.4	26.3	10	12.5	10.1	30.6	30.6
<i>P. tricuspis</i>	29.3	37.8	36.1	33	11.2	5.1	23.5	29.3
<i>P. tetradactyla</i>	27.2	34.7	35.0	30	12.6	6.1	25.2	27.2
<i>S. gigantea</i>	30.6	44.9	36.4	31	10.2	1.0	22.8	30.6
<i>S. temminckii</i>	28.9	40.8	32.0	26	12.6	5.1	26.5	28.9
ND5								
<i>M. pentadactyla</i>	34.9	44.6	24.8	13	9.8	1.3	30.4	40.9
<i>M. javanica</i>	33.6	42.2	20.9	6	11.5	4.8	34.0	47.4
<i>P. tricuspis</i>	34.1	44.8	29.9	24	11.4	4.3	24.5	26.8
<i>P. tetradactyla</i>	35.1	46.1	30.1	24	10.5	2.7	24.3	26.8
<i>S. gigantea</i>	35.0	45.7	27.3	19	10.1	1.7	27.7	34.0
<i>S. temminckii</i>	33.8	43.8	28.4	21	10.9	3.2	26.9	32.0

ND6								
<i>M. pentadactyla</i>	45.3	30.3	17.5	21	6.5	4.0	30.7	44.6
<i>M. javanica</i>	43.8	27.4	13.7	19	9.0	6.9	33.5	46.3
<i>P. tricuspis</i>	42.0	26.6	21.4	25	8.1	5.8	28.5	42.2
<i>P. tetradactyla</i>	41.8	26.0	22.0	25	6.4	5.2	29.9	43.4
<i>S. gigantea</i>	45.1	30.1	19.5	24	6.4	3.5	29.1	42.8
<i>S. temminckii</i>	43.4	30.2	20.5	24	7.2	3.5	28.9	42.4

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