Supplementary materials

Table S1. Accession numbers (Acc. Num.) of the *cox1* and *28S* sequences of *Stereotydeus* species and *Penthaleus major* deposited on GenBank and included in the analyses. Haplotypes ID are shown. * *P. major* specimens sampled in Mosselseveld, The Netherlands.

gene	Acc. Num.	Haplotype ID	Species
cox1	MZ350724	MI2	*S. ineffabilis*
	MZ350725	MI3	*S. ineffabilis*
	MZ350726	MI5	*S. ineffabilis*
	MZ350727	MI7	*S. ineffabilis*
	MZ350728	MI8	*S. ineffabilis*
	MZ350729	MI10	*S. ineffabilis*
	MZ350730	MI13	*S. ineffabilis*
	MZ350731	MI14	*S. ineffabilis*
	MZ350732	MD1	*S. delicatus*
	MZ350733	MD2	*S. delicatus*
	MZ350734	MD3	*S. delicatus*
	MZ350735	MD4	*S. delicatus*
	MZ350736	MD5	*S. delicatus*
	MZ350737	MD6	*S. delicatus*
	MZ350738	MB2	*S. belli*
	MZ350739	MB3	*S. belli*
	MZ350740	MB4	*S. belli*
	MZ350741	MB5	*S. belli*
	MZ350742	MB6	*S. belli*
	MZ350743	MB7	*S. belli*
	MZ350744	MB8	*S. belli*
	MZ350745	MB9	*S. belli*
	MZ350746	MB10	*S. belli*
	MZ350747	MN1	*S. nunatakis*
	MZ350748	MN2	*S. nunatakis*
	MZ350749	MP1	*S. punctatus*
	MZ350750	MP2	*S. punctatus*
	MZ350751	MP3	*S. punctatus*
	MZ350752	MP4	*S. punctatus*
	MZ350753	PMA	*Penthaleus major**

gene	Acc. Num.	Haplotype ID	Species
28S	MZ442270	RB1	*S. belli*
	MZ442271	RB2	*S. belli*
	MZ442272	RB3	*S. belli*
	MZ442273	RB4	*S. belli*
	MZ442274	RB5	*S. belli*
	MZ442275	RB6	*S. belli*
	MZ442276	RB7	*S. belli*
	MZ442277	RB8	*S. belli*
	MZ442278	RB9	*S. belli*
	MZ442279	RP1	*S. punctatus*
	MZ442280	RN1	*S. nunatakis*
	MZ442281	RN2	*S. nunatakis*
	MZ442282	RD1	*S. delicatus*
	MZ442283	RD2	*S. delicatus*
	MZ442284	RI1	*S. ineffabilis*
	MZ442285	RI2	*S. ineffabilis*
	MZ442286	RI3	*S. ineffabilis*
	MZ442287	RX1	*S. delicatus, S. ineffabilis*
	MZ442288	PMA	*Penthaleus major**

Table S2. Accession numbers (Acc. Num.) of the *cox1* sequences of *Stereotydeus* species and one Eriorhynchidae mite downloaded from GenBank and included in the analyses. Original haplotypes names and coordinates are shown; Area and ID are given in Demetras *et al.* [37]; the incongruencies are highlighted (red). For references, see Bibliografy section in the main text.

Acc. Num.	Haplotype	Latitude (S)	Longitude (E)	Area	ID	Reference	Species	Note
DQ305386	A; S26	77°32.758'; 77°38.32'	163°21.038'; 162°46.28'	DV	Sm1	[34,35,37]	*S. mollis*	
DQ305388	B	77°39.735'	163°05.835'	-	-	[34]	*S. mollis*	
DQ305389	B	77°32.758'; 77°38.32'	163°21.038'; 162°46.28'	DV	Sm2	[34,35,37]	*S. mollis*	
DQ305391	D; S31, S32	78°05.762'	163°45.540'	DV	Sm3	[34,35,37]	*S. mollis*	
DQ305398	E; S26	77°32.758'; 77°38.32'	163°21.038'; 162°46.28'	DV, SV	Sm4	[34,35,37]	*S. mollis*	
DQ305392	F; S31, S32	78°05.762'	163°45.540'	DV, SV	Sm5	[34,35,37]	*S. mollis*	
DQ305396	G; S36, S37	77°51.174'	166°40.804'	DV, SV, RI	Sm6	[34,35,37]	*S. mollis*	
DQ305368	H; S8, S26	77°13.266'; 77°00.863'; 77°39.735'; 77°32.758'	166°26.810'; 162°36.086'; 163°05.835'; 163°21.038'	DV, SV, RI	Sm7	[34,35,37]	*S. mollis*	
DQ305387	I; S25, S26, S27	77°45.833'	162°02.240'	DV, SV	Sm8	[34,35,37]	*S. mollis*	
DQ305397	J; S36, S37	77°51.174'	166°40.804'	DV, SV, RI	Sm9	[34,35,37]	*S. mollis*	Identical to **MI6** (*S. ineffabilis*)
DQ305385	K; S26	77°32.758'; 77°38.32'	163°21.038'; 162°46.28'	DV, SV	Sm10	[34,35,37]	*S. mollis*	Identical to **MI4** (*S. ineffabilis*)
DQ305390	L	77°13.266'; 77°32.760'; 77°38.033'	166°26.810'; 166°09.779'; 166°26.551'	DV, RI	Sm11	[34,35,37]	*S. mollis*	Identical to **MI1** (*S. ineffabilis*)
DQ305394	M; S27	77°26.122'	163°49.569'	GH	Sm12	[34,35,37]	*S. mollis*	
DQ305393	N; S33	77°02.298'	162°28.180'	DV	Sm13	[34,35,37]	*S. mollis*	
DQ309572	O; S11, S35	76°55.906'	166°54.808'	SV, BI	Sm14	[34,37]	*S. mollis*	Identical to **MI12** (*S. ineffabilis*)
DQ305395	P; S11, S35	76°55.906'	166°54.808'	DV, BI	Sm15	[34,35,37]	*S. mollis*	
DQ309573	Q; S26	77°32.758'; 77°38.32'	163°21.038'; 162°46.28'	DV	Sm16	[34,37]	*S. mollis*	
DQ309574	R; S11, S35	76°55.906'	166°54.808'	BI	Sm17	[34,37]	*S. mollis*	Identical to **MI11**(*S. ineffabilis*)
DQ305361	S1	77°30.52'; 77°31.09'	162°10.13'; 162°11.26'	DV	Sm18	[35,37]	*S. mollis*	
DQ305372	S10	77°19.31'	161°53.54'	DV	Sm27	[35,37]	*S. mollis*	
DQ305373	S11	77°21.43'; 76°55.906'	162°06.06'; 166°54.808'	DV	Sm28	[35,37]	*S. mollis*	
DQ305374	S12	77°21.43'	162°06.06'	DV	Sm29	[35,37]	*S. mollis*	
DQ305375	S13	77°21.43'	162°06.06'	DV	Sm30	[35,37]	*S. mollis*	
DQ305376	S14	77°21.43'	162°06.06'	DV	Sm31	[35,37]	*S. mollis*	
DQ305377	S15	77°25.15'	161°48.33'	DV	Sm32	[35,37]	*S. mollis*	
DQ305378	S16	77°33.15'	161°48.20'	DV	Sm33	[35,37]	*S. mollis*	
DQ305379	S17	77°42.05'	161°57.23'	DV	Sm34	[35,37]	*S. mollis*	
DQ305380	S18	77°31.05'	161°50.46'	DV	Sm35	[35,37]	*S. mollis*	
DQ305381	S19	77°31.05'	161°50.46'	DV	Sm36	[35,37]	*S. mollis*	
DQ305362	S2	-	-	DV	Sm19	[35,37]	*S. mollis*	W3 and/or W5?
DQ305366	S2	-	-	-	-	[35]	*S. mollis*	
DQ305382	S20	-	-	DV	Sm37	[35,37]	*S. mollis*	V11 - missing coordinates
DQ305383	S21	77°34.05'	162°04.50'	DV	Sm38	[35,37]	*S. mollis*	

DQ305384	S22	77°34.05'	162°04.50'	DV	Sm39	[35,37]	*S. mollis*	
DQ305363	S3	77°27.50'	162°33.38'	DV	Sm20	[35,37]	*S. mollis*	
DQ305364	S4	77°26.50′	162°35.44'	DV	Sm21	[35,37]	*S. mollis*	
DQ305365	S5	77°26.50′	162°35.44'	DV	Sm22	[35,37]	*S. mollis*	
DQ305367	S6	-	-	DV	Sm23	[35,37]	*S. mollis*	
DQ305369	S7	77°26.50′	162°35.44'	DV, SV	Sm24	[35,37]	*S. mollis*	
DQ305370	S8	77°19.31'; 77°38.34'; 77°38.30'; 77°13.266'	161°53.54'; 162°46.30'; 163°17.50'; 166°26.810'	DV, RI	Sm25	[35,37]	*S. mollis*	
DQ305371	S9	77°19.31'	161°53.54'	DV	Sm26	[35,37]	*S. mollis*	
HM537082	Sm40	-	-	SV	Sm40	[37]	*S. mollis*	
HM537083	Sm41	-	-	SV	Sm41	[37]	*S. mollis*	
HM537084	Sm42	-	-	SV	Sm42	[37]	*S. mollis*	
HM537085	Sm43	-	-	SV	Sm43	[37]	*S. mollis*	
HM537086	Sm44	-	-	SV	Sm44	[37]	*S. mollis*	Identical to **MI9** (*S. ineffabilis*)
HM537087	Sm45	-	-	SV	Sm45	[37]	*S. mollis*	
HM537088	Sm46	-	-	SV	Sm46	[37]	*S. mollis*	
HM537089	Sm47	-	-	SV	Sm47	[37]	*S. mollis*	
HM537090	Sm48	-	-	SV	Sm48	[37]	*S. mollis*	
HM537091	Sm49	-	-	SV	Sm49	[37]	*S. mollis*	
HM537092	Sm50	-	-	SV	Sm50	[37]	*S. mollis*	
DQ309575	*S. shoupi*	83°45.65′	172°44.37′	-	-	[34]	*S. shoupi*	
DQ309576	*S. shoupi* 1	83°45.65′	172°44.37′	-	-	[34,37]	*S. shoupi*	
DQ309577	*S. belli*	72°19.192′	170°14.043′	-	-	[34,37]	*S. belli*	
DQ309578	*S. villosus*	62°2′	58°21′	-	-	[34]	*S. villosus*	
DQ309579	*Stereotydeus* sp. a	28°15.333′	153°09.666′	-	-	[34]	*Stereotydeus* sp.	
DQ309580	*Stereotydeus* sp. b	28°15.333′	153°09.666′	-	-	[34]	*Stereotydeus* sp.	
AF142135	*Eriorhynchus* sp.	19°15′	146°49′	-	-	[34,35,37,59]	*Eriorhynchus* sp.	

Table S3: List of the datasets (single and multi-locus), number of new sequences obtained and used in each dataset (**n.**), markers, reference sequences and outgroups used for the analyses and models of nucleotide evolution that best fitted, divided according to the partition applied and to the respective tree search optimization criteria.

	n.	single/multi locus	*cox1*	*28S*	Ref.	Outgroups	Best model			
							1st	2nd	3rd	non-cod.
cox1 no outgroup	159	single	x	-	*S. shoupi* (2) *S. villosus* *Stereotydeus* sp. (2) *S. belli*	-	TRN+G	TRN+I	F81+I	-
28S no outgroup	159	single	-	x	-	-	-	-	-	HKY+I

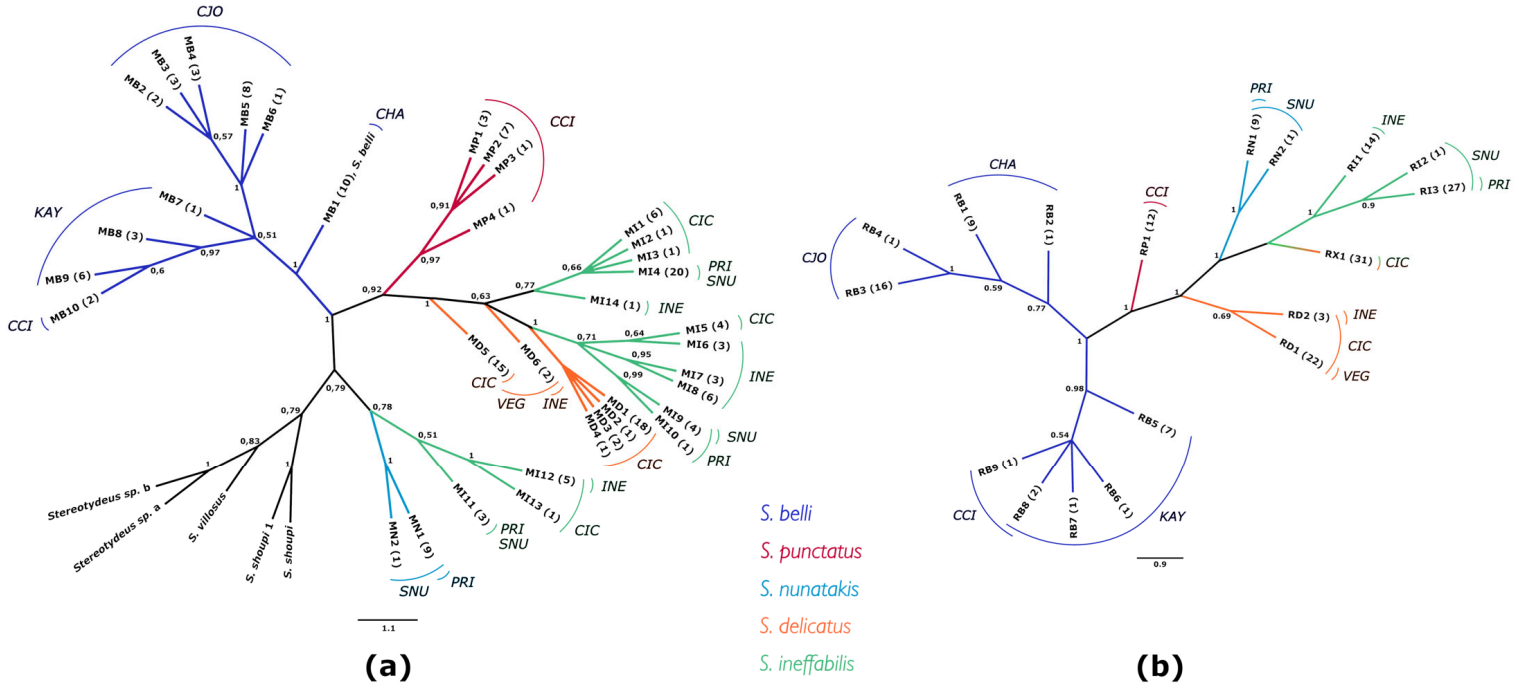

Figure S1. Unrooted phylogenetic trees of *Stereotydeus* specimens with posterior probabilities shown at nodes. **(a)** *cox1* haplotypes with frequencies in brackets; **(b)** *28S* haplotypes with frequencies in brackets (see **Table 5** in the main text for the haplotype labels).