Table S8. Amino acids use frequencies of proteins encoded by newly sequenced mitogenomes.

species	*Sipyloidea biplagiata*		*Micadina brevioperculina*		*Acanthophasma brevicercum*		*Phraortes liaoninggensis*		*Pseudophasma subapterum*	
AA	Count	%	Count	%	Count	%	Count	%	Count	%
Phe(F)	336	9.11	331	8.95	353	9.55	334	9.06	344	9.3
Leu2(L2)	386	10.47	415	11.23	411	11.12	383	10.39	368	9.95
Leu1(L1)	113	3.06	87	2.35	73	1.97	111	3.01	136	3.68
Ile(I)	376	10.2	373	10.09	369	9.98	366	9.93	345	9.33
Met(M)	359	9.73	361	9.76	390	10.55	369	10.01	312	8.44
Val(V)	173	4.69	173	4.68	155	4.19	182	4.94	204	5.52
Ser2(S2)	224	6.07	220	5.95	226	6.11	227	6.16	229	6.19
Pro(P)	130	3.52	133	3.6	128	3.46	134	3.64	133	3.6
Thr(T)	210	5.69	207	5.6	206	5.57	198	5.37	218	5.9
Ala(A)	110	2.98	124	3.35	112	3.03	113	3.07	135	3.65
Tyr(Y)	179	4.85	182	4.92	177	4.79	182	4.94	175	4.73
His(H)	64	1.74	67	1.81	64	1.73	68	1.85	63	1.7
Gln(Q)	66	1.79	64	1.73	63	1.7	62	1.68	62	1.68
Asn(N)	190	5.15	192	5.19	208	5.63	194	5.26	193	5.22
Lys(K)	110	2.98	110	2.98	113	3.06	111	3.01	106	2.87
Asp(D)	74	2.01	72	1.95	71	1.92	75	2.04	76	2.06
Glu(E)	76	2.06	75	2.03	76	2.06	76	2.06	78	2.11
Cys(C)	43	1.17	45	1.22	46	1.24	51	1.38	49	1.33
Trp(W)	92	2.49	96	2.6	89	2.41	90	2.44	98	2.65
Arg(R)	54	1.46	52	1.41	51	1.38	52	1.41	52	1.41
Ser1(S1)	121	3.28	115	3.11	120	3.25	107	2.9	119	3.22
Gly(G)	202	5.48	203	5.49	196	5.3	200	5.43	203	5.49