

Table S1. Information on the 58 species used for phylogenetic analysis.

Family	Subfamily	Species	Length	Accession no.	Reference
Aschiphasmatidae	Aschiphasmatinae	<i>Nanhuaphasma hamicercum</i> Chen & He, 2002	14,921bp	MZ312646	[34]
		<i>Orthomeria smaragdinum</i> Redtenbacher, 1906	15,895 bp	MZ31264	[34]
Bacillidae	Bacillinae	<i>Bacillus rossius</i> Rossi, 1790	14,152bp	GU001956	[72]
		<i>Bacillus atticus</i> Brunner von Wattenwyl, 1882	14,141bp	GU001955	[72]
Heteropterygidae	Dataminae	<i>Orestes mouhotii</i> Bates, 1865	16,223 bp	AB477462	[39]
		<i>Orestes guangxiensis</i> Bi & Li, 1994	16,869 bp	MW450873	[45]
	Obriminae	<i>Aretaon asperrimus</i> Redtenbacher, 1906		SRR1172270	[52]
		<i>Sungaya inexpectata</i> Zompro, 1996	17,368 bp	OQ682523	This study
	Heteropteryginae	<i>Heteropteryx dilatata</i> Parkinson, 1798	16,618 bp	AB477468	[39]
Lonchodidae	Lonchodinae	<i>Phraortes illepidus</i> Brunner von Wattenwyl, 1907	16,456 bp	AB477460	[39]
		<i>Megalophasma granulatum</i> Bi, 1995	15,275 bp	KY124331	[32]
		<i>Phraortes</i> sp. Miyako Island	14,913 bp	AB477465	[39]
		<i>Phraortes</i> sp. Iriomote Island	16,867 bp	AB477464	[39]
		<i>Eurycantha calcarata</i> Lucas, 1869	16,280 bp	MW915467	[54]
		<i>Carasisus morosus</i> Brunner von Wattenwyl, 1907		SRR3211828	[52]
		<i>Carausius</i> sp.	16,198 bp	OQ682524	This study
		<i>Stheneboea repudiosa</i>	16,376 bp	OQ682531	This study
		Brunner von Wattenwyl, 1907			
		<i>Phraortes lianzhouensis</i> Chen & He, 2008	16,690 bp	OQ682528	This study
	Necrosciinae	<i>Micadina phluctainoides</i> Rehn, 1904	16,507 bp	AB477466	[39]
		<i>Sipyloidea sipylus</i> Westwood, 1859	17,001 bp	AB477470	[39]
		<i>Calvisia medogensis</i> Bi, 1993	16,107 bp	KY124330	[32]
		<i>Neohirasea japonica</i> Haan, 1842	15,305 bp	AB477469	[39]
		<i>Micadina brachyptera</i> Liu & Cai, 1994	15,879 bp	MT025192	[33]
		<i>Neohirasea stephanus</i> Redtenbacher, 1908	18,021 bp	OL405132	Unpublished
		<i>Lopaphus albopunctatus</i> Chen & He, 2004	15,011 bp	OQ682525	This study
		<i>Marmessoidea bispinus</i> Burmeister, 1838	16,630 bp	OQ682527	This study
		<i>Lopaphus sphalerus</i> Redtenbacher, 1908	17,761 bp	OQ682526	This study
Phasmatidae	Megacraniinae	<i>Megacrania alpheus adan</i> Yamasaki, 1991	17,124 bp	AB477471	[39]
	Extatosomatinae	<i>Extatosoma tiaratum</i> Macleay, 1826	16,537 bp	AB642680	[53]
	Phasmatinae	<i>Acanthoxyla</i> sp.		SRR2089887	[52]
		<i>Clitarchus hookeri</i> White, 1846		SRR3080266	[52]
		<i>Argosarchus horridus</i> White, 1846		SRR2089902	[52]
	Clitumninae	<i>Entoria okinawaensis</i> Shiraki, 1935	16,910 bp	AB477459	[39]

		<i>Phobaeticus serratipes</i> Gray, 1835	16,182 bp	AB477467	[39]
		<i>Ramulus hainanense</i> Chen & He, 2002	15,590 bp	FJ156750	Unpublished
		<i>Ramulus irregulariterdentatus</i> Brunner von Wattenwyl, 1907	16,633 bp	AB477463	[39]
		<i>Rumulus artemis</i> Westwood, 1859		SRR1172422	[52]
		<i>Medauroidea extradentata</i> Brunner von Wattenwyl, 1907		SRR1172394	[52]
		<i>Phryganistria guangxiensis</i> Chen & He, 2008	17,005bp	MW450875	[45]
		<i>Pharnaciini</i> sp. NS-2020 Günther, 1953	15,192 bp	MT025193	[33]
	Pachymorphinae	<i>Niveaphasma anulata</i> Hutton, 1898		SRR2089878	[52]
		<i>Tectarchus obovatus</i> Salmon, 1954		SRR2089893	[52]
		<i>Tectarchus salebrosus</i> Hutton, 1899		SRR2089908	[52]
		<i>Asteliaphasma jucundum</i> Salmon, 1991		SRR2089913	[52]
		<i>Spinotectarchus acornutus</i> Hutton, 1899		SRR2089897	[52]
		<i>Micrarchus hystriculus</i> Westwood, 1859		SRR1054191	[52]
		<i>Micrarchus</i> sp.		SRR1054193	[52]
Phylliidae	Phylliinae	<i>Cryptophyllum tibetense</i> Liu, 1993	18,248 bp	KX091862	Unpublished
		<i>Cryptophyllum westwoodii</i> Wood-Mason, 1875	17,222 bp	MW229063	Unpublished
		<i>Pulchriphyllum bioculatum</i> Gray, 1832	16,686 bp	OQ682529	This study
		<i>Pulchriphyllum giganteum</i> Hausleithner, 1984	16,868 bp	OQ682530	This study
		<i>Pulchriphyllum giganteum</i> Hausleithner, 1984	13,980 bp	AB477461	[39]
		<i>Phyllum siccifolium</i> Linnaeus, 1758		ERR392012	[52]
Pseudophasmatidae	Pseudophasmatinae	<i>Peruphasma schultei</i> Conle & Hennemann, 2005	15,896bp	MW450874	[45]
		<i>Peruphasma schultei</i> Conle & Hennemann, 2005		SRR1002984	[52]
Timematidae	Timematinae	<i>Timema californicum</i> Scudder, 1895	14,387 bp	DQ241799	[73]
Mantophasmatidae	Mantophasmatinae	<i>Sclerophasma paresisense</i> Klass, Picker, Damgaard, van Noort & Tojo, 2003	15,500 bp	DQ241798	[73]
Grylloblattidae		<i>Grylloblatta sculleni</i> Gurney, 1937	15,595 bp	DQ241796	[73]