

Table S1. Bootstrap results based on analysis of taxon-depleted *nt123_degen1* data sets.¹

	Call + Hybl	x	x	x	x	x	x		
71	Eper + Copr – <i>Copromorpha</i>	35	69 (no <i>Copromorpha</i>)	76 (no <i>Copromorpha</i>)	73 (no <i>Copromorpha</i>)	37	54 (no <i>Copromorpha</i>)		
	Tort	100	100	100	100	100	100		
	Tort + Immo	x	44	32	x	x	x		
47	Zyga sensu stricto	96	100	100	100	100	100		
46	Zyga + Sesi + Coss	x	25 [no Zyga:Cycl or Zyga:Epipl]	x	3	2 [no Zyga:Cycl or Zyga:Epipl]	23 [no Zyga:Cycl or Zyga:Epipl]		
	Sesi + Coss	x	67	x	x	x	64		
	Schr + Grac:Doug	37	[no Grac:Doug]	78	77	39	[no Grac:Doug]		
	Ditrysia – (Chor, Urod, Ypon, Grac, Tine)	13		x	x				
16	Ditrysia – (Urod, Ypon, Grac, Tine)	40		56	57				
15	Ditrysia – (Ypon, Grac, Tine)	98		99	99				
	Ypon + Grac	99		100	100				
	Tine	x		x	x				
14	Ditrysia – Tine (= DnT)	100		100	100				
	Tine:Tine (no <i>Eudarcia</i>) + Tine:Acro	100		100	100				
13	DnT + Tine:Tine (no <i>Eudarcia</i>) + Tine:Acro	64		57	55				
	Tine:Eriocot	100		100	100				
	Tine:Erio +Tine: <i>Eudarcia</i>	x		x	x				
12	DnT + Tine:Tine (no <i>Eudarcia</i>) + Tine:Acro + Tine:Eriocot	68		67	65				
	Tine:Psyc + Tine:Arrh +Tine:Eriocot + Tine: <i>Eudarcia</i>	x		x	x				
	Tine:Psyc + Tine:Arrh	100		100	100				
11	DnT + Tine – Tine: <i>Eudarcia</i>	87		90	94				
10	Ditrysia (= DnT + Tine)	100		100	100				
9	Ditrysia + Pala: <i>Palaeophatus</i>	92		89	89				
	Tisc + Pala (no Pala: <i>Palaeophatus</i>)	100		100	99				
8	Ditrysia + Tisc + Pala	99		99	99				
33	Adel	100		100	100				
32	Adel + Ande	67		66	68				
7	Ditrysia + Tisc + Pala + Adel + Ande (= EULEP)	100		100	100				
	Nept	100		100	100				
6	EULEP + Nept	99		100	100				

	Acan + Neop	35		76 [no Neop: <i>Apoplani</i> a]	[no Acan or Neop]				
	Acan + Neop + Erio	x		45 [no Neop: <i>Apoplani</i> a]	[no Acan or Neop]				
	EULEP + Nept + Acan + Neop + Erio	26		33 [no Neop: <i>Apoplani</i> a]	52 [no Acan or Neop]				
28	Hepi + Mnes	100		100	100				
27	Hepi + Mnes + Loph	58		72	92				
4	EULEP + Nept + Acan + Neop + Hepi + Mnes + Loph	28		x	x				
	Erio	100		100	100				
3	EULEP + Nept + Acan + Neop + Hepi + Mnes + Loph + Erio (= GLOS)	95		100	100 [no Acan or Neop]				
2	GLOS + Heterob	99		99	99				
	Micr	100		100	100				
	Microp + Agat	70		77	76				
1	Lepidoptera	100		100	100				

¹ Bootstrap results in PAUP* are those shown under the "le = yes" option. "Node number" (column 1) refers to correspondingly numbered nodes in Figure 3. "Strong" bootstrap values, i.e., ≥80%, are highlighted in yellow. "Moderate" bootstrap values, i.e., 70-79%, are highlighted in green. Bootstrap results for taxa highlighted in blue are also present in Table 4. x, Not present in bootstrap table under le option, so value <50%; *ACrogue*, Adams-consensus rogue; *RNRrogue*, RNR rogue; *heterog*, heterogeneous taxa according to the boundaries in Figure C. *Bomb*, Bombycoidea; *Lasi*, Lasiocampidae; *Drep:Drep*, Drepanoidea:Drepanidae; *Geom:Sema*, Geometroidea:Sematuridae; *Drep:Epic*, Drepanoidea:Epiceiidae; *Noct*, Noctuoidea; *Drep*, Drepanoidea; *Geom*, Geometroidea; *Mima*, Mimallonidae; *Cime*, Cimeliidae; *Geom:Geom*, Geometroidea:Geometridae; *Geom:Uran*, Geometroidea:Uraniidae; *MACRO*, Macroheterocera; *Doa*, Noctuoidea: *Doa* sp.; *Pyra*, Pyraloidea; *Hybl*, Hyblaeidae; *Gele*, Gelechioidea; *Copr*, Copromorphoidea; *Eper*, Epermeniidae; *Thyr*, Thyrididae; *Call*, Callidulidae; "butterflies", Nymphalidae + Lycaenidae + Pieridae + Hedylidae + Hesperiidae + Papilionidae; *Pter*, Pterophoridae; *Aluc*, Alucitidae; *Gele*, Gelechioidea; OBTECT, Obtectomera; *Copromorpha*, *Copromorpha* sp.; *Tort*, Tortricoidea; *Immo*, Immoidea; *Zyga*, Zygaenoidea; *Sesi*, Sesioidae; *Coss*, Coccoidea; *Zyga:Cycl*, Zygaenoidea:Cyclotornidae; *Zyga:Epip*, Zygaenoidea:Epipyropidae; *Zyga sensu stricto*, Zygaenoidea – (*Zyga:Cycl*, *Zyga:Epip*); *Schr*, Schreckensteiniidae; *Grac:Doug*, Gracillarioidea:Douglasiidae; *Ditrysia*, Ditrysia (as defined in Figure S1); *Urod*, Urodidae; *Ypon*, Yponomeutoidea; *Grac*, Gracillarioidea; *Tine*, Tineoidea; *Tine:Tine*, Tineoidea:Tineidae; *Tine:Acro*, Tineoidea:Acrolophidae; *Tine:Eriocot*, Tineoidea:Eriocottidae; *DnT*, "Ditrysia no Tineoidea"; *Tine:Eudarcia*, Tineoidea:Eudarcia sp.; *Tine:Psyc*, Tineoidea:Psychidae; APODIT, Apoditry sia; *Adel*, Adeloidea; *Ande*, Andesianidae; *Eulep*, Eulepidoptera; *Acan*, Acanthopteroctetidae; *Neop*, Neopseustidae; *Erio*, Eriocraniidae; *Neop:Apoplania*, Neopseustidae:*Apoplania* sp.; *Tisc*, Tischeriidae; *Pala*, Palaephatidae; *Pala:Palaephatus*, Palaephatidae:*Palaephatus luteolus*; *Erio*, Eriocraniidae; *Hepi*, Hepialidae; *Mnes*, Mnesarchaeidae; *Loph*, Lophocoronidae; *Nept*, Nepticuloidea; *Agat*, Agathiphagidae; *GLOS*, Glossata; *Heterob*, Heterobathmiidae; *Micr*, Micropterigidae. *Lepidoptera*, Lepidoptera.