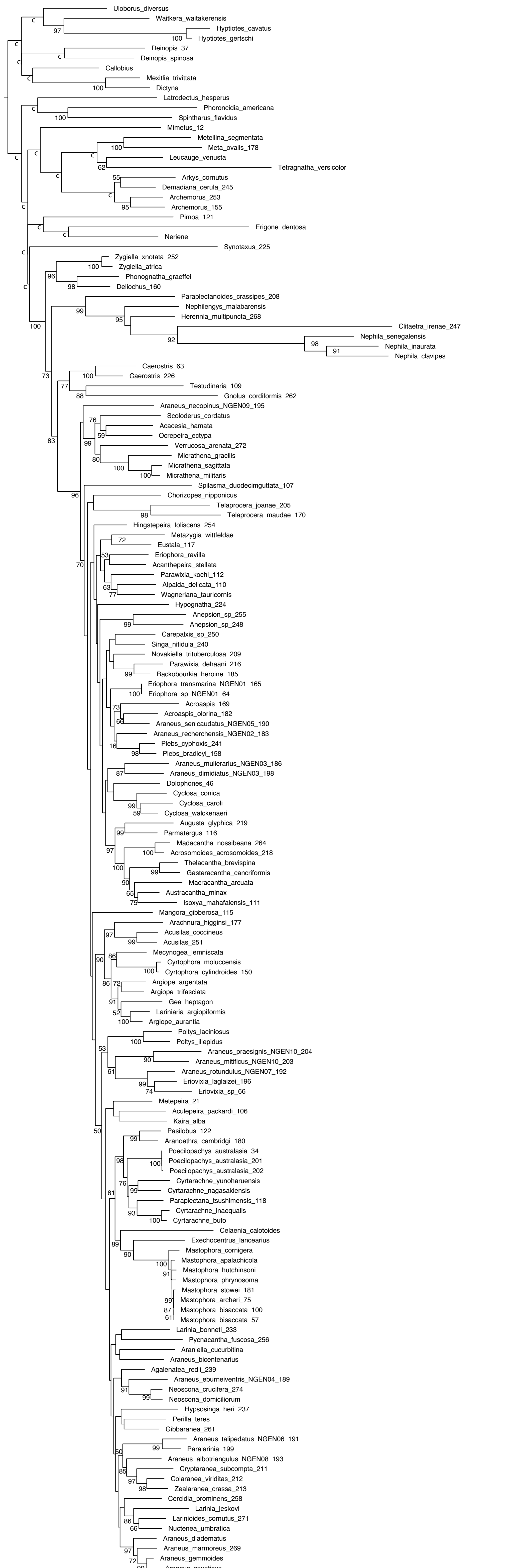
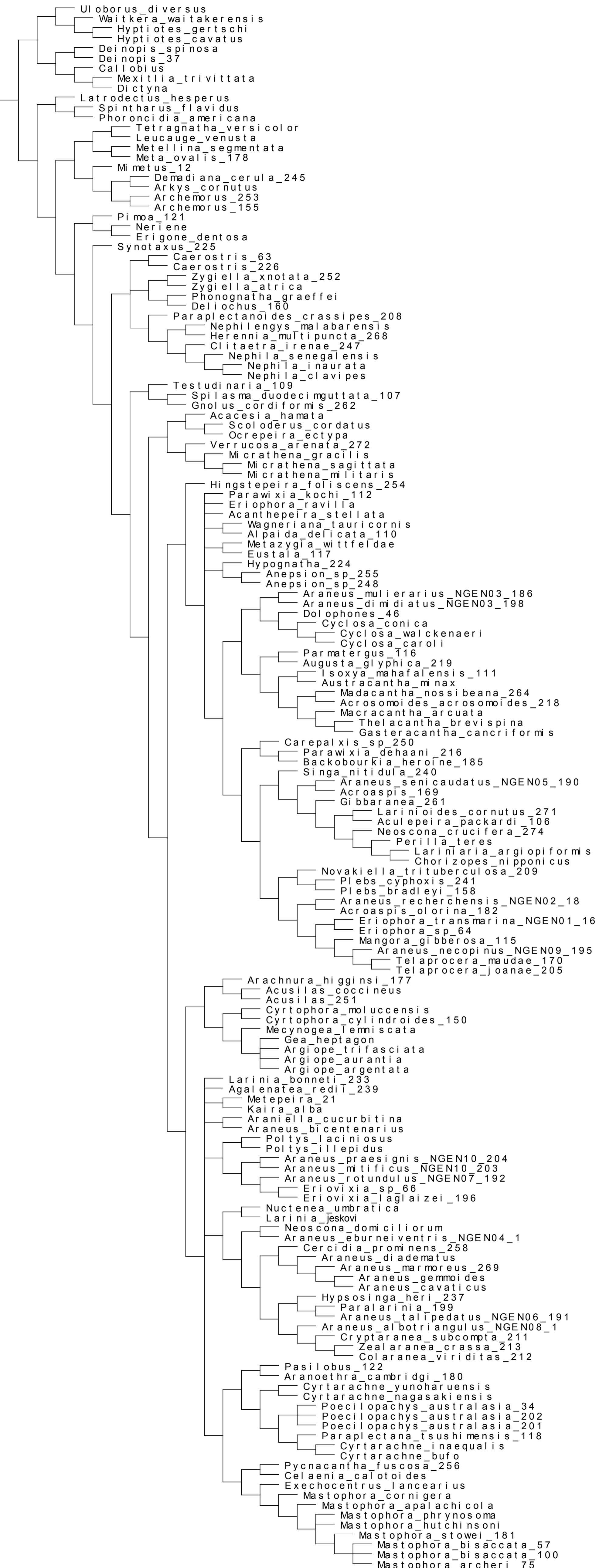
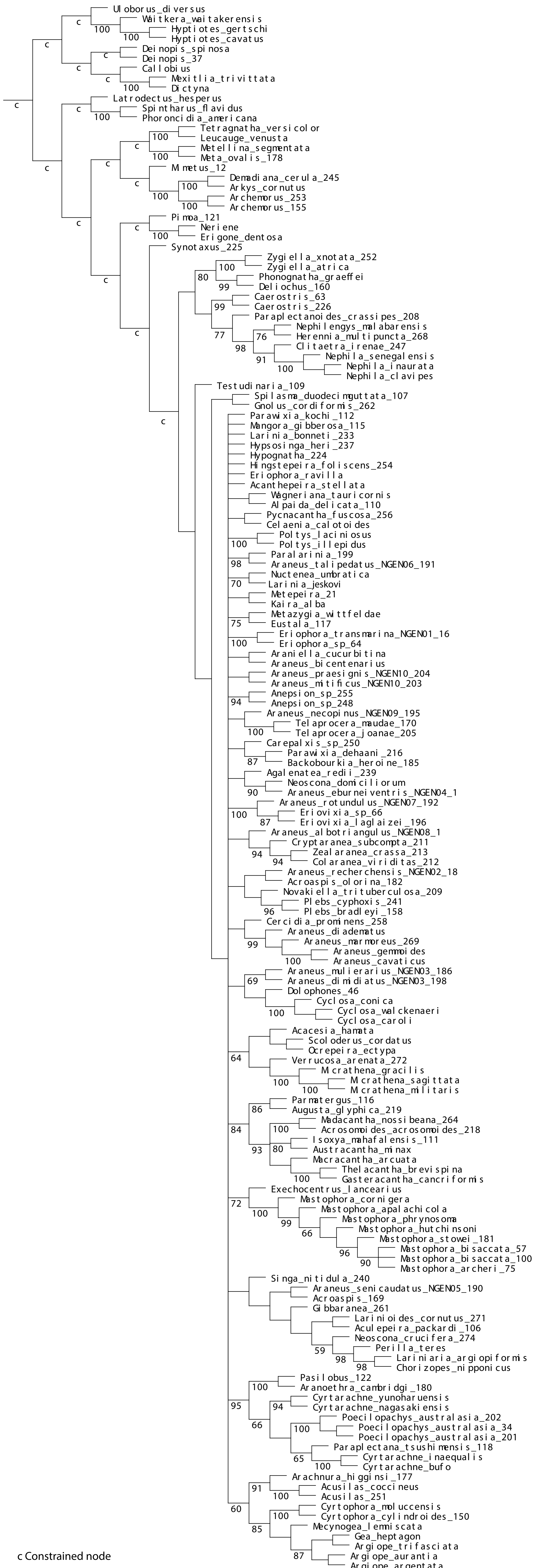


c Constrained node

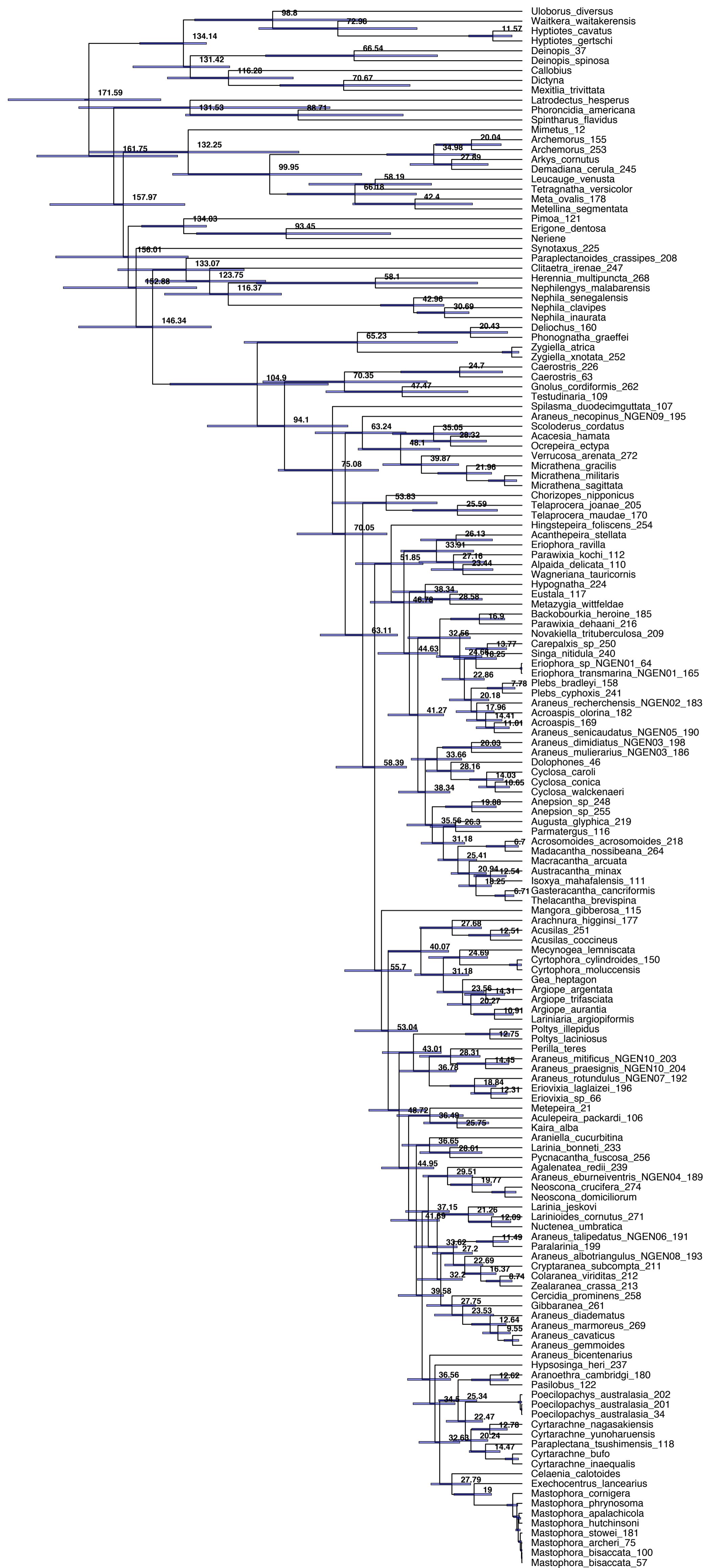
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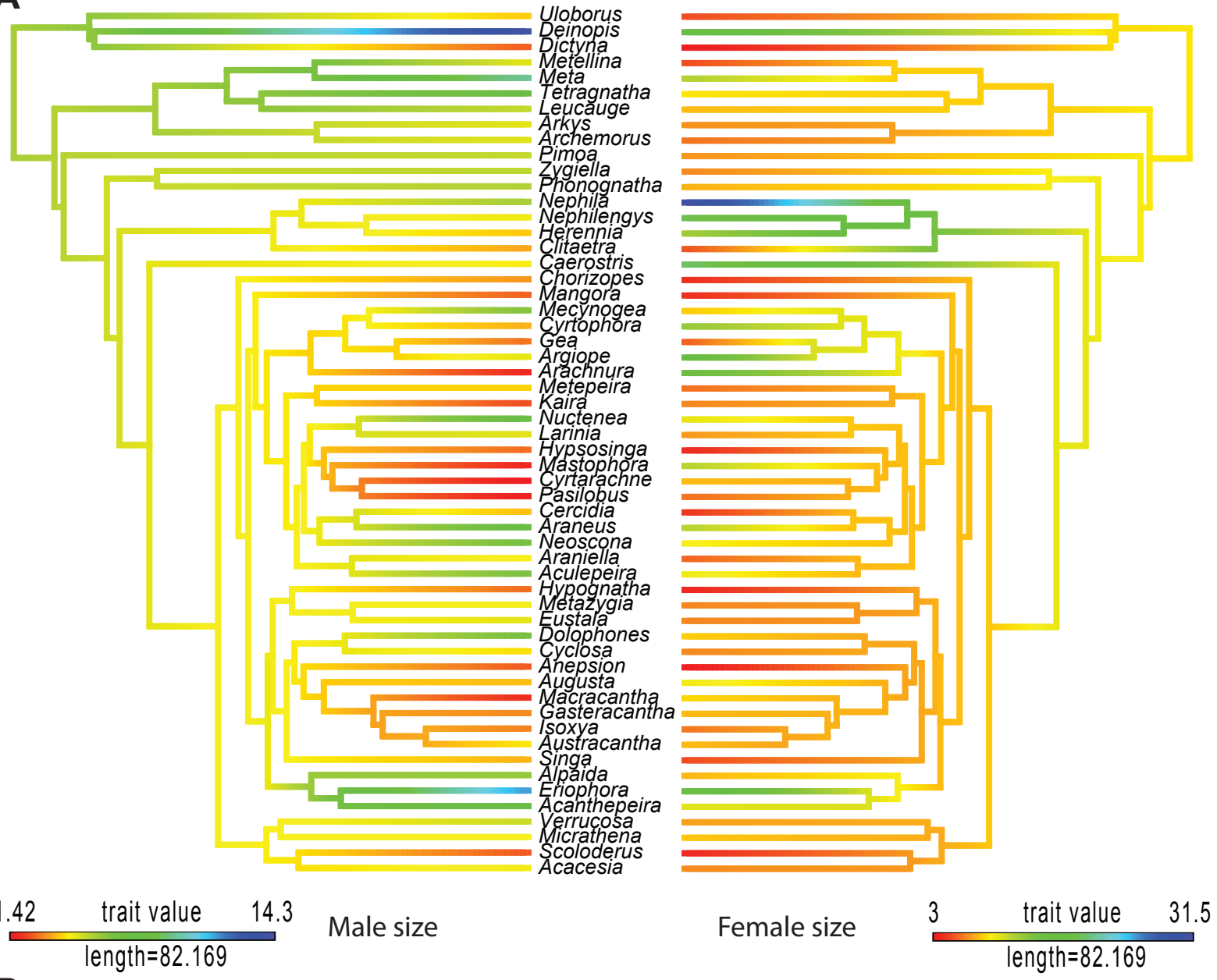
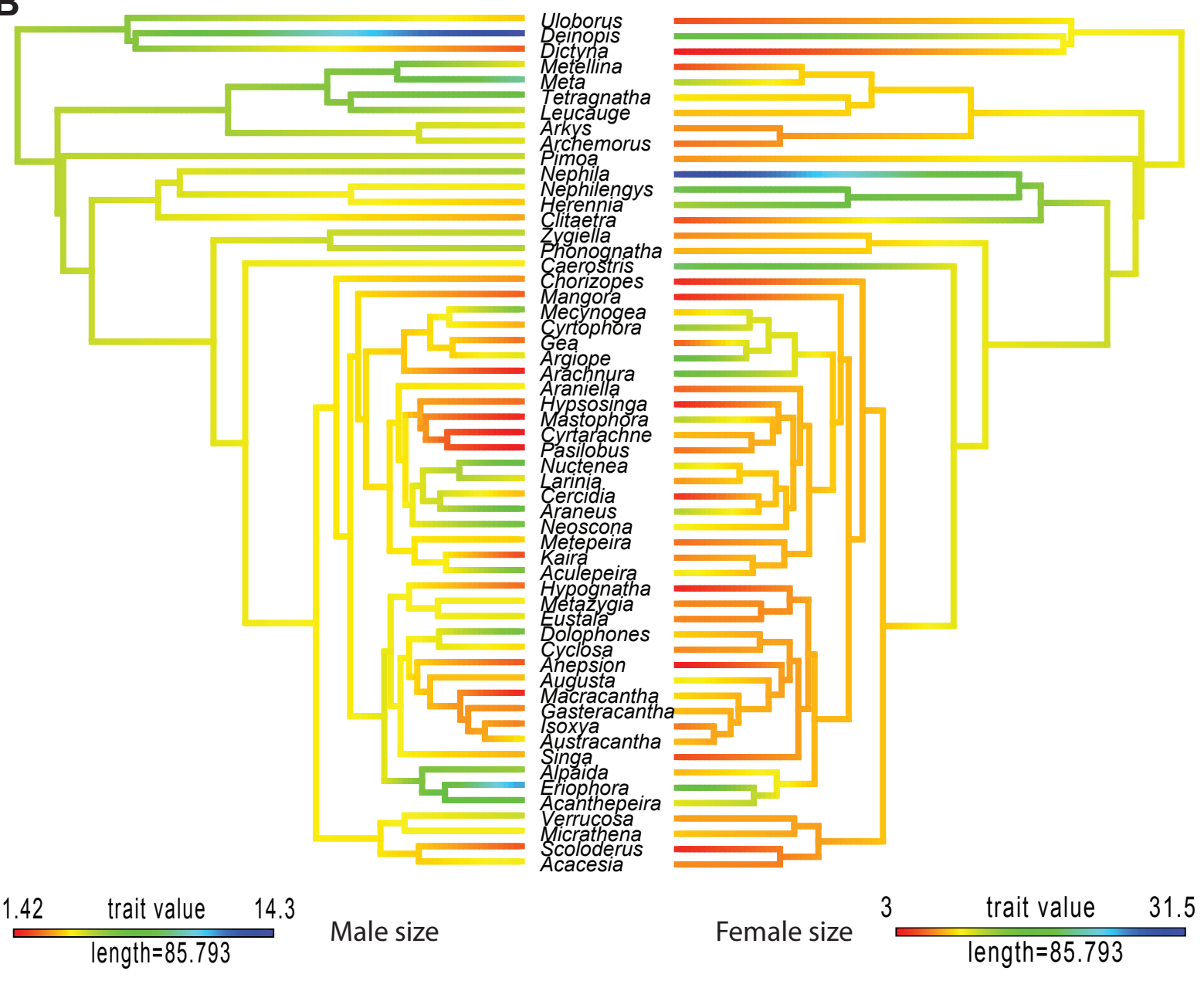


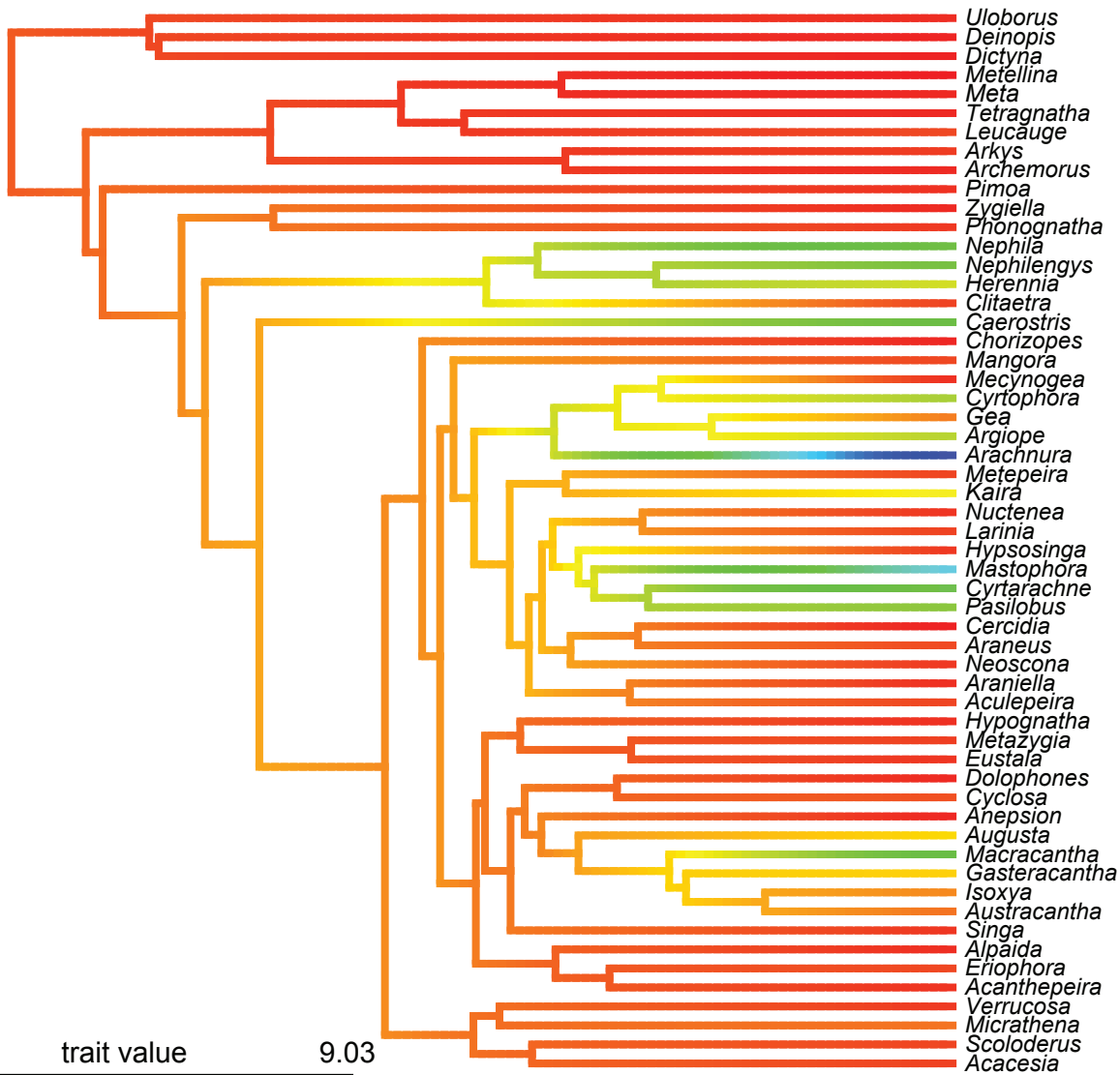
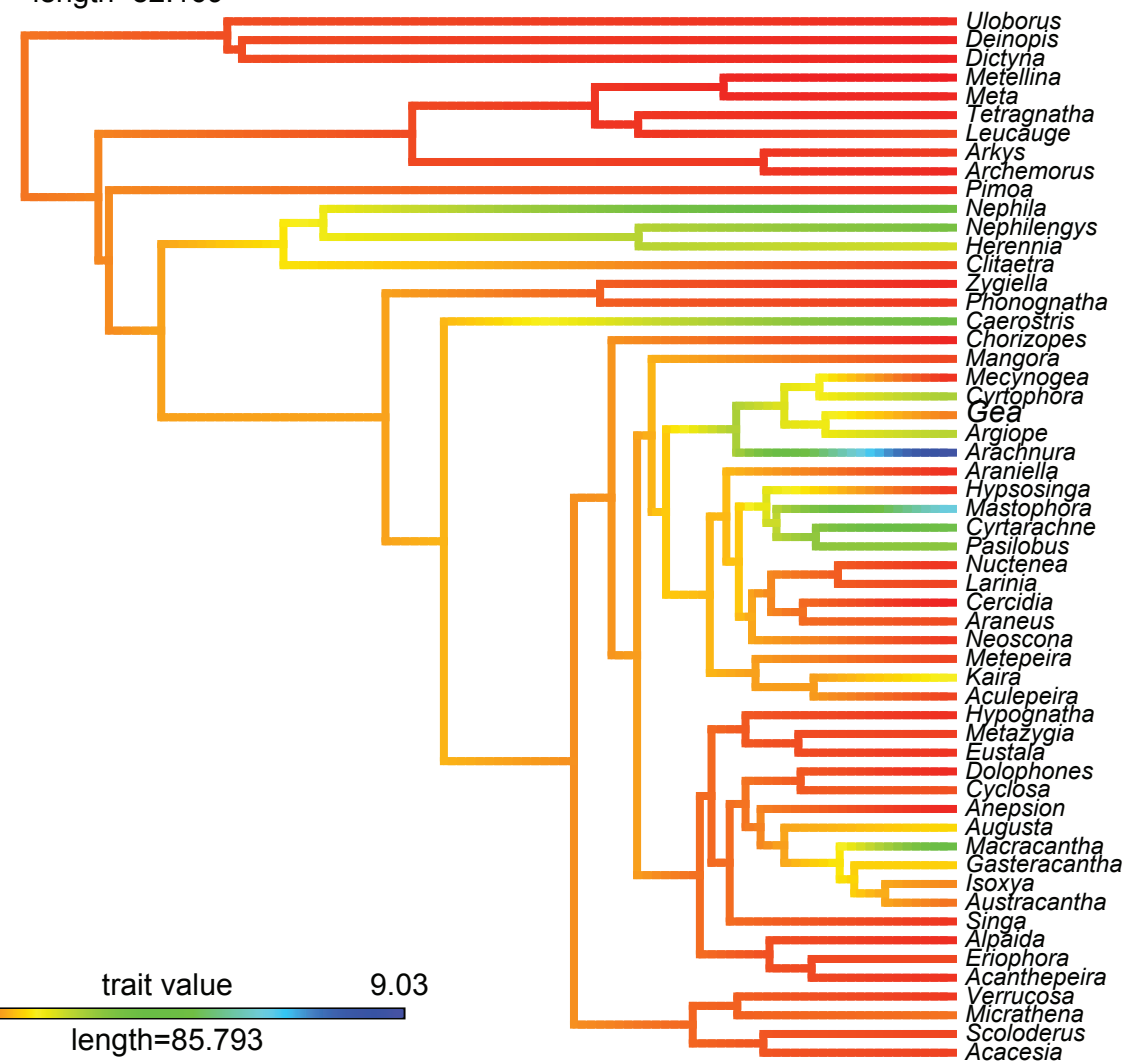


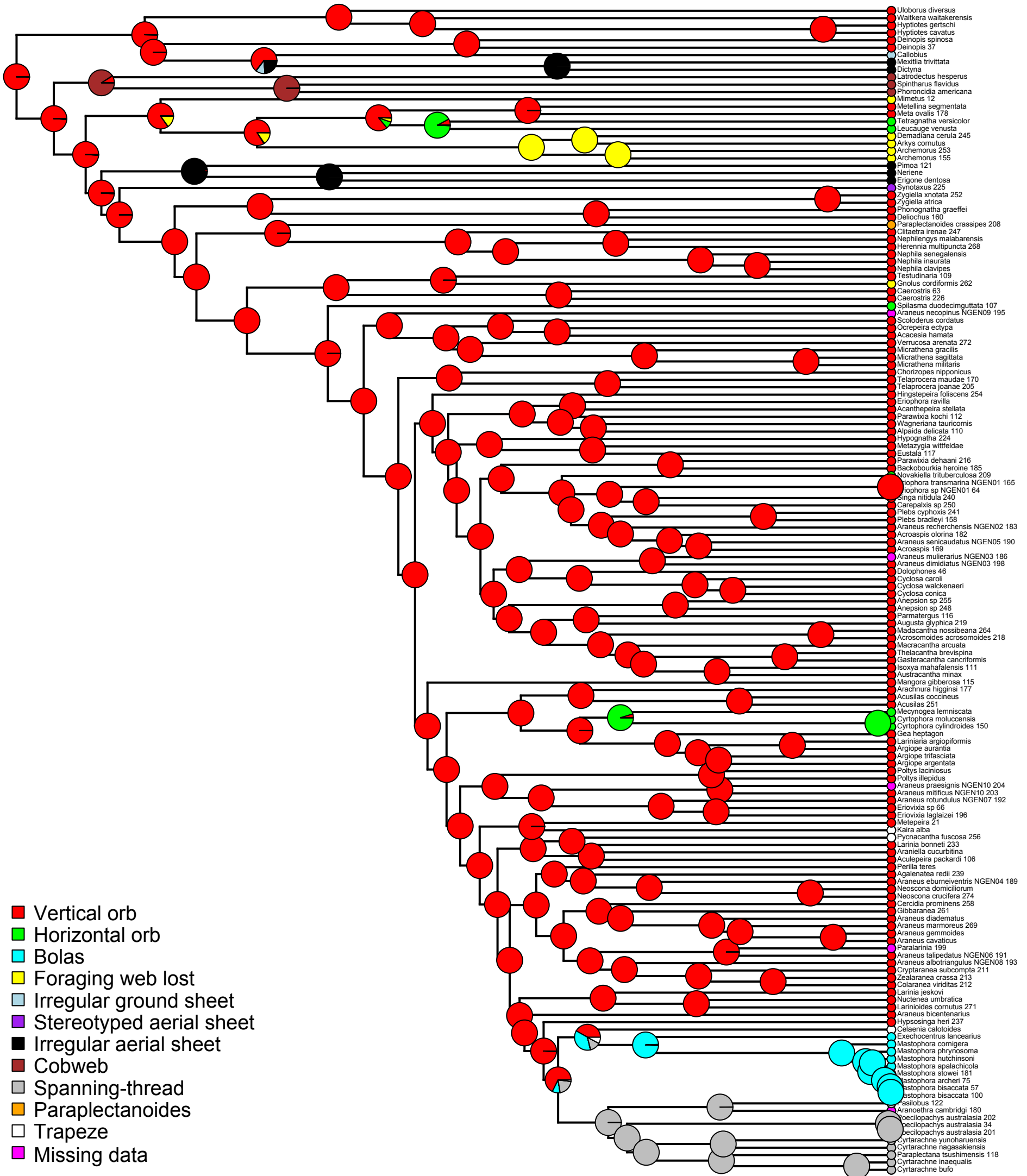


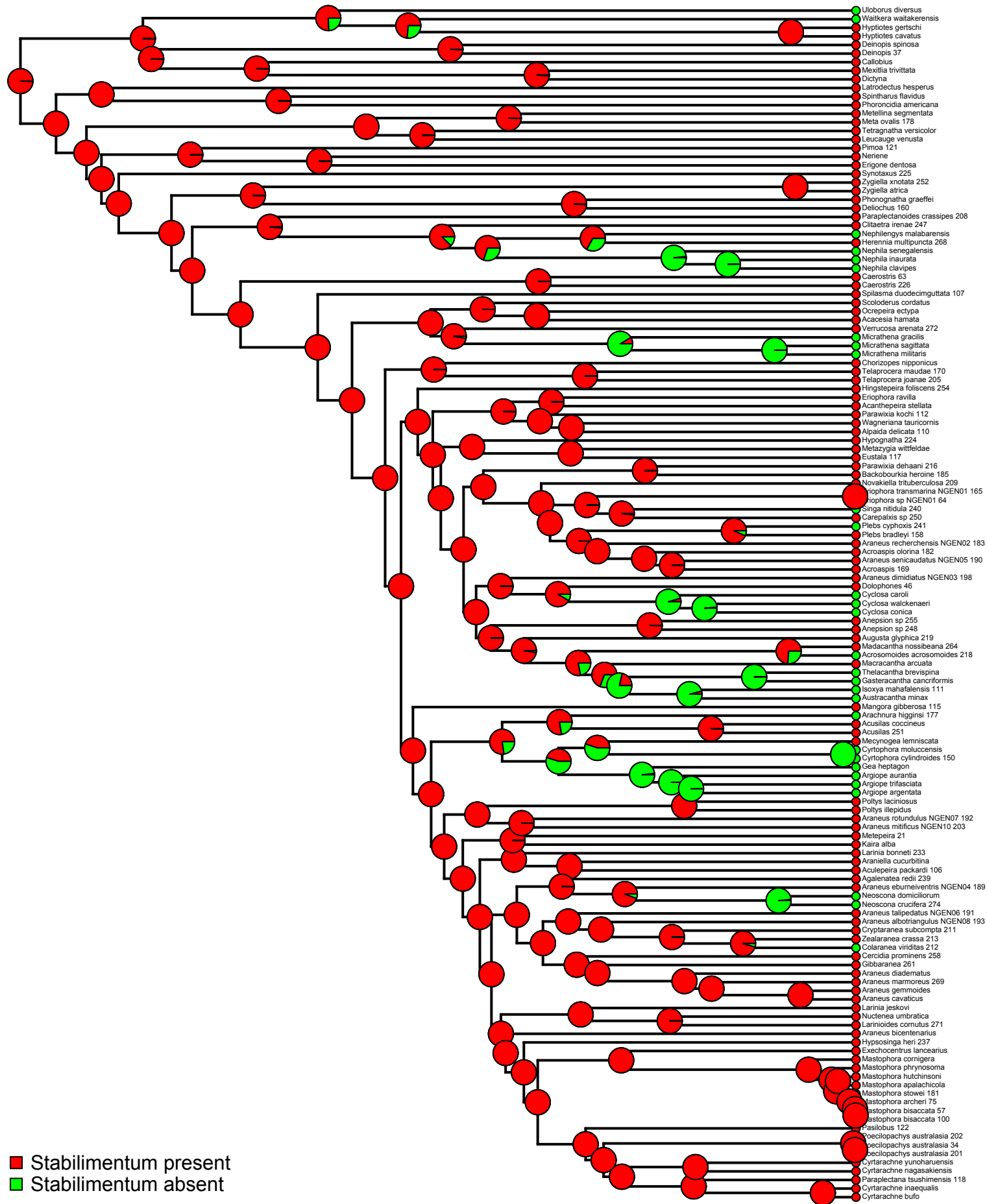
c Constrained node



A**B**

A**B**





■ Stabilimentum present
■ Stabilimentum absent

- Uloborus diversus
- Walckera walckerensis
- Hyptiotes gertschi
- Hyptiotes cavatus
- Deinopis spinosa
- Deinopis 37
- Callobius
- Mexilia trivittata
- Dictyna
- Latrodectus hesperus
- Spintharus flavidus
- Phoroncidia americana
- Metellina segmentata
- Meta ovalis 178
- Tetragnatha versicolor
- Leucauge venusta
- Pimoa 121
- Neriene
- Erigone dentosa
- Synotaxus 225
- Zygiella xnotata 252
- Zygiella atrica
- Phonognatha graeffei
- Deliochus 160
- Paraplectanoides crassipes 208
- Gillettea renae 247
- Nephilengys malabarensis
- Herennia multipuncta 268
- Nephila senegalensis
- Nephila inaurata
- Nephila clavipes
- Caerostris 63
- Caerostris 226
- Spilasma duodecimguttata 107
- Scoloderus cordatus
- Ocrepeira ectypa
- Acacesia hamata
- Verrucosa arenata 272
- Micrathena gracilis
- Micrathena sagittata
- Micrathena militaris
- Chorizopes nipponicus
- Telaprocera maudae 170
- Telaprocera joanae 205
- Hingstepeira foliifera 254
- Eriophora ravilla
- Acanthepeira stellata
- Parawixia kochi 112
- Wagneriana tauricornis
- Alpaida delicata 110
- Hypognatha 224
- Metazygia wittfeldae
- Eustala 117
- Parawixia dehaani 216
- Backobourkia heroine 185
- Novakiella trituberculosa 209
- Eriophora transmarina NGEN01 165
- Eriophora sp NGEN01 64
- Singa nitidula 240
- Carepalxis sp 250
- Plebs cyphoxis 241
- Plebs bradleyi 158
- Araneus recherchensis NGEN02 183
- Acroaspis olorina 182
- Araneus senicaudatus NGEN05 190
- Acroaspis 169
- Araneus dimidiatus NGEN03 198
- Dolophones 46
- Cyclosa caroli
- Cyclosa walckenaeri
- Cyclosa conica
- Anepsion sp 255
- Anepsion sp 248
- Augusta glyphica 219
- Madacantha rossibana 264
- Acrosomoides acrosomoides 218
- Macracantha arcuata
- Thelacantha brevispina
- Gasteracantha cancriformis
- Isoxya mahafalensis 111
- Austacantha minax
- Mangora gibberosa 115
- Arachnura higginsii 177
- Acusilas coccineus
- Acusilas 251
- Mecynogea lemniscata
- Cyrtophora moluccensis
- Cyrtophora cylindroides 150
- Gea heptagon
- Argiope aurantia
- Argiope trifasciata
- Argiope argentata
- Polyis laciniosus
- Polyis illepidus
- Araneus rotundulus NGEN07 192
- Araneus mitificus NGEN10 203
- Metepeira 21
- Kaira alba
- Larinia bonneti 233
- Araniella cucurbitina
- Aculepeira packardii 106
- Agalenatea redii 239
- Araneus eburneiventris NGEN04 189
- Neoscona domiciliorum
- Neoscona crucifera 274
- Araneus taipeidatus NGEN06 191
- Araneus albotriangulus NGEN08 193
- Cryptaranea subcompta 211
- Zealaranea crassa 213
- Colaranea viriditas 212
- Cercidia prominens 258
- Gibbaranea 261
- Araneus diadematus
- Araneus marmoreus 269
- Araneus gemmoides
- Araneus cavaticus
- Larinia jeskovi
- Nuctenea umbratica
- Larinioides cornutus 271
- Hyposisinga heri 237
- Exechocentrus lancearius
- Mastophora cornigera
- Mastophora phrynosoma
- Mastophora hutchinsoni
- Mastophora apalachicola
- Mastophora stowei 181
- Mastophora archeri 75
- Mastophora bisaccata 57
- Mastophora bisaccata 100
- Pasilobus 122
- Coeloplachys australasia 202
- Pecilopachys australasia 34
- Pecilopachys australasia 201
- Cyrtarachne yunoharuenis
- Cyrtarachne nagasakiensis
- Paraplectana tsushimensis 118
- Cyrtarachne inaequalis
- Cyrtarachne bufo





Genus

Deliochus Simon, 1894
Phonognatha Simon, 1894
Zygiella F. O. Pickard-Cambridge, 1902
Paraplectanoides Keyserling, 1886
Nephilengys L. Koch, 1872
Herennia Thorell, 1877
Clitaetra Simon, 1889
Nephila Leach, 1815
Caerostris Thorell, 1868
Gnolus Simon, 1879
Testudinaria Taczanowski, 1879
Scoloderus Simon, 1887
Acacesia Simon, 1895
Ocrepeira Marx, 1883
Verrucosa McCook, 1888
Micrathena Sundevall, 1833
Spilasma Simon, 1897
Chorizopes O. Pickard-Cambridge, 1871
Eustala Simon, 1895
Acanthepeira Marx, 1883
Eriophora Simon, 1864
Parawixia F. O. Pickard-Cambridge, 1904
Alpaída O. Pickard-Cambridge, 1889
Wagneriana F. O. Pickard-Cambridge, 1904
Hypognatha Guérin, 1839
Backobourkia Framenau, Dupérré, Blackledge & Vink, 2010
Parawixia F. O. Pickard-Cambridge, 1904
Novakiella Court & Forster, 1993
Carepalxis L. Koch, 1872
Singa C. L. Koch, 1836
"Eriophora" transmarina NGEN01_165
Plebs Joseph & Framenau, 2012
"Araneus" recherchensis NGEN02_183
Acroaspis Karsch, 1878
"Araneus" senicaudatus NGEN05_190
Dolophones Walckenaer, 1837
Cyclosa Menge, 1866
Augusta O. Pickard-Cambridge, 1877
Parmatergus Emerit, 1994
Acrosomoides Simon, 1887
Madacantha Emerit, 1970
Macracantha Simon, 1864
Austracantha Dahl, 1914
Isoxya Simon, 1885
Gasteracantha Sundevall, 1833
Thelacantha Hasselt, 1882
Mangora O. Pickard-Cambridge, 1889

Arachnura Vinson, 1863
Acusilas Simon, 1895
Mecynogea Simon, 1903
Cyrtophora Simon, 1864
Argiope Audouin, 1826
Gea C. L. Koch, 1843
Lariniaria Grasshoff, 1970
Poltya C. L. Koch, 1843
Perilla Thorell, 1895
Kaira O. Pickard-Cambridge, 1889
Aranoethra Butler, 1873
Pasilobus Simon, 1895
Poecilopachys Simon, 1895
Cyrtarachne Thorell, 1868
Paraplectana Brito Capello, 1867
Celaenia Thorell, 1868
Exechocentrus Simon, 1889
Mastophora Holmberg, 1876
Araneus Clerck, 1757 #
Larinia Simon, 1874
Pycnacantha Blackwall, 1865
Hypsosinga Ausserer, 1871
Larinia Simon, 1874
Larinioides Caporiacco, 1934
Nuctenea Simon, 1864
Cercidia Thorell, 1869
Araneus Clerck, 1757
"Araneus" talipedatus NGEN07_191
Paralarinia Grasshoff, 1970
"Araneus" albotriangulus NGEN08_193
Cryptaranea Court & Forster, 1988
Colaranea Court & Forster, 1988
Zealaranea Court & Forster, 1988

Type species	Simon
no	Nephilinae / PHOHOGNATHEAE
yes	Nephilinae / PHOHOGNATHEAE
yes	Argiopinae / ARANEAE~
yes	Argiopinae / ANEPSEAE
yes	Nephilinae / NEPHILEAE
yes	Nephilinae / HERENNIEAE
no	Nephilinae / CLITAETREAE
no	Nephilinae / NEPHILEAE
no	Argiopinae / CAEROSTREAE
yes	Argiopinae / GNOLEAE
no	Argiopinae / TESTUDINARIEAE
yes	Argiopinae / ARANEAE
yes	Argiopinae / MANGOREAE
yes	Argiopinae / ARANEAE*
yes	Argiopinae / ARANEAE*
no	Argiopinae / MICRATHENEAE
yes	Argiopinae / MANGOREAE
no	Argiopinae / CHORIZOPEAE
no	Argiopinae / MANGOREAE
yes	Argiopinae / ARANEAE*
yes	Argiopinae / ARANEAE*
no	n.a.
yes	Argiopinae / ARANEAE*
yes	n.a.
no	Argiopinae / HYPOGNATHEAE
yes	n.a.
no	n.a.
yes	n.a.
no	Argiopinae / ARANEAE
no	Argiopinae / ARANEAE*
yes	Argiopinae / ARANEAE*
no	n.a.
no	n.a.
yes	Argiopinae / ARANEAE
no	n.a.
no	Argiopinae / DOLOPHOHEAE
no	Argiopinae / CYCLOSEAE
yes	Argiopinae / GASTERACANTHEAE**
no	n.a.
no	n.a.
yes	n.a.
yes	n.a.
yes	n.a.
no	Argiopinae / GASTERACANTHEAE**
yes	Argiopinae / GASTERACANTHEAE
yes	Argiopinae / GASTERACANTHEAE**
no	Argiopinae / MANGOREAE

no	Argiopinae / ARACHNURAE
yes	Argiopinae / CYCLOSEAE
no	n.a.
no	Argiopinae / CYRTOPHOREAE
no	Argiopinae / ARGIOPEAE
no	Argiopinae / ARGIOPEAE
yes	n.a.
yes	Argiopinae / POLTYEAE
yes	Argiopinae / ARANEAE*
no	Argiopinae / POLTYEAE***
yes	Argiopinae / CYRTARACHNEAE
no	Argiopinae / CYRTARACHNEAE
yes	Argiopinae / CYRTARACHNEAE
no	Argiopinae / CYRTARACHNEAE
no	Argiopinae / CYRTARACHNEAE
no	Argiopinae / CELAENIEAE
yes	Argiopinae / EXECHOCENTREAE
no	Argiopinae / GLYPTOCRANIEAE§
no	Argiopinae / ARANEAE
no	Argiopinae / MANGOREAE
no	Argiopinae / POLTYEAE
no	Argiopinae / ARANEAE*
no	Argiopinae / MANGOREAE
no	n.a.
yes	n.a.
yes	Argiopinae / ARANEAE*
no	Argiopinae / ARANEAE
no	n.a.
no	n.a.
no	n.a.
no	n.a.
yes	n.a.
yes	n.a.

This paper

Zygiellinae

Zygiellinae

Zygiellinae

n.a.

Nephilinae

Nephilinae

Nephilinae

Nephilinae

Caerostrinae

Caerostrinae

Caerostrinae

"Micrathenines"

"Micrathenines"

"Micrathenines"

"Micrathenines"

"Micrathenines"

n.a.

n.a.

n.a.

"Eriophorines"

"Eriophorines"

"Eriophorines"

"Eriophorines"

"Eriophorines"

n.a.

"Backobourkiines"

"Backobourkiines"

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"Backobourkiines"

"Backobourkiines"

"Backobourkiines"

"Backobourkiines"

"Backobourkiines"

"Backobourkiines"

"Backobourkiines"

n.a.

n.a.

"Gasteracanthines"

"Gasteracanthines"

"Gasteracanthines"

"Gasteracanthines"

"Gasteracanthines"

"Gasteracanthines"

"Gasteracanthines"

"Gasteracanthines"

"Gasteracanthines"

n.a.

“Argiopines”

“Argiopines”

“Argiopines”

“Argiopines”

“Argiopines”

“Argiopines”

“Argiopines”

n.a.

n.a.

n.a.

“Cyrтарachines”

“Cyrтарachines”

“Cyrтарachines”

“Cyrтарachines”

“Cyrтарachines”

“Mastophorines”

“Mastophorines”

“Mastophorines”

n.a.

n.a.

n.a.

“Nuclenines”

“Nuclenines”

“Nuclenines”

“Nuclenines”

n.a.

n.a.

“Zealaraneines”

“Zealaraneines”

“Zealaraneines”

“Zealaraneines”

“Zealaraneines”

“Zealaraneines”

Table S2. Taxon sampling, voucher information and GenB

FAMILY	SPECIES
Amaurobidae	<i>Callobius</i> sp.
Araneidae	<i>Acacesia hamata</i>
Araneidae	<i>Acanthepeira stellata</i>
Araneidae	<i>Acroaspis</i> sp. 169
Araneidae	<i>Acroaspis olorina</i> 182
Araneidae	<i>Acrosomoides acrosomoides</i> 218
Araneidae	<i>Aculepeira packardi</i> 106
Araneidae	<i>Acusilas</i> sp. 25
Araneidae	<i>Acusilas coccineus</i>
Araneidae	<i>Agalenatea redii</i> 239
Araneidae	<i>Alpaida delicata</i> 110
Araneidae	<i>Anepsion</i> sp 248
Araneidae	<i>Anepsion</i> sp. 255
Araneidae	<i>Arachnura higginsii</i> 177
Araneidae	<i>Araneus albotriangulus</i> NGEN08_193
Araneidae	<i>Araneus bicentenarius</i>
Araneidae	<i>Araneus cavaticus</i>
Araneidae	<i>Araneus diadematus</i>
Araneidae	<i>Araneus dimidiatus</i> NGEN03_198
Araneidae	<i>Araneus eburneiventris</i> NGEN04_189
Araneidae	<i>Araneus gemmoides</i>
Araneidae	<i>Araneus marmoreus</i> 269
Araneidae	<i>Araneus mitificus</i> NGEN10_203
Araneidae	<i>Araneus mulierarius</i> NGEN03_186
Araneidae	<i>Araneus necopinus</i> NGEN09_195
Araneidae	<i>Araneus praesignis</i> NGEN10_204
Araneidae	<i>Araneus recherchensis</i> NGEN02_183
Araneidae	<i>Araneus rotundulus</i> NGEN07_192
Araneidae	<i>Araneus senicaudatus</i> NGEN05_190
Araneidae	<i>Araneus talipedatus</i> NGEN06_19
Araneidae	<i>Araniella cucurbitina</i>
Araneidae	<i>Aranoethra cambridgei</i> 180
Araneidae	<i>Argiope argentata</i>
Araneidae	<i>Argiope aurantia</i>
Araneidae	<i>Argiope trifasciata</i>
Araneidae	<i>Augusta glyphica</i> 219
Araneidae	<i>Austracantha minax</i>
Araneidae	<i>Backobourkia heroine</i> 185
Araneidae	<i>Caerostris</i> sp. 226
Araneidae	<i>Caerostris</i> sp. 63
Araneidae	<i>Carepalxis</i> sp. 250
Araneidae	<i>Celaenia calotoides</i>
Araneidae	<i>Cercidia prominens</i> 258
Araneidae	<i>Chorizopes nipponicus</i>
Araneidae	<i>Clitaetra irenae</i> 247

Araneidae *Colaranea viriditas* 212
Araneidae *Cryptaranea subcompta* 211
Araneidae *Cyclosa caroli*
Araneidae *Cyclosa turbinata*
Araneidae *Cyclosa walckenaeri*
Araneidae *Cyrtarachne bufo*
Araneidae *Cyrtarachne inaequalis*
Araneidae *Cyrtarachne nagasakiensis*
Araneidae *Cyrtarachne yunoharuensis*
Araneidae *Cyrtophora cylindroides* 150
Araneidae *Cyrtophora moluccensis*
Araneidae *Deliochus* sp. 160
Araneidae *Dolophones* sp. 46
Araneidae *Eriophora ravilla*
Araneidae *Eriophora* sp. 64
Araneidae *Eriophora transmarina* NGEN01_165
Araneidae *Eriovixia laglaizei* 196
Araneidae *Eriovixia* sp. 66
Araneidae *Eustala* sp. 117
Araneidae *Exechocentrus lancearius*
Araneidae *Gasteracantha cancriformis*
Araneidae *Gea heptagon*
Araneidae *Gibbaranea gibbosa*
Araneidae *Gnolus cordiformis* 262
Araneidae *Herennia multipuncta* 268
Araneidae *Hingstepeira foliscens* 254
Araneidae *Hypognatha* 224
Araneidae *Hypsosinga heri* 237
Araneidae *Isoxya mahafalensis* 11
Araneidae *Kaira alba*
Araneidae *Larinia bonneti* 233
Araneidae *Larinia jeskovi*
Araneidae *Lariniaria argiopiformis*
Araneidae *Larinioides cornutus* 271
Araneidae *Macracantha arcuata*
Araneidae *Madacantha nossibeana* 264
Araneidae *Mangora gibberosa* 115
Araneidae *Mastophora apalachicola*
Araneidae *Mastophora archeri* 75
Araneidae *Mastophora bisaccata* 100
Araneidae *Mastophora bisaccata* 57
Araneidae *Mastophora cornigera*
Araneidae *Mastophora hutchinsoni*
Araneidae *Mastophora phrynosoma*
Araneidae *Mastophora stowei* 181
Araneidae *Mecynogea lemniscata*
Araneidae *Metazygia wittfeldae*
Araneidae *Metepeira* 21

Araneidae *Micrathena gracilis*
Araneidae *Micrathena militaris*
Araneidae *Micrathena sagittata*
Araneidae *Neoscona crucifera* 274
Araneidae *Neoscona domiciliorum*
Araneidae *Nephila clavipes*
Araneidae *Nephila inaurata*
Araneidae *Nephila senegalensis*
Araneidae *Nephilengys malabarensis*
Araneidae *Novakiella trituberculosa* 209
Araneidae *Nuctenea umbratica*
Araneidae *Ocrepeira ectypa*
Araneidae *Paralarinia* 199
Araneidae *Paraplectana tsushimensis* 118
Araneidae *Paraplectanoides crassipes* 208
Araneidae *Parawixia dehaani* 216
Araneidae *Parawixia kochi* 112
Araneidae *Parmatergus* 116
Araneidae *Pasilobus* 122
Araneidae *Perilla teres*
Araneidae *Phonognatha graeffei*
Araneidae *Plebs bradleyi* 158
Araneidae *Plebs cyphoxis* 241
Araneidae *Poecilopachys* sp 201
Araneidae *Poecilopachys* sp 202
Araneidae *Poecilopachys* sp 34
Araneidae *Poltys illepidus*
Araneidae *Poltys laciniosus*
Araneidae *Pycnacantha fuscosa* 256
Araneidae *Scoloderus cordatus*
Araneidae *Singa nitidula* 240
Araneidae *Spilasma duodecimguttata* 107
Araneidae *Telaprocera joanae* 205
Araneidae *Telaprocera maudae* 170
Araneidae *Testudinaria* 109
Araneidae *Thelacantha brevispina*
Araneidae *Verrucosa arenata* 272
Araneidae *Wagneriana tauricornis*
Araneidae *Zealaranea crassa* 213
Araneidae *Zygiella atrica*
Araneidae *Zygiella xnotata* 252
Arkyidae *Archemorus* 155
Arkyidae *Archemorus* 253
Arkyidae *Arkys_cornutus*
Arkyidae *Demadiana cerula* 245
Deinopidae *Deinopis* 37
Deinopidae *Deinopis spinosa*
Dictynidae *Dictyna* sp.

Dictynidae	<i>Mexitlia trivittata</i>
Linyphiidae	<i>Erigone dentosa</i>
Linyphiidae	<i>Nerienne sp</i>
Mimetidae	<i>Mimetus sp 12</i>
Pimoidae	<i>Pimoida sp 121</i>
Synotaxidae	<i>Synotaxus sp 225</i>
Tetragnathidae	<i>Leucauge venusta</i>
Tetragnathidae	<i>Meta ovalis 178</i>
Tetragnathidae	<i>Metellina segmentata</i>
Tetragnathidae	<i>Tetragnatha versicolor</i>
Theridiidae	<i>Latrodectus hesperus</i>
Theridiidae	<i>Phoroncidia americana</i>
Theridiidae	<i>Spintharus flavidus</i>
Uloboridae	<i>Hyptiotes cavatus</i>
Uloboridae	<i>Hyptiotes gertschi</i>
Uloboridae	<i>Uloborus diversus</i>
Uloboridae	<i>Waitkera waitakerensis</i>

Bank accession numbers

LOCALITY	Voucher code
USA: California, Big Bear, 14.ix.2003	3
USA: Florida, Gainesville, 18-19.viii.2003	5
USA: FL, Gainesville 18-19.viii.2003	
Australia: NSW, Blue Mts., Megalong Valley, 14.	169
Australia: Western Australia, Boya, corner Appr	182/T81700
Madagascar: Andasibe, 16-18.i.2003	CASENT9005569
USA: CO, Montezuma Co, 29.vi.1909	106/DMNS13543
Thailand: Satun Prov., Thale Ban National Park,	ARANS0000098
Thailand: Satun Prov., Thale Ban National Park,	43
Denmark: Zealand, Melby Overdrev 6.5 km NxN	239/ARANS236/ZMUC00012543
French Guinea: Commune Regina. Les Nouragu	ARANS0000174
Indonesia, Sulawesi, N1.48347 E125.12720, 13-	248
Australia: Queensland: Proserpine, nr. Kelsey su	255/ARANS251/S86610
Australia: WA, Two Road, Walpole-Nornalup Na	177
Australia: Queensland, Buhot Creek Reserve, Bu	193/T84352
Gatesy, J., C. Hayashi, D. Motriuk, J. Woods, anc	90
USA: Tennessee, 3.i.2003	19
Gatesy, J., C. Hayashi, D. Motriuk, J. Woods, anc	n88
Australia: Queensland, Buhot Creek Reserve, Bu	198/T84351
Australia: Western Australia, Lake Lefroy, near s	189/T70191
Gatesy, J., C. Hayashi, D. Motriuk, J. Woods, anc	n89
29.viii.2008, MP241	269
Singapore: Chestnut Avenue, N 01°17', E 103°5	Raffles Museum, Singapore #203
Australia: Western Australia, South Meret Islan	186/T81168
Australia: South Australia, Woodcutters Beach C	195/T81460
Australia: Queensland, Buhot Creek Reserve, Bu	204/T84354
Australia: Western Australia, Stirling Range Nati	183/T81440
Australia: Queensland, Manly West, Salacia St, s	192/T84333
Australia: Western Australia, Signal Hill Bushlan	190/T81695
Australia: Western Australia, Signal Hill Bushlan	191
Portugal: Northern Region, Parque Nacional da	PT
Ghana: Eastern Region Atewa, Range, Asiakawa	180
Gatesy, J., C. Hayashi, D. Motriuk, J. Woods, anc	ID 129
Gatesy, J., C. Hayashi, D. Motriuk, J. Woods, anc	n86
Gatesy, J., C. Hayashi, D. Motriuk, J. Woods, anc	n87
Madagascar: P.N.Masoala, 01.iii.2003	219/CASENT9016434 /DSD0016
Australia: Australian Capital Territory, Canberra	ARANS0000125
Australia: Western Australia, Kundip, Ravensth	185/T69839
Madagascar, 2008	MTCA05C/226
Surat Thani Prov., Sri Phangna NP, N 8°59'44.2'	ZMUC00008517/63
Australia: NE Queensland, Atherton Plateau, Ro	250/ARANS265
Australia: WA, N of Yanchep Natl Park, 24.v.200	55/WAMU T62222
Denmark: Zealand, Heather Hill between Vejby	258/ARANS258/ZMUC00012535
from Genbank	
12.iv.2006, M. Kuntner leg.	TECL2/247

New Zealand: Kennedys Bush, S 43°37'48", E 17	212/T88538
New Zealand: Kennedys Bush, S43°37'48", E172	T88533
USA: Florida, Gainesville, 18-19.viii.2003	n92
USA: California, Encinitas, 13.iv.2007	CA
USA: California, Big Sur, 27.vi.2003	n94
Japan: Chiba, 27.ix.2006	29
Japan: Ibaraki, 07.viii.2006	95
Japan: Ibaraki Prefecture, 6.viii.2002	me spider, 2nd attempt used cephalothorax, JP
Japan, 13.viii.2008, from Akio Tanikawa	72
Australia: NE QLD. Daintree NP. Cape Tribulatio	150
Australia, Queensland	6
Australia: Queensland, Brisbane, Manley West,	160
Australia: Queensland, Lamington, NP	46/
USA: Florida, Gainesville, 18-19.viii.2003	8
Australia: Western Australia: William Bay Natio	64/T81705
Australia: NE Queensland, Tamborine National I	165
Singapore: Chestnut Avenue, N 01°17', E 103°51	196/Raffles Museum, Singapore VWF 30224
Thailand, Satun Province, 16x.2007	66
?? (extracted at Ohio State)	117
Madagascar: Parc National d'Arkarafantiska, 26	70/CASENT9002635
USA: FL, Gainesville, 8.vii.2001	97/
USA: TN, Loudon, 15.viii.2003	99
Denmark: Rødbyhavn, 07.x.2007, N 54°39.369',	261/ZMUC00012493
Chile: Park National Puyehue, forest behind Cak	CASENT9016671/262
Laos: Vientiane Prov., Phou Khao Khouay, 18°20	ARANS242/268
French Guyana: Commune Regina, Les Nouragu	254
Costa Rica: Heredia province, La Selva, 1-5.vii.20	224
Hungary: Miklapuszta, N 46.71667, E 19.13333,	ARANS231/ZMUC00012533
Madagascar, Toliara, 16.i.2006	CASENT9024089 /HW012
USA: Florida, Gainesville, 8.vii.1997	36
Hungary: Miklapuszta, N 46.71667, E 19.13333,	233/ARANS232
Hungary: Miklapuszta, N 46.71667, E 19.13333,	ARANS232/ZMUC00012534
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USA: Ohio, Summit County. 12.vi.2007	271
Thailand: Nakhon Si Thammarat Prv., Khao Luar	ZMUC00008513
Antananarivi: R.S. d'Ambohitantely, forest d'Am	264/ARANS246/CASENT9016445
USA: Ohio, Summit Country, Bath Nature Preser	115
USA: Florida, Hamilton County, near Big Shoals :	49
USA: Florida, ?, ?.xi.2004	75
USA: 02.ii.2001	100
??	57
USA: California, San Diego County, Mission Trail	101
USA: Kentucky, 25.ix.2006	31
USA: Florida, Gainesville, 17-18.viii.2003	41
USA: Kentucky, spindletop5, 12.x.2004, Ken Hay	181
USA: Florida, Gainesville, 18-19.viii.2003	24
USA: Florida, Alachua Co., 31.v.2004	50
USA: 13.iv.2007	21

USA: Ohio	102
Dominican Republic: W of Barahona Haitian Vill	DR
USA: Florida, Gainesville, 7.vii.1997	7
MP119	274
USA: Florida, Gainesville, 18-19.viii.2003	11
USA: Florida, Gainesville	n83
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Gatesy, J., C. Hayashi, D. Motriuk, J. Woods, and	n84
Thailand, Surat Thani Province, 21.x.2007, Schai	ZMUC8514/60
Australia: Western Australia, Two Peoples Bay N	209/T81707
Denmark, Zealand, Dragerup Skov near Tjebber	62/ZMUC00008515
USA: OK, Norman, E 66°01'44" 38°98'27", Sumr	53
Australia: South Australia, Woodcutters Beach (199/T81473
Japan: Kagoshima, Takrajima Island, 9.vii.2007 (118
Australia: Western Australia, Bremer Bay, Yate,	T81706/208
Singapore, Choa Chu Kang Park, Singapore, N O:	216/VWF 30223
French Guinea: Commune Regina. Les Nouragu	112
Madagascar: d'ananalava, 1-5.ii.2003	116/CASENT9005856 /BLF7390
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Australia: Sydney, ?.iv.2003	38
Australia: Tasmania, Derwent Bridge, nr Lake St	158
Australia: Western Australia, Boya, corner Appr	241/T81703
Australia: Victoria, Warrandyte State Park, Four	201/T84327
Australia: Queensland, Drewvale, Illaweenaa St, !	202/T84371
New Zealand: North Isle, Cambridge Waikoto, 5	34
Australia, Cairns, Queensland Trinity Park, 16-18	KS86259
Australia: South Australia, Muryahoo C. P., 23-3	52
Madagascar: Fianarantsoa: Foret d'Analalava, 2	256/ARANS248/CASENT9005867
USA: Florida, Gainesville, 18-19.viii.2003	26
Hungary, Kolon-lake, N 46.80423°, E 19.33963°	240/ARANS229
French Guinea: Commune Regina. Les Nouragu	107
Australia: Queensland, Lamington National Park	205/T85256
Australia: Queensland, Lamington National Park	170/T85257
French Guinea: Commune Regina. Les Nouragu	ARANS0000175
Vietnam: Nha Trang, The Garden of Bao Dai, 12	42/
MP268, 3.x.2008	272
USA: Florida, Gainesville, 18-19.viii.2003	14
New Zealand: Kennedys Bush, S 43°37'48", E 17	213/T88535
Denmark:Zealand, NWZ, Roesnaes, Vindekilde s	44
Denmark, Bornholm, Arnager, E 14°46'46.9", N	ARANS189/252
Australia: NE Queensland, Atherton Plateau, Ro	155
Australia: NE Queensland: Atherton Plateau, Ro	253
Australia: NE Queensland, Atherton Tablelands,	45
Australia: Western Australia, Wungong Dam, S :	245/T91865
Australia: Marie Herberstein & Matthew Bruce	37
USA: FL, Gainesville	15
USA: California, Lake Arrowhead, 14.vi.2003	35

USA, Arizona, Cochise CO, Brent Opell	18
USA: California, Chico, 23.vi.2003	54
USA: California, Lake Arrowhead, 14.vi.2003	78
USA: Florida, Gainesville, 18-19.viii.2003	12
USA: California, Camp Dunlap, 1-2.viii.2006	CASENT9023892
Costa Rica: Heredia province, La Selva, 1-5.vii.2003	CR
USA: Florida, Gainesville 18-19.viii.2003	16
USA: Ohio, Yellow Springs, 10.xi.2007	178
Denmark, Zealand, 19.ix.2008	61
USA: AZ, Tucson	n81
USA: California, Riverside, 29.i.2003	CAR
USA: Florida, Alachua Co., spring 2004	51
USA: FL, Gainesville, 18-19.viii.2003	56
USA: Florida, Gainesville, 18-19.viii.2003	80
USA: California	27
USA: CA, Riverside, 24.iii.2003	79
New Zealand: Northland, Whangarei Coronation	14

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Taxa	Stem/Crown	Log normal prior		Hyperprior on the mean (λ)		
		Min. age (offset)	mean (in real space)	Lower	Upper	
Deinopidae	S	125	30	0	60	
Linyphiidae	S	125	30	0	60	
Nephila	S	16	20	0	40	
Araneidae	S	115	30	0	60	

Table S3. BEAST setting used for the molecular dating analyses. S – stem calibration.

1) of the log normal prior distribution with uniform distribution

Offset

0

0

0

0

Sort	Taxa	S&AI_New_Web_states	stabilimentum
1	Acacesia_hamata	0	0
2	Acanthepeira_stellata	0	0
3	Acroaspis_169	0	0
4	Acroaspis_olorina_182	0	0
5	Aculepeira_packardi_106	0	0
6	Acusilas_251	0	0
7	Acusilas_coccineus	0	0
8	Agalenatea_redii_239	0	0
9	Alpaida_delicata_110	0	0
10	Anepsion_sp_248	0	0
11	Anepsion_sp_255	0	0
12	Araneus_bicentenarius	0	0
13	Plebs_bradleyi_158	0	0
14	Plebs_cyphoxis_241	0	1
15	Araneus_cavaticus	0	0
16	Araneus_diadematus	0	0
17	Araneus_gemmoides	0	0
18	Araneus_marmoreus_269	0	0
19	Araneus_mitificus_NGEN10_203	0	0
20	Araneus_praesignis_NGEN10_204	?	?
21	Araniella_cucurbitina	0	0
22	Augusta_glyphica_219	0	0
23	Backobourkia_heroine_185	0	0
24	Caerostris_226	0	0
25	Caerostris_63	0	0
26	Carepalxis_sp_250	0	0
27	Cercidia_prominens_258	0	0
28	Chorizopes_nipponicus	0	0
29	Clitaetra_irenae_247	0	0
30	Cryptaranea_subcompta_211	0	0
31	Deliochus_160	0	0
32	Dolophones_46	0	0
33	Eriophora_ravilla	0	0
34	Eriophora_sp_NGEN01_64	0	0
35	Eriophora_transmarina_NGEN01_165	0	0
36	Eustala_117	0	0
37	Gibbaranea_261	0	0
38	Herennia_multipuncta_268	0	0
39	Hingstepeira_foliscens_254	0	0
40	Hypognatha_224	0	0
41	Hypsosinga_heri_237	0	0
42	Larinia_bonneti_233	0	0
43	Larinia_jeskovi	0	0
44	Larinioides_cornutus_271	0	0
45	Macracantha_arcuata	0	0

46	Mangora_gibberosa_115	0	0
47	Metazygia_wittfeldae	0	0
48	Metepeira_21	0	0
49	Nuctenea_umbratica	0	0
50	Ocrepeira_ectypa	0	0
51	Parawixia_dehaani_216	0	0
52	Parawixia_kochi_112	0	0
53	Phonognatha_graeffei	0	0
54	Polys_illepidus	0	0
55	Polys_laciniosus	0	0
56	Scoloderus_cordatus	0	0
57	Telaprocera_joanae_205	0	0
58	Telaprocera_maudae_170	0	0
59	Verrucosa_arenata_272	0	0
60	Wagneriana_tauricornis	0	0
61	Zealaranea_crassa_213	0	0
62	Zygiella_atrica	0	0
63	Zygiella_xnotata_252	0	0
64	Acrosomoides_acrosomoides_218	0	1
65	Arachnura_higginsii_177	0	1
66	Argiope_argentata	0	1
67	Argiope_aurantia	0	1
68	Argiope_trifasciata	0	1
69	Austracantha_minax	0	1
70	Colaranea_viriditas_212	0	1
71	Cyclosa_caroli	0	1
72	Cyclosa_conica	0	1
73	Cyclosa_walckenaeri	0	1
74	Gasteracantha_cancriformis	0	1
75	Gea_heptagon	0	1
76	Isoxya_mahafalensis_111	0	1
77	Micrathena_gracilis	0	1
78	Micrathena_militaris	0	1
79	Micrathena_sagittata	0	1
80	Neoscona_crucifera_274	0	1
81	Neoscona_domiciliorum	0	1
82	Nephila_clavipes	0	1
83	Nephila_inaurata	0	1
84	Nephila_senegalensis	0	1
85	Nephilengys_malabarensis	0	1
86	Singa_nitidula_240	0	1
87	Thelacantha_brevispina	0	1
88	Uloborus_diversus	0	1
89	Waitkera_waitakerensis	0	1
90	Araneus_talipedatus_NGEN06_191	0	0
91	Eriovixia_laglaizei_196	0	

92	Eriovixia_sp_66	0	
93	Lariniaria_argiopiformis	0	
94	Parmatergus_116	0	
95	Perilla_teres	0	
96	Pycnacantha_fuscosa_256	10	
97	Leucauge_venusta	1	0
98	Mecynogea_lemniscata	1	0
99	Spilasma_duodecimguttata_107	1	0
100	Tetragnatha_versicolor	1	0
101	Cyrtophora_cylindroides_150	1	1
102	Cyrtophora_moluccensis	1	1
103	Exechocentrus_lancearius	2	0
104	Mastophora_apalachicola	2	0
105	Mastophora_archeri_75	2	0
106	Mastophora_bisaccata_100	2	0
107	Mastophora_bisaccata_57	2	0
108	Mastophora_cornigera	2	0
109	Mastophora_hutchinsoni	2	0
110	Mastophora_phrynosoma	2	0
111	Mastophora_stowei_181	2	0
112	Archemorus_155	3	?
113	Archemorus_253	3	?
114	Arkys_cornutus	3	?
115	Celaenia_calotoides	10	?
116	Gnolus_cordiformis_262	3	?
117	Latrodectus_hesperus	7	0
118	Neriene	6	0
119	Pimoa_121	6	0
120	Poecilopachys_australasia_201	8	0
121	Poecilopachys_australasia_202	8	0
122	Poecilopachys_australasia_34	8	0
123	Cyrtarachne_bufo	8	0
124	Cyrtarachne_inaequalis	8	0
125	Cyrtarachne_nagasakiensis	8	0
126	Cyrtarachne_yunoharuensis	8	0
127	Paraplectana_tsushimensis_118	8	0
128	Pasilobus_122	8	0
129	Araneus_albotriangulus_NGEN08_193	0	0
130	Araneus_eburneiventris_NGEN04_189	0	0
131	Araneus_mulierarius_NGEN03_186	?	
132	Araneus_dimidiatus_NGEN03_198	0	0
133	Araneus_necopinus_NGEN09_195	?	
134	Araneus_recherchensis_NGEN02_183	0	0
135	Araneus_rotundulus_NGEN07_192	0	0
136	Araneus_senicaudatus_NGEN05_190	0	0
137	Aranoethra_cambridgi_180	?	

138 Callobius	4	0
139 Deinopis_37	0	0
140 Deinopis_spinosa	0	0
141 Demadiana_cerula_245	3	
142 Dictyna	6	0
143 Erigone_dentosa	6	0
144 Hyptiotes_cavatus	0	0
145 Hyptiotes_gertschi	0	0
146 Kaira_alba	10	0
147 Madacantha_nossibeana_264	0	0
148 Meta_ovalis_178	0	0
149 Metellina_segmentata	0	0
150 Mexitlia_trivittata	6	0
151 Mimetus_12	3	?
152 Novakiella_trituberculosa_209	1	0
153 Paralarinia_199	?	
154 Paraplectanoides_crassipes_208	9	0
155 Phoroncidia_americana	7	0
156 Spintharus_flavidus	7	0
157 Synotaxus_225	5	0
158 Testudinaria_109	0	?

Web forms - Charcter states

0. Vertical orb
1. Horizontal orb
2. Bolas
3. Foraging web lost
4. Irregular ground sheet
5. Stereotyped aerial sheet
6. Irregular aerial sheet
7. Cobweb
8. Spanning-thread
9. Paraplectanoides
10. Trapeze

Stabilimentum

0. No
1. Yes