10.1071/IS24058
Invertebrate Systematics

Supplementary Material

Systematics of cybaeid spiders endemic to the Japanese Archipelago, and their historical biogeographic implications (Araneae: Cybaeidae)

Yusuke Sugawara[A], *Yoh Ihara*[A], *Naoki Koike*[A], *Hong-Yul Seo*[B], *Larisa A. Prozorova*[C], *Zhi-Sheng Zhang*[D] and *Takafumi Nakano*[A,*]

[A]Department of Zoology, Graduate School of Science, Kyoto University, Sakyo-ku, Kyoto, 606-8502, Japan

[B]National Institute of Biological Resources, Incheon, 404-708, South Korea

[C]Federal Scientific Center of the East Asia Terrestrial Biodiversity, Far Eastern Branch of the Russian Academy of Sciences, Vladivostok, Russian Federation

[D]Key Laboratory of Eco-environments in the Three Gorges Reservoir Region (Ministry of Education), School of Life Sciences, Southwest University, Chongqing, 400715, PR China

*Correspondence to: Email: nakano@zoo.zool.kyoto-u.ac.jp

Table S1. Specimens with voucher numbers used for morphological examination and taxonomic descriptions in this study.

Species	Voucher	Sex	Country	Locality
Sincybaeus				
S. monticola (Kobayashi, 2006), comb. nov.	KUZ Z4258	Female	Japan	Oodaira Pass, Iida, Nagano (35.5657°N, 137.6935°E) (near the type locality)
	KUZ Z5188	Male	Japan	Mt Yunomori, Hachimantai, Iwate
S. rarispinosus (Yaginuma, 1970), comb. nov.	KUZ Z2242	Female	Japan	Mt Mitake, Tsushima Island, Nagasaki (34.5853°N, 129.3656°E) (type locality)
	KUZ Z5191	Female	Japan	Mt Shiratake, Tsushima Island, Nagasaki (36.26468°N, 129.25987°E)
S. yoshiakii (Yaginuma, 1968), comb. nov.	KUZ Z4157	Male	Japan	Mt Iwawakisan, Kawachinagano, Osaka (34.3809°N, 135.5590°E) (type locality)
	KUZ Z5193	Male	Japan	Mt Iwawakisan, Kawachinagano, Osaka (34.3819°N, 135.5591°E)
	KUZ Z5194	Female	Japan	Mt Iwawakisan, Kawachinagano, Osaka (34.3819°N, 135.5591°E)
	KUZ Z5195	Female	Japan	Mt Iwawakisan, Kawachinagano, Osaka (34.38078°N, 135.55905°E)
	KUZ Z5199	Female	Japan	Mt Iwawakisan, Kawachinagano, Osaka (34.38078°N, 135.55905°E)
S. sp. KU-2024-01	KUZ Z4030	Male	Japan	Mt Enasan, Nakatsugawa, Gifu (35.4226°N, 137.5577°E)
Allocybaeina				
A. petegarina (Yaginuma, 1972), comb. nov.	KUZ Z4147	Male	Japan	Mt Pisenai, Shinhidaka, Hokkaido (42.4203°N, 142.5847°E) (type locality)
	KUZ Z5189	Male	Japan	Nukabira, Kamishihoro, Hokkaido
	KUZ Z5190	Female	Japan	Horoka, Kamishihoro, Hokkaido
	KUZ Z5192	Female	Japan	Mt Poroshiri, Hiratori, Hokkaido
	KUZ Z5196	Female	Japan	Sukushubetsu, Hiratori, Hokkaido (42.68039°N, 142.42397°E)

KUZ, Zoological Collection of Kyoto University.

Table S2. Samples with voucher or isolate numbers, collection locality and International Nucleotide Sequence Databases (INSD) accession numbers of the sequences user for molecular analyses in this study.

Taxon	Voucher or Isolate number	Country	Locality	INSD accession number				
				18S	*28S*	*ITS-1*	*H3*	*COI*
East Asian *Cybaeus*								
C. aikana Ihara, Koike & Nakano, 2021	KUZ Z2137	Japan	Mt Yuwandake, Amamioshima Island, Kagoshima	LC823594[A]	LC552248	–	LC552250	LC552249
C. aizuensis Kobayashi, 2006	KUZ Z4178	Japan	Mt Aizukomagatake, Fukushima	LC823572[A]	LC823573[A]	LC823576[A]	LC823575[A]	LC823574[A]
C. amamiensis Ihara, Koike & Nakano, 2021	KUZ Z2120	Japan	Mt Yuwandake, Amamioshima Island, Kagoshima	LC823593[A]	LC552236	LC552239	LC552238	LC552237
C. anaiwaensis (Komatsu, 1968)	KUZ Z5211	Japan	Anaiwa-no-ana Cave, Kochi	LC823662[A]	LC823663[A]	LC823666[A]	LC823665[A]	LC823664[A]
C. aokii Yaginuma, 1972	KUZ Z4148	Japan	Mt Poroshiri, Hokkaido	–	LC823368[A]	LC823371[A]	LC823370[A]	LC823369[A]
C. aquilonalis Yaginuma, 1958	KUZ Z4149	Japan	Hiyamizu Pass, Aomori	LC823401[A]	LC823402[A]	LC823405[A]	LC823404[A]	LC823403[A]
C. asahi Kobayashi, 2006	KUZ Z4150	Japan	Mt Nakasaki, Yamagata	LC823416[A]	LC823417[A]	LC823420[A]	LC823419[A]	LC823418[A]
C. ashikitaensis (Komatsu, 1968)	KUZ Z2213	Japan	Itsuki Village, Kumamoto	LC823466[A]	LC552192	LC552195	LC 52194	LC552193
C. bitchuensis Ihara & Nojima, 2005	KUZ Z4154	Japan	Outside of Bitchu Limestone Cave, Okayama	–	LC823479[A]	LC823482[A]	LC823481[A]	LC823480[A]
C. biwaensis Kobayashi, 2006	KUZ Z4176	Japan	Otaki, Gifu	–	LC823533[A]	–	LC823534[A]	–
C. communis Yaginuma, 1972	KUZ Z3970	Japan	Yashiki-ana Cave, Shizuoka	LC823539[A]	LC823540[A]	LC651116	LC823541[A]	LC651111
C. daimonji Matsuda, Ihara & Nakano, 2020	KUZ Z2755	Japan	Mt Daimonji, Kyoto	LC823367[A]	LC529207	LC529208	LC529206	LC529209
C. daisen Ihara & Nojima, 2005	KUZ Z4151	Japan	Mt Daisen, Tottori	LC823474[A]	LC823475[A]	LC823478[A]	LC823477[A]	LC823476[A]
C. echigo Kobayashi, 2006	KUZ Z4260	Japan	Mt Kohata, Fukushima	LC823600[A]	LC823601[A]	–	LC823602[A]	–
C. enshu Kobayashi, 2006	KUZ Z4159	Japan	Mt Myojin, Aichi	LC823535[A]	LC823536[A]	LC823538[A]	LC823537[A]	–
C. fujisanus Yaginuma, 1972	KUZ Z2412	Japan	Kaneyama-fûketsu Cave, Yamanashi	LC823581[A]	LC823582[A]	LC622071	LC823583[A]	LC622070
C. fuujinensis (Komatsu, 1968)	KUZ Z2199	Japan	Fuujin-do Cave, Kumamoto	LC823461[A]	LC552187	LC552190	LC552189	LC552188
C. gassan Kobayashi, 2006	KUZ Z4172	Japan	Tashiro, Yamagata	LC823411[A]	LC823412[A]	LC823415[A]	LC823414[A]	LC823413[A]
C. geumensis Seo, 2016	KUZ Z2224	Japan	Mt Mitake, Tsushima Island, Nagasaki	LC823450[A]	LC823451[A]	LC823454[A]	LC823453[A]	LC823452[A]
	KUZ Z4267	Korea	Jirisan, North Gyeongsang	LC823619[A]	LC823620[A]	LC823621[A]	–	–
C. gonokawa Ihara, 1993	KUZ Z4160	Japan	Yachiyodaki Fall, Hiroshima	LC823488[A]	LC823489[A]	–	LC823491[A]	LC823490[A]
C. gotoensis (Yamaguchi & Yaginuma, 1971)	KUZ Z2251	Japan	Iana Cave, Fukuejima Island, Nagasaki	LC823473[A]	LC552201	LC552204	LC552203	LC552202
C. hatsushibai Ihara, 2005	KUZ Z4161	Japan	Mt Daifugen, Nara	LC823584[A]	LC823585[A]	LC823588[A]	LC823587[A]	LC823586[A]
C. hibaensis Ihara, 1994	KUZ Z2301	Japan	Mt Tateeboshi, Hiroshima	LC823501[A]	LC823502[A]	–	LC823503[A]	–
C. higoensis Irie & Ono, 2000	KUZ Z2174	Japan	Takasawa-do Cave, Kumamoto	LC823455[A]	LC823456[A]	LC823459[A]	LC823458[A]	LC823457[A]
C. hikidai Ihara, Koike & Nakano, 2021	KUZ Z2106	Japan	Mt Nagodake, Okinawajima Island, Okinawa	LC823596[A]	LC552264	LC552267	LC552266	LC552265
C. hiroshimaensis Ihara, 1993	KUZ Z4162	Japan	Mt Gokufakuji, Hiroshima	LC823497[A]	LC823498[A]	LC823500[A]	LC823499[A]	–
C. iharai Sugawara, Koike & Nakano, 2022	KUZ Z4023	Japan	Kirigamine, Nagano	LC823378[A]	LC668565	LC668570	LC668568	LC668566
C. ilweolensis Seo, 2016	KUZ Z4268	Korea	Chiaksan, Gangwon	LC823628[A]	LC823629[A]	LC823631[A]	LC823630[A]	–
C. inagakii Ono, 2008	KUZ Z4177	Japan	Kurotengu-no-ana Cave, Mie	LC823528[A]	LC823529[A]	LC823532[A]	LC823531[A]	LC823530[A]
C. ishikawai (Komatsu, 1940)	KUZ Z2715	Japan	Near Ryugado Cave, Kochi	LC823643[A]	LC552276	LC552278	LC552277	LC823644[A]
C. itsukiensis Irie, 1998	KUZ Z2184	Japan	Tsuzurasedo Cave, Kumamoto	LC823460[A]	LC552182	LC552185	LC552184	LC552183
C. jaanaensis Komatsu, 1968	KUZ Z4152	Japan	Jaana Cave, Gifu	LC823652[A]	LC823653[A]	LC823656[A]	LC823655[A]	LC823654[A]
C. jinsekiensis Ihara, 2006	KUZ Z4155	Japan	Tanto, Hiroshima	LC823483[A]	LC823484[A]	LC823487[A]	LC823486[A]	LC823485[A]
C. kirigaminensis Komatsu, 1963	KUZ Z3985	Japan	Yashimagahara Marsh, Nagano	LC823379[A]	LC823380[A]	LC651115	LC823381[A]	LC651110
C. kiuchii Komatsu, 1965	KUZ Z4174	Japan	Near Mt Tsurugi, Tokushima	LC823431[A]	LC823432[A]	LC823435[A]	LC823434[A]	LC823433[A]
C. kodama Ihara, Koike & Nakano, 2021	KUZ Z2141	Japan	Yakushima Island, Kagoshima	LC823591[A]	LC552215	LC552218	LC552217	LC552216
C. koikei Sugawara, Ihara & Nakano, 2021	KUZ Z3744	Japan	Hanase, Kyoto	LC823673[A]	LC601900	LC601903	LC601902	LC601901
C. kokuraensis Ihara, 2007	KUZ Z4163	Japan	Sugaonotaki Fall, Fukuoka	–	LC823442[A]	–	LC823444[A]	LC823443[A]

Taxon	Voucher or Isolate number	Country	Locality	INSD accession number				
				18S	*28S*	*ITS-1*	*H3*	*COI*
C. kompiraensis (Komatsu, 1968)	KUZ Z2317	Japan	Kompirado Cave, Kochi	LC823441[A]	LC552179	LC552181	LC552180	LC552178
C. kumadori Ihara, Koike & Nakano, 2021	KUZ Z2143	Japan	Mt Yaguradake, Kuroshima Island, Kagoshima	LC823592[A]	LC552225	LC552228	LC552227	LC552226
C. kunisakiensis Ihara, 2003	KUZ Z2303	Japan	Mt Futagosan, Oita	LC823467[A]	LC552197	LC552200	LC552199	LC552198
C. kuramotoi Yaginuma, 1963	KUZ Z4145	Japan	Around Akiyoshido-Cave, Yamaguchi	LC823647[A]	LC823648[A]	LC823651[A]	LC823650[A]	LC823649[A]
C. magnus Yaginuma, 1958	KUZ Z4153	Japan	Mt Osore, Aomori	LC823406[A]	LC823407[A]	LC823410[A]	LC823409[A]	LC823408[A]
C. melanoparvus Kobayashi, 2006	KUZ Z3764	Japan	Sakauchihirose, Gifu	LC823589[A]	LC601893	LC601896	LC601895	LC601894
C. mellotteei (Simon, 1886)	KUZ Z4164	Japan	Shiki-no-mori Park, Kanagawa	–	LC823551[A]	LC823554[A]	LC823553[A]	LC823552[A]
C. mimasaka Ihara & Nojima, 2005	KUZ Z4165	Japan	Ashizu Valley, Tottori	LC823508[A]	LC823509[A]	LC823512[A]	LC823511[A]	LC823510[A]
C. minoensis Kobayashi, 2006	KUZ Z4166	Japan	Neo-okudani Valley, Gifu	LC823421[A]	LC823422[A]	LC823425[A]	LC823424[A]	LC823423[A]
C. miyagiensis Ihara, 2004	KUZ Z4167	Japan	Iwadeyama-ikoinomori National Park, Miyagi	LC823391[A]	LC823392[A]	LC823395[A]	LC823394[A]	LC823393[A]
C. miyosii Yaginuma, 1941	KUZ Z5212	Japan	Nametoko Valley, Ehime	LC823668[A]	LC823670[A]	LC823672[A]	LC823671[A]	LC823667[A] LC823669[A]
C. momotaro Ihara & Nojima, 2005	KUZ Z4168	Japan	Mt Okeyozan, Okayama	LC823504[A]	LC823505[A]	–	LC823507[A]	LC823506[A]
C. nagaiae Ihara, 2010	KUZ Z2346	Japan	Hotaino, Kyoto	LC823518[A]	LC823519[A]	LC823522[A]	LC823521[A]	LC823520[A]
C. nichikoensis (Komatsu, 1968)	KUZ Z2208	Japan	Nichiko-do Cave, Kumamoto	LC823462[A]	LC823463[A]	–	LC823465[A]	LC823464[A]
C. nipponicus (Uyemura, 1938)	KUZ Z3987	Japan	Mt Kariyose, Tokyo	LC823542[A]	LC823543[A]	LC651114	–	LC651108
C. nishikawai (Komatsu, 1968)	KUZ Z4146	Japan	Saruta-do Cave, Kochi	LC823657[A]	LC823658[A]	LC823661[A]	LC823660[A]	LC823659[A]
C. okumae Ihara, 2010	KUZ Z2356	Japan	Mt Hikosan, Fukuoka	LC823568[A]	LC823569[A]	LC823571[A]	LC823570[A]	–
C. okumurai Ihara, Koike & Nakano, 2021	KUZ Z2719	Japan	Tanegashima Island, Kagoshima	LC823645[A]	LC552280	LC552282	LC552281	LC823646[A]
C. sanctus (Komatsu, 1942)	KUZ Z4170	Japan	Outside of Saisho-do Cave, Nagano	LC823555[A]	LC823556[A]	LC823559[A]	LC823558[A]	LC823557[A]
C. sasakii Ihara, 2004	KUZ Z4156	Japan	Urabandai Highland, Fukushima	LC823382[A]	LC823383[A]	LC823385[A]	LC823384[A]	–
C. shingenni Komatsu, 1968	KUZ Z4169	Japan	Outside of Kosode Cave, Yamanashi	LC823547[A]	LC823548[A]	LC823550[A]	LC823549[A]	–
C. shinkaii (Komatsu, 1970)	KUZ Z3986	Japan	Mt Takao, Tokyo	LC823544[A]	LC823545[A]	–	LC823546[A]	LC651109
C. striatipes Bösenberg & Strand, 1906	KUZ Z2718	Japan	Mt Rausu, Hokkaido	LC823377[A]	LC552174	LC552177	LC552176	LC552175
C. tajimaensis Ihara & Nojima, 2005	KUZ Z4173	Japan	Around Ishigado-Cave, Hyogo	LC823513[A]	LC823514[A]	LC823517[A]	LC823516[A]	LC823515[A]
C. taraensis Irie & Ono, 2001	KUZ Z2244	Japan	Mt Tara, Nagasaki	LC823468[A]	LC823469[A]	LC823472[A]	LC823471[A]	LC823470[A]
C. tokunoshimensis Ihara, Koike & Nakano, 2021	KUZ Z2113	Japan	Mt Inokawadake, Tokunoshima Island, Kagoshima	LC823595[A]	LC552253	LC552256	LC552255	LC552254
C. tsurugi Ihara, 2003	KUZ Z4261	Japan	Near Mt Tsurugi, Tokushima	LC823436[A]	LC823437[A]	LC823440[A]	LC823439[A]	LC823438[A]
C. tsurusakii Ihara, 1993	KUZ Z4171	Japan	Mt Ooyorogi, Shimane	LC823492[A]	LC823493[A]	LC823496[A]	LC823495[A]	LC823494[A]
C. uenoi (Yaginuma, 1970)	KUZ Z2240	Japan	Mt Osakadan, Tsushima Island, Nagasaki	LC823564[A]	LC823565[A]	LC823567[A]	LC823566[A]	–
C. urabandai Ihara, 2004	KUZ Z4175	Japan	Mt Bandai, Fukushima	LC823597[A]	LC823598[A]	–	LC823599[A]	–
C. yakushimensis Ihara, Koike & Nakano, 2021	KUZ Z2138	Japan	Shirataniunsuikyo Valley, Yakushima Island, Kagoshima	LC823590[A]	LC552207	LC552209	LC552208	–
C. yoshidai Ihara, 2004	KUZ Z4158	Japan	Mt Nishiazuma, Yamagata	LC823386[A]	LC823387[A]	LC823390[A]	LC823389[A]	LC823388[A]
C. zenifukiensis (Komatsu, 1968)	KUZ Z4144	Japan	Zenifuki-do Cave, Iwate	LC823396[A]	LC823397[A]	LC823400[A]	LC823399[A]	LC823398[A]
C. cf. *confrantis* Oliger, 1994	KUZ Z4259	Russia	Vladivostok, Primorsky	–	LC823640[A]	LC823642[A]	LC823641[A]	–
C. sp. KU-2024-02	KUZ Z2214	Japan	Iki-no-shima Island, Nagasaki	LC823445[A]	LC823446[A]	LC823449[A]	LC823448[A]	LC823447[A]
C. sp. KU-2024-06	KUZ Z4266	Korea	Odaesan, Gangwon	LC823612[A]	LC823613[A]	LC823615[A]	LC823614[A]	–
C. sp. KU-2024-07	KUZ Z4269	Korea	Chiaksan, Gangwon	LC823632[A] LC823633[A]	LC823634[A]	LC823635[A]	–	–
C. sp. KU-2024-08	KUZ Z4270	Korea	Odaesan, Gangwon	LC823608[A]	LC823609[A]	LC823611[A]	LC823610[A]	–
C. sp. KU-2024-09	KUZ Z4271	Korea	Odaesan, Gangwon	LC823636[A]	LC823637[A]	LC823639[A]	LC823638[A]	–
C. sp. KU-2024-10	KUZ Z4272	Korea	Sobaeksan, North Gyeongsang	LC823624[A]	LC823625[A]	LC823627[A]	LC823626[A]	–
European *Cybaeus*								

Taxon	Voucher or Isolate number	Country	Locality	INSD accession number				
				18S	*28S*	*ITS-1*	*H3*	*COI*
C. angustiarum L. Koch, 1868[B]	ENT008–008612	Česko	Moravian-Silesian Region	–	–	–	–	FJ263790
C. tetricus (C.L. Koch, 1839)[B]	SMNK-ARA 09319	Germany	Löffingen, Baden-Württemberg	–	–	–	–	KY270020
Nearctic *Cybaeus* ('Holarctic' Clade)								
C. eutypus Chamberlin & Ivie, 1932[B]	ENT008–008607	Canada	Vancouver Island, British Columbia	–	–	–	–	FJ263791
C. giganteus Banks, 1892	ARAMH000017	USA	Great Smokey Mountains, Tennessee	KY016383	KY017005	–	KY018168	–
	ENT008–008613	USA	Buncombe County, North Carolina	–	–	–	FJ263769	FJ263788
C. morosus Simon, 1886	CMOROSUS1	USA	–	DQ628744, DQ628707	DQ628671	–	DQ628641	–
	ENT008–008608	Canada	Heakamie River, British Columbia	–	–	–	FJ263775	FJ263792
C. patritus Bishop & Crosby, 1926[B]	ENT008–008614	USA	Blount County, Tennessee	–	–	–	–	FJ263789
C. reticulatus Simon, 1886[B]	ENT008–008615	Canada	Vancouver Island, British Columbia	–	–	–	–	FJ263793
C. signifer Simon, 1886	ENT008–008616			–	–	–	FJ263772	FJ263794
C. sp. 3 SCC-2010	JSSC_013	–	–	HM576639	HM576654	–	HM576673	–
C. sp. AB615	NMB<CHE>_AB0615	USA	Oregon	–	FR694069	–	–	FN554818
C. sp. DP-2014	CAS 9030568	USA	Marble Mountains, California	–	KM225052	–	KM225205	KM225105
Nearctic *Cybaeus* ('Californian' Clade)								
C. chauliodous Bennett, 2009[B]	ENT008–008623	USA	Humboldt County, Califronia	–	–	–	–	FJ263791
C. gidneyi Bennett, 2009	ENT008–008625	USA	Humboldt County, Califronia	–	–	–	FJ263779	FJ263800
C. hesper Chamberlin & Ivie, 1932[B]	ENT008–008620	USA	San Mateo County, California	–	–	–	–	FJ263796
C. penedentatus Bennett, 2009[B]	ENT008–008621	USA	Santa Cruz County, California	–	–	–	–	FJ263797
C. sanbruno Bennett, 2009[B]	ENT008–008618	USA	San Mateo County, California	–	–	–	–	FJ263795
C. somesbar Bennett, 2009[B]	ENT008–008624	USA	Siskiyou County, California	–	–	–	–	FJ263798
C. sp. 2 SCC-2010	JSSC_003	–	–	HM576639	HM576654	–	HM576673	–
Allocybaeina								
A. littlewalteri Bennett, 2020	004Allo	–	–	HM576638	HM576653	–	HM576672	–
A. petegarina (Yaginuma, 1972), comb. nov.	KUZ Z4147	Japan	Mt Pisenai, Hokkaido	LC823372[A]	LC823373[A]	LC823376[A]	LC823375[A]	LC823374[A]
Calymmaria								
Cal. nana (Simon, 1897)	ENT009-004553	Canada	Victoria, British Columbia	–	–	–	–	HQ580876
Cal. sp. 2 JCS-2006	CALYMMARRIAS P2	–	–	DQ628703, DQ628740	DQ628667	–	DQ628639	DQ628612
Cal. sp. CG231	ARACG000231	USA	Sonoma County, Califronia	KY016382	KY017004	–	KY018167	–
Cybaeina								
Cn. minuta (Banks, 1906)[B]	ENT013-003969	Canada	Brooks Penninsula, British Columbia	–	–	–	–	KP655169
'*Cn.*' *whanseunensis* (Paik & Namkung, 1967), comb. nov.	LEGO_24_5	Korea	–	JN816786	JN816995	–	–	JN817204
	KUZ Z4265	Korea	Odaesan, Gangwon	LC823603[A]	LC823604[A]	LC823605[A]	–	–
Cn. sp. 2 SCC-2010	JSSC_009	–	–	HM576632	HM576648	–	HM576667	–
Cybaeota								
Co. nana Chamberlin & Ivie, 1937	ENT008–008605	USA	Sierra County, California	–	–	–	FJ263766	FJ263787
Co. sp. 3 SCC-2010	JSSC_007	–	–	HM576629	HM576645	–	HM576664	–
Sincybaeus								
S. monticola (Kobayashi, 2006), comb. nov.	KUZ Z4258	Japan	Oodaira Pass, Nagano	LC823577[A]	LC823578[A]	LC823580[A]	LC823579[A]	–
S. rarispinosus (Yaginuma, 1970), comb. nov.	KUZ Z2242	Japan	Mi. Mitake, Tsushima Island, Nagasaki	LC823560[A]	LC823561[A]	LC823563[A]	LC823562[A]	–
S. yoshiakii (Yaginuma, 1968), comb. nov.	KUZ Z4157	Japan	Mt Iwawakisan, Osaka	LC823523[A]	LC823524[A]	LC823527[A]	LC823526[A]	LC823525[A]
S. sp. KU-2024-01	KUZ Z4030	Japan	Mt Enasan, Gifu	LC823426[A]	LC823427[A]	LC823430[A]	LC823429[A]	LC823428[A]
S. sp. KU-2024-03	KUZ Z4262	Korea	Wolchulsan, South Jeolla	LC823616[A] LC823617[A]	LC823618[A]	–	–	–

Taxon	Voucher or Isolate number	Country	Locality	INSD accession number				
				18S	*28S*	*ITS-1*	*H3*	*COI*
S. sp. KU-2024-04	KUZ Z4263	Korea	Odaesan, Gangwon	LC823606[A]	LC823607[A]	–	–	–
S. sp. KU-2024-05	KUZ Z4264	Korea	Jeonju, North Jeolla	LC823622[A]	LC823623[A]	–	–	–
Outgroup								
Agelenopsis aperta (Gertsch, 1934)	AAPERTA1-EME	–	–	DQ628695, DQ628732	DQ628659	–	DQ628632	–
Cicurina sp. MH10	ZZ-2016	–	–	KR074008, KR073984	KR074034	–	KR074086	–
Cybaeolus cf. *rastellus*	ARAMR000290	–	–	KY016481	KY017117	–	KY018252	–
Hahnia zhejiangensis Song & Zheng, 1982		–	–	KR074015, KR073991	KR074041	–	KR074093	–

[A]Sequences obtained for the first time in the present study.

[B]Species used only for the “total dataset” analysis.

KUZ, Zoological Collection of Kyoto University.

Table S3. The selected partition schemes and molecular evolutionary models for the Bayesian inference (BI) phylogenetic analyses in this study.

Partition	Number of characters	Non-calibrated BI ("total" and "selected" datasets)	Time-calibrated BI
18S	1794	SYM + I + Γ	SYM + I + Γ
28S	876	GTR + I + Γ	GTR + I + Γ
ITS-1	1117	GTR + I + Γ	GTR + I + Γ
H3 1st position	109	K80 + I	K80 + I
H3 2nd position	110	GTR + Γ	GTR + Γ
H3 3rd position	109	GTR + I + Γ	GTR + I + Γ
COI 1st position	254	GTR + I + Γ	GTR + I + Γ
COI 2nd position	255	GTR + I + Γ	GTR + I + Γ
COI 3rd position	254	GTR + I + Γ	GTR + I + Γ

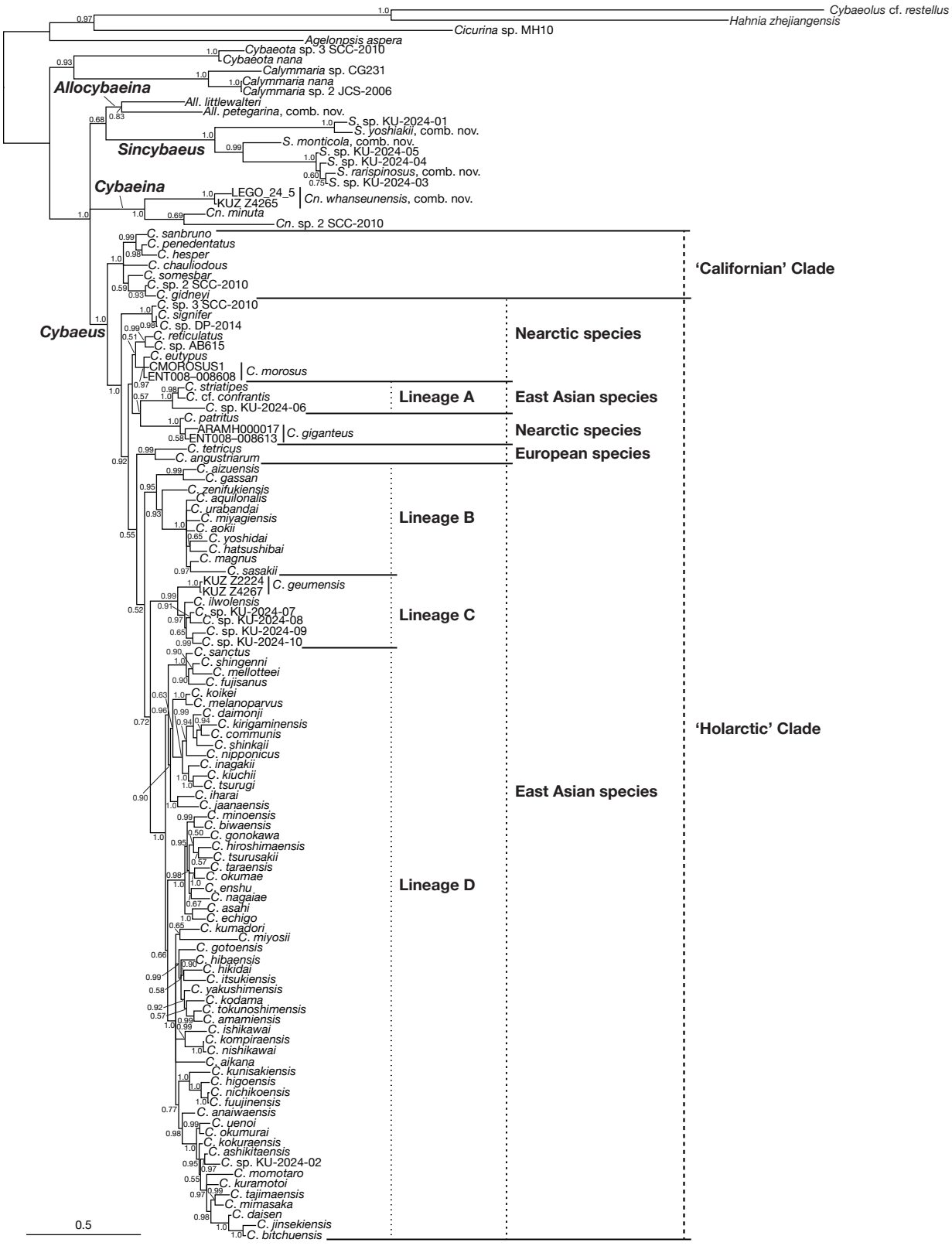

Fig. S1. Bayesian inference tree (mean ln L = −40192.478) for the "total dataset" consisting of 4878 bp of the *18S*, *28S*, *ITS-1*, *H3*, and mitochondrial *COI* genes.