MAthesis

Contents

Time bins (stratigraphic stages)

Table 1: Smaller time bins with age range, epoch name, mean age and corresponding sample sizes (on individual, species and genus level)

bin	EpochBins	Stages	MeanBins	nIndividuals	nSpecies	nGenera
(0,0.0117]	Modern	Modern	0.00585	253	65	18
(0.0117,0.126]	Upper Pleistocene	Upper Pleistocene	0.06885	49	18	8
(0.126,0.781]	Middle Pleistocene	Middle Pleistocene	0.45350	53	13	7
(0.781,1.81]	Lower Pleistocene	Lower Pleistocene	1.29350	57	27	12
(1.81,2.59]	Gelasian	Lower Pleistocene	2.19700	31	14	8
(2.59,3.6]	Piacencian	Upper Pliocene	3.09400	21	14	9
(3.6,5.33]	Zanclean	Lower Pliocene	4.46600	26	14	8
(5.33,7.25]	Messinian	Upper Miocene	6.28900	10	7	4
(7.25,11.6]	Tortonian	Upper Miocene	9.42700	45	20	9
(11.6,13.8]	Serravallian	Middle Miocene	12.71400	27	8	6
(13.8,16]	Langhian	Middle Miocene	14.89500	14	10	7
(16,23]	Burdigalian/Aquitanian	Lower Miocene	19.50000	30	14	9

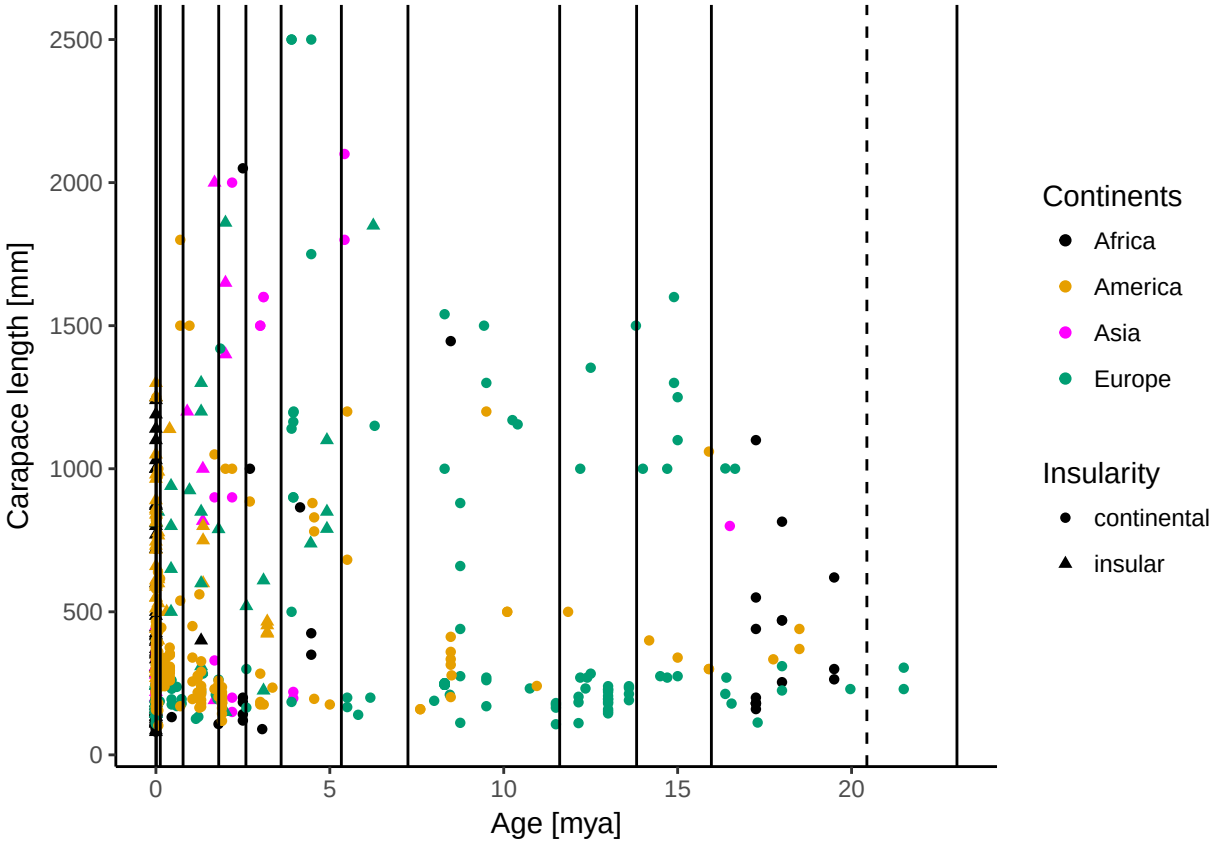

Figure 1: Scatterplot of carapace length over time, indicating insular (triangle) and continental (circles) and colour indicating continents. Lines indicate stratigraphic stages which were used as time bins, the dashed line is the border between the two stages of the Lower Miocene, which were consideres as one time bin.

Maps

fossil occurences of testudinidae

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## [1] 193
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Locality	Country
Kabyle 2 km N, Yambol Region	Bulgaria
El Harhoura 2 (Temara)	Morocco
El Harhoura 2 (Temara)	Morocco
Guenfouda Cave (Ghar Zebouj, ??????), Jerada Province	Morocco
Brown Sand Wedge Local Fauna, Roosevelt County, New Mexico	USA
Blackwater Loc. No. 1, Roosevelt County, New Mexico	USA
Robledo Cave, west side of the Robledo Mountains, Doña Ana County, New Mexico	USA
Domebo Local Fauna, Caddo County, Oklahoma	USA
Salt Creek, 4.7 mi S and 5.7 mi. W Orla, Reeves County, Texas	USA
Schulze Cave Fauna, Edwards County, Texas	USA
U-Bar Cave Late Wiskonsin, Hidalgo County, New Mexico	USA
Friesenhahn Cave, Bexar County, Texas	USA
Gorham's cave IIIb, Gibraltar Peninsula	England
Gruta do Caldeirão, Tomar	Portugal
Gruta do Escoural, Évora	Portugal
Sims Bayou Local Fauna, Harris County, Texas	USA
Shelter Cave (LACM 1010, UTEP 30), Doña Ana County, New Mexico	USA
Rancho La Brea, California	USA
Sabertooth Camel Maze, Dry Cave (UTEP 5), Eddy County, New Mexico	USA
Sabertooth Camel Maze, Dry Cave (UTEP 5), Eddy County, New Mexico	USA
Gruta Nova da Columbeira, Bombarral	Portugal
Clear Creek Local Fauna, Denton County, Texas	USA
Lewisville Site, Denton County, Texas	USA
Moore Pit, Dallas County, Texas	USA
Gruta da Figueira Brava, Arrábida	Portugal
U-Bar Cave Mid Wiskonsin, Hidalgo County, New Mexico	USA

Locality	Country
Gorham's cave IV, Gibraltar Peninsula	England
Room of the Vanishing Floor, Dry Cave (UTEP 26, 27), Eddy County, New Mexico	USA
Pendejo Cave, Rough Canyon on Fort Bliss land, 21 km east of Orogrande, Otero County, New Mexico	USA
Megenity Peccary Cave, Crawford County, Indiana	USA
Easley Ranch Local Fauna, Foard County, Texas	USA
Easley Ranch Local Fauna, Foard County, Texas	USA
Vero Beach, Indian River County, Florida	USA
Vero Beach, Indian River County, Florida	USA
Ingleside Local Fauna, San Patricio County, Texas	USA
Ingleside Local Fauna, San Patricio County, Texas	USA
Zebbug and Gahr Dalam Cave deposits	Malta
Šandalja near Pula	Croatia
Bate Cave, Rethymnon	Greece
Süttö Upper Pleistocene strata, Gerecse Mountains	Hungary
Sternatia, Lecce	Italy
Torre del Pagliaccetto, Rome	Italy
Crevene Stijena Cave, Petrovica	Serbia
Crevene Stijena Cave, Petrovica	Serbia
Crevene Stijena Cave, Petrovica	Serbia
Cueva del Boquete de Zafarraya, Sierra de Alhama, Málaga	Spain
Cueva Horá (Darro, Granada)	Spain
Hortus Cave, Valflaunès, Herault	France
Arredondo IIA, Alachua County, Florida	USA
Orange Lake 2 miles south, Marion County, Florida	USA
Reddick IA+B, Marion County, Florida	USA
Reddick IA+B, Marion County, Florida	USA
Sabertooth Cave, Lecanto 2A, Citrus County, Florida	USA
Arredondo IIA, Alachua County, Florida	USA
Melbourne, Brevard County, Florida	USA
Cueva del Camino Secteur Central, Pinilla del Valle, Madrid	Spain
Cueva del Camino Secteur Nord, Pinilla del Valle, Madrid	Spain

Locality	Country
Hopwood Farm Site, near Fillmore, Montgomery County, Illinois	USA
Peace Creek, Florida	USA
El Harhoura 1 (Temara)	Morocco
Cova del Rinoceront, eastern Garraf Massif, Can´Aymerich quarry, Castelldelfs	Spain
Libertador San Martín north bank Ensenada stream, 15 km E Diamante, Entre Rios Province	Argentina
Mealhada, Coimbra	Portugal
Vanguard Cave, Gibraltar Peninsula	England
San Vito Lo Capo K22, Sicily	Italy
Pecos River near Melena and Acme, 10-15 km NE Roswell, Chaves County, New Mexico	USA
Slaughter Canyon Cave, Eddy County, New Mexico	USA
Sima del Elefante TE18+TE19, Sierra de Atapuerca, Burgos	Spain
Dry Cave Fauna, Eddy County, New Mexico	USA
Dry Cave Fauna, Eddy County, New Mexico	USA
Cragin Quarry Local Fauna, Meade County, Kansas	USA
Butler Spring XI Ranch (KU Locality 7), Meade County, Kansas	USA
Butler Spring XI Ranch (UM-K2-62), Meade County, Kansas	USA
Butler Spring XI Ranch (UM-K3-59), Meade County, Kansas	USA
Butler Spring XI Ranch (UM-K3-59), Meade County, Kansas	USA
Nye Sink Local Fauna, Beaver County, Oklahoma	USA
Qesem Cave ~12 km east of Tel Aviv, western slopes Samaria hills	Israel
Lunel-Viel, Mas des Caves (Hérault)	France
Caprine, Rome	Italy
Palombara Marcellina, Rome	Italy
Tarquina, Rome	Italy
Angus Local Fauna (UNSM No-101), Nuckolls County, Nebraska	USA
Berends Local Biota, Beaver County, Oklahoma	USA
Kanopolis Local Fauna, Ellsworth County, Kansas	USA
Stazione Ferroviaria, Comiso (RG), Sicily	Italy
Contrada Annunziata, Ragusa (RG), Sicily	Italy
Contrada Castellazzo, Vittoria (RG), Sicily	Italy
Marjan	Croatia

Locality	Country
Spinagallo Cave, Siracusa, Sicily	Italy
Abime de la Fage, Correze	France
Caverna de Gràcia, Güell park, Barcelona	Spain
Caverna de Gràcia, Güell park, Barcelona	Spain
Caverna de Gràcia, Güell park, Barcelona	Spain
Riparo di Visogliano (TS)	Italy
Kénitra, Guilloux quarry, near Rabat	Morocco
Cova de Gràcia, Park Güell, Barcelona	Spain
Raebia, Atambua area, Timor	Indonesia
Alcamo travertini (TP)	Italy
Grotta Marasà (PA)	Italy
Saint-Estève-Janson, l'Escale Cave (Bouches du Rhône)	France
Arkalon Local Fauna, Seward County, Kansas	USA
Arkalon Local Fauna, Seward County, Kansas	USA
Valdemino Cave, 20-24 (Borgio Verezzi, Liguria)	Italy
Gilliland local fauna, Burnett Ranch, 7 miles W of Vera, Knox County, Texas	USA
Soave, Zoppega 2 cave, Verona	Italy
Valle de Fontechevade, Charente	France
Monsummano	Italy
Loreto di Venosa, Potenza	Italy
Rock-Cavities, Gibraltar Peninsula	England
Wolo Sege, Flores	Indonesia
Cedazo local fauna, Aguascalientes, Mexico	Mexico
Cueva de la Victoria-1 (CV-1), Carthagène, Murcia	Spain
Cava Dell'Erba Apricena, Foggia	Italy
Cava Pirro Apricena, Foggia	Italy
Sima del Elefante TE14, Sierra de Atapuerca, Burgos	Spain
Sima del Elefante TE11, Sierra de Atapuerca, Burgos	Spain
Sima del Elefante TE12, Sierra de Atapuerca, Burgos	Spain
Sima del Elefante TE13, Sierra de Atapuerca, Burgos	Spain
Sima del Elefante TE9, Sierra de Atapuerca, Burgos	Spain

Locality	Country
Leisey Shell Pit 1A, Hillsborough County, Florida	USA
Leisey Shell Pit 1A, Hillsborough County, Florida	USA
Leisey Shell Pit 2, Hillsborough County, Florida	USA
Leisey Shell Pit 1A, Hillsborough County, Florida	USA
Leisey Shell Pit 2, Hillsborough County, Florida	USA
Leisey Shell Pit 3, Hillsborough County, Florida	USA
Leisey Shell Pit 3A, Hillsborough County, Florida	USA
Casimba de Jatibonica, Santa Clara Province	Cuba
Tangi Talo, Dhozo Dhalu, Flores	Indonesia
Barranco León 5 (BL-5=Capa D), Dépression de Guadix-Baza, Grenade	Spain
Chapepote spring at Banos de Ciego Montero, Santa Clara Province	Cuba
Hato Nuevo, Matanzas Province	Cuba
Mesilla Basin Fauna C, Doña Ana County, New Mexico	USA
Mesilla Basin Fauna C, Doña Ana County, New Mexico	USA
Sierra de Quibas, Abanilla, Murcia	Spain
Gervasio 5 (FG)	Italy
El Paso, eastern side of the Franklin Mountains and along the Rio Grande, El Paso County, Texas	USA
Tijeras Arroyo, Bernalillo County, New Mexico	USA
Pirro Nord (Cava dell'Erba, Cava Pirro); Apricena, Apulia Italy	Italy
La Union, Doña Ana County, New Mexico	USA
La Union, Doña Ana County, New Mexico	USA
Pearson Mesa near Virden, Hidalgo County, New Mexico	USA
Lakonia	Greece
Dmanisi	Georgia
Figline, Upper Valdarno	Italy
Il Tasso, S. Giovanni (AR), Upper Valdarno	Italy
Le Mignaie, Upper Valdarno	Italy
Le Ville, Upper Valdarno	Italy
L'Inferno, Upper Valdarno	Italy
Montecarlo, Upper Valdarno	Italy
Kisláng, Fejer	Hungary

Locality	Country
Montoussé 5, Hautes Pyrenees	France
Monte Tuttavista VII mustelide, Sardinia	Italy
White Rock local fauna, Republic County, Kansas	USA
Lesbos Island, F-Site	Greece
Big Springs Gravel Pit (UNSM Ap-103), Antelope County, Nebraska	USA
Caballo Local Fauna, Palomas Basin, Sierra County, New Mexico	USA
Caballo Local Fauna, Palomas Basin, Sierra County, New Mexico	USA
Capo Mannu near San Vero Milis, base of D4 dune, Sardinia	Italy
Kelatchay (Dushak)	Turkmenistan
Varshets 6 km NNE, Michajlovrad Province	Bulgaria
MacAsphalt Shell Pit, Sarasota County, Florida	USA
St. Petersburg Times Site, Pinellas County, Florida	USA
Ahl al Oughlam (near Casablanca)	Morocco
Ahl al Oughlam (near Casablanca)	Morocco
Ahl al Oughlam (near Casablanca)	Morocco
Cova de Ca Na Reia, Eivissa, Ibiza	Spain
Es Pujol d´es Fum, Formentera	Spain
Kryshanovka 1	Ukraine
Milia, Grevena, W Macedonia	Greece
Milia, Grevena, W Macedonia	Greece
North Cita Canyon (Middle Stratum), Randall County, Texas	USA
Novaya Etulia 2	Moldova
Palomas Creek Fauna, Palomas Basin, Sierra County, New Mexico	USA
Tha Chang area, Chaloem Pra Kiat district, Nakhon Ratchasima Province	Thailand
Sand Draw local fauna, Brown County, Nebraska	USA
Sawrock Canyon local fauna, Seward County, Kansas	USA
Sand Draw local fauna, Brown County, Nebraska	USA
Sand Draw local fauna, Brown County, Nebraska	USA
UCMP V6327, La Porteria, Kettleman Hills, Kings County, California	USA
Cuchillo Negro Creek Local Fauna, Engle Basin, Sierra County, New Mexico	USA
Elephant Butte Lake Fauna, Engle Basin, Sierra County, New Mexico	USA

Locality	Country
Las Higueruelas, Alcolea de Calatrava, Ciudad Real	Spain
Las Higueruelas, Alcolea de Calatrava, Ciudad Real	Spain
Las Tunas, Baja California Sur	Mexico
Laetoli	Tanzania
Laetoli	Tanzania
Dikika (DIK-1)	Ethiopia
Cita Canyon, UCMP V-3721, Harrell Ranch, Randall County, Texas	USA
Cita Canyon, UCMP V-3721, Harrell Ranch, Randall County, Texas	USA
Liventsovka horizon 5, near Rostov-on-Don	Russia
Serrat-d´en-Vacquer near Perpignan, Pyrénées-Orientales	France
Megalo Emvolon 1 (MEV), 20 km SW Thessaloniki	Greece
Megalo Emvolon 1 (MEV), 20 km SW Thessaloniki	Greece
W??e 1	Poland
W??e 1	Poland
W??e 1	Poland
Perpignan et sa région, Pyrénées-Orientales	France
Perpignan et sa région, Pyrénées-Orientales	France
Serrat-d´en-Vacquer near Perpignan, Pyrénées-Orientales	France
Musaid right bank of Big Salcha River, Vulkaneshty Region	Moldova
Novo-Savitzkaya	Moldova
Ptolemais 6A = Notio 1 (NO 1)	Greece
Ptolemais 6B = Notio 1	Greece
Ptolemais 6C = Notio 1 (NO 1)	Greece
Epanomi (EPN I), western Chalkidiki Peninsula, Thessaloniki area	Greece
Epanomi (EPN II), western Chalkidiki Peninsula, Thessaloniki area	Greece
Altan-Teli main fossiliferous bed (Dzereg valley)	Mongolia
Nea Kallikratia, western Chalkidiki Peninsula, Thessaloniki area	Greece
Nea Michaniona, western Chalkidiki Peninsula, Thessaloniki area	Greece
Farola Monte Hermoso, 12 km SW Pehuen Có Beach, Buenos Aires Province	Argentina
Çalta	Turkey
El Arquillo 3 (ARQ3)	Spain

Locality	Country
Kanapoi	Kenya
Kanapoi	Kenya
Kanapoi	Kenya
Aramis, ARA-VP-6/500, Middle Awash Valley	Ethiopia
Cala Es Pous near Ciutadella, Minorca	Spain
Punta Nati near Ciutadella, Minorca	Spain
Jambol, Tenovo or General Insovo sandstone quarries	Bulgaria
Montpellier, Hérault	France
Novopetrovka	Ukraine
Lee Creek Mine, Yorktown Sample, Beaufort County, North Carolina	USA
Rexroad local fauna (Fox Canyon locality 3), Meade County, Kansas	USA
Rexroad local fauna (Fox Canyon locality 3), Meade County, Kansas	USA
Tchelopetchene 1 (sand facies)	Bulgaria
Nikolskoe	Moldova
Yepómera, Chihuahua	Mexico
Santee, Knox County, Nebraska	USA
Devil´s Nest Airstrip, Knox County, Nebraska	USA
Devil´s Nest Airstrip, Knox County, Nebraska	USA
Santee, Knox County, Nebraska	USA
Devil´s Nest Airstrip, Knox County, Nebraska	USA
Kuchurgan	Ukraine
Kuchurgan	Ukraine
Osztramos 1C	Hungary
Polenzo section along Tanaro River, Verduno, Piedmont Italy	Italy
UCMP V71137, Turlock Lake 10, Stanislaus County, California	USA
UCMP V81248, Turlock Lake 11, Stanislaus County, California	USA
Allatini, eastern part of Thessaloniki, western Chalkidiki peninsula	Greece
Pylea, eastern part of Thessaloniki, western Chalkidiki peninsula	Greece
As Sahabi	Libya
UCMP V65711, Turlock Lake General, Stanislaus County, California	USA
UCMP V6878, Turlock Lake, Stanislaus County, California	USA

Locality	Country
UCMP V71138, Dallas-Warner Reservoir 1, Stanislaus County, California	USA
UCMP V90007, Turlock Lake 13, Stanislaus County, California	USA
UCMP V90008, Turlock Lake 14, Stanislaus County, California	USA
Withlacoochee River Site 4A, Marion County, Florida	USA
Chiquimil, Catamarca	Argentina
Brisghella Cava Monticino	Italy
Polgárdi 2	Hungary
Venta del Moro (Cabriel Basin)	Spain
Torrente Melacce, Cinigiano (GR)	Italy
Gretoni, Stazione Monte Amiata (SI)	Italy
Shkodova Gora	Ukraine
Santa-Vittoria d'Alba	Italy
Stanianzi	Bulgaria
Samos 1	Greece
Tudorovo	Moldova
Kuyalnik	Ukraine
Lukeino	Kenya
Autovía A-30, Murcia	Spain
Casa Castillo near Jumilla, Murcia	Spain
Megalo Rema near Paleomilos	Greece
Lothagam 1	Kenya
Lothagam 2	Kenya
Barranco del Cigarrón (B-Cg1), S El Palmar, Murcia	Spain
Hamra	United Arabian E
Jebel Dhannah	United Arabian E
Kihal	United Arabian E
Shuwaihat	United Arabian E
Azmaka quarry 2.5 km NNE Chirpan	Bulgaria
Toros-Menalla, Djurab desert (TM 266)	Chad
Chimishlia	Moldova
Taraklia	Moldova

Locality	Country
Tardosbánya 3	Hungary
Morskaya 2 locality of the Sea of Azov region	Russia
Novoelizavetovka	Ukraine
Fosso della Fittaia 2013, Baccinello-Cinigiano Basin, Tuscany	Italy
Chobruchi	Moldova
Cliffs in the Paraná eastern riverside near Paraná, Entre Ríos	Argentina
Montagne du Lubéron à Cucuron, Vaucluse et Alpes-de-Haute-Provence	France
Montagne du Lubéron à Cucuron, Vaucluse et Alpes-de-Haute-Provence	France
Kalimantsi 2-4	Bulgaria
Kalimantsi 2-4	Bulgaria
Buis Ranch Local Fauna, Beaver County, Oklahoma	USA
Salinas Grandes de Hidalgo, Atreucó, La Pampa	Argentina
Bajo Giuliani, La Pampa	Argentina
Quehué, La Pampa	Argentina
Belka	Ukraine
Rooilepel D. laini level	Namibia
Aubignas 1+2, Ardèche	France
Yurievka	Ukraine
Novoukrainka 1 (= Budenovka)	Ukraine
Grebeniki 1	Ukraine
Csákvár, Esterh?y Cave, Fejér Province	Hungary
Prottes	Austria
Prottes	Austria
Prottes	Austria
Crevillente 2	Spain
Crevillente 2	Spain
Prottes	Austria
Crevillente 2	Spain
Dorn-Dürkheim, Giloth Quarry, about 25 km S Mainz	Germany
Altan-Teli Oshi horizon (Dzereg valley)	Mongolia
Kainary	Moldova

Locality	Country
San Nicolas, UCMP locality V4536	Colombia
Cava Monticino, near Brisigella, Emilia-Romana	Italy
Ambérieu-en-Bugey, Ain	France
Saint-Bauzile, Ardèche	France
Dove Spring Fauna, Mojave Desert, Kern County, California	USA
Dove Spring Fauna, Mojave Desert, Kern County, California	USA
Kohfidisch	Austria
Kohfidisch	Austria
Kohfidisch	Austria
El Hatillo, 1.5 km north of, Falcón State	Venezuela
Montredon, Aude	France
Udabno	Georgia
Krivoj Rog	Ukraine
Love Bone Bed along State Road 241 near Archer, Alachua County, Florida	USA
Patos (= Acre 6, LACM Locality 4611), Assisbrasil County, Acre	Brazil
UCMP V-3952, Ingram Creek site 8, Stanislaus County, California	USA
Kamenica nad Hronom	Slovakia
Poc?e?ti right side Ikel River valley	Moldova
Cerro de los Batallones, Madrid	Spain
Cerro de los Batallones, Madrid	Spain
Varnitza	Moldova
Borský Svätý Jur	Slovakia
Bushor 1	Moldova
Kalfa	Moldova
Lapushna	Moldova
Götzendorf	Austria
Jebel Semama	Tunisia
Sabadell	Spain
Saint-Fons, Rhône	France
WaKeeney Local Fauna (UM-K6-59 on the Lowell Hillman Ranch), Trego County, Kansas	USA
WaKeeney Local Fauna (UM-K6-59 on the Lowell Hillman Ranch), Trego County, Kansas	USA

Locality	Country
Ricardo Fauna, Mojave Desert, Kern County, California	USA
Ricardo Fauna, Mojave Desert, Kern County, California	USA
Rudabanya (grey green marl 5C)	Hungary
Rudabánya, Borsod-Abaúj-Zemplén Province (all)	Hungary
El Lugarejo (Arévalo), Ávilla, Castilla	Spain
Autovía A6, Arévola, Ávila	Spain
Tataru?-Brusturi	Romania
Arevalillo River (Arévola), Ávila	Spain
Arévalo, Ávila, Castilla	Spain
Höwenegg	Germany
Höwenegg	Germany
Autovía Orbital de Barcelona B-40 (B40OV/S4K), Vallés-Penedés basin, Cataluña	Spain
Autovía Orbital de Barcelona B-40 (B40OV/S4K), Vallés-Penedés basin, Cataluña	Spain
Can Filuà, Santa Perpétua, Vallès Occidental, Barcelona	Spain
Can Gavarra, Polinyá, Vallès Occidental, Barcelona	Spain
Can Vinyalets, Barcelona	Spain
Djebel Krechem el Artsouma	Tunisia
Vösendorf-Brunn, near Wien	Austria
Hostalets de Piérola, Barcelone province, Cataluña, Vallés-Penedés basin	Spain
Valles de Fuentidueña, Segovia Province	Spain
Valles de Fuentidueña, Segovia Province	Spain
Valles de Fuentidueña, Segovia Province	Spain
Benavente, Zamora	Spain
Estació Depuradora d´Aigües Residuals Sabadell Riu-Ripoll, Cataluña, Vallés-Penedés basin	Spain
Hostalets de Piérola Superior, Barcelone province, Cataluña, Vallés-Penedés basin	Spain
Küçükçekmece	Turkey
Ecoparc de Can Mata (els Hostalets de Pierola), Vallés-Penedés basin, Cataluña	Spain
Holzmannsdorfberg bei St. Marein	Austria
McGehee Farm near Newberry, Alachua County, Florida	USA
Karingarab D. wardi level	Namibia
Rooilepel D. wardi level	Namibia

Locality	Country
Hammerschmiede 3	Germany
Atzelsdorf, 35 km NE Vienna, Lower Austria	Austria
Hammerschmiede 1	Germany
Petersbuch 14	Germany
Sant Quirze de Terrassa/de Galliners (del Vallès), Barcelona	Spain
Wessington Springs local fauna, Jerauld County, South Dakota	USA
Gritsev (Khmelnitsk area, Shepetovski district)	Ukraine
Hammerschmiede 5 (HAM 5)	Germany
Nombrevilla 2. NOM 2	Spain
Iron Canyon Fauna, Mojave Desert, Kern County, California	USA
Can Mata (els Hostalets de Pierola), Vallés-Penedés basin, Cataluña	Spain
North of Gypsum Plate Pan D. wardi level	Namibia
Gratkorn, clay pit St. Stefan, Styria	Austria
Gratkorn, clay pit St. Stefan, Styria	Austria
Toril 3A. TOR 3A, near Daroca, Zaragoza province	Spain
Toril 3B. TOR 3B, near Daroca, Zaragoza province	Spain
Sofca (125) - F 434	Turkey
La Ciesma 1, Aragón	Spain
La Ciesma 1, Aragón	Spain
El Buste, Aragón	Spain
Cerro del Otero, Palencia	Spain
Fuensaldaña, Valladoid	Spain
Illescas, Toledo	Spain
Illescas, Toledo	Spain
La Cistérniga, Valladolid	Spain
Bois de Fabregues, Aups, Var	France
La-Grive-Saint-Alban (M+L7), Isère	France
Abocador de Can Mata (els Hostalets de Pierola)(ACM/BDA), Vallés-Penedés basin, Cataluña	Spain
Coca cemetery, Segovia	Spain
Oehningen, oberer Bruch, Schienerberg N Oehningen-Wangen	Germany
Valentine Railway Quarry A, UNSM Cr 12, Cherry County, Nebraska	USA

Locality	Country
Valentine Railway Quarry B, UNSM Cr 13, Cherry County, Nebraska	USA
Fort Niobrara, UCMP V-3218, Cherry County, Nebraska	USA
Steinheim a. Albuch	Germany
Hohenhöwen, Engen, Hegau, southwestern Germany	Germany
Steinheim a. Albuch	Germany
Myers Farm, Webster County, Nebraska	USA
Myers Farm, Webster County, Nebraska	USA
DISC Cluster Sites, conglomerate, Fort Polk, Louisiana	USA
Coca-Villeguillo, Segovia	Spain
Uitikon-Schlieren, quarry on road, near Zürich	Switzerland
Veltheim-Winterthur	Switzerland
Sansan, Gers (lake)	France
Petersbuch 31 - oben	Germany
Mynsualmas	Kazakhstan
Chañe, Segovia	Spain
Somosaguas Sur, Madrid Basin	Spain
Belomechetskaya	Russia
Puente de la Princessa, Madrid	Spain
Villalcón, Palencia	Spain
Goldberg near Pflaumloch, Nördlinger Ries (without number)	Germany
Kirrberg b. Balzhausen - Tongrube	Germany
Kirrberg b. Balzhausen - Tongrube	Germany
Ursberg (nördliche Sandgrube)	Germany
Bohlinger Schlucht 6	Germany
Wien-Kalksburg	Austria
Egelhoff Ranch Local Fauna, Keya Paha County, Nebraska	USA
La Barranca, Zaragoza	Spain
Stätzling	Germany
Bonlanden, Illertal	Germany
Bonlanden, Illertal	Germany
Unterzell 1a	Germany

Locality	Country
Norden Bridge Local Fauna, Brown County, Nebraska	USA
Norden Bridge Local Fauna, Brown County, Nebraska	USA
Laimering 3	Germany
Ziemetshausen 1e	Germany
Tarazona de Aragón	Spain
Tarazona de Aragón	Spain
Hambach 6C	Germany
Georgensgmünd, Reznat-Altmühl-Stausee	Germany
Edelbeuren-Schlachtberg	Germany
Griesbeckerzell 1a	Germany
Griesbeckerzell 1a	Germany
Tobel Oelhalde Nord 1	Germany
Tobel Oelhalde Süd	Germany
Tobel Oelhalde Süd	Germany
Ziemetshausen 1b	Germany
Ziemetshausen 1b	Germany
Ziemetshausen 1g	Germany
Valdemoros 3B. VA 3B	Spain
Derching 1b (unten)	Germany
Edelbeuren-Maurerkopf	Germany
Edelbeuren-Maurerkopf	Germany
Alcalá de Henares, Cerro del Viso (Barranco de los Mártires y Santos de la Humosa), Madrid	Spain
Vallecas, Madrid	Spain
Burgerbachtobel 1 near Wippertsweiler	Germany
Przeworno I	Poland
Barajas, Madrid	Spain
Barajas, Madrid	Spain
Ciudad Universitaria, Madrid	Spain
Henares 1, Los Santos de la Humosa, Madrid	Spain
Puente de los Franceses, Madrid	Spain
Puente de los Franceses, Madrid	Spain

Locality	Country
Vallecas, Madrid	Spain
Plum Point, Calvert County, Maryland	USA
Hottell Ranch rhino quarries, Banner County, Nebraska	USA
Lassé, Maine-et-Loire	France
Pontigné-les-Buisseneaux, Maine-et-Loire	France
Calle Moratines, Madrid	Spain
Calle Paseo de Moret, Madrid	Spain
Paracuellos de Jarama, Madrid	Spain
Benistobel (Kohltobel)	Germany
Burgerbachtobel 1 near Wippertsweiler	Germany
Burgerbachtobel 1 near Wippertsweiler	Germany
Ettishofener Ach between Inntobel and Berg-Ettishofen	Germany
Ettishofener Ach between Inntobel and Berg-Ettishofen	Germany
Griesbeckerzell 1b	Germany
Hotterloch-Tobel SW Ravensburg	Germany
Lattentobel	Germany
Ochsenhausen am Heselsberg, Baustelle Remmele	Germany
Schmalegger Tobel	Germany
Schmalegger Tobel	Germany
Ziemetshausen 1d	Germany
Ziemetshausen 1f	Germany
Grund near Hollabrunn (Collection Schaffer)	Austria
Petersbuch 41	Germany
Eibiswald	Austria
Furth 460m	Germany
Eberstetten 2 (unter Weg)	Germany
Untereichen-Altenstadt 565m	Germany
Untereichen-Altenstadt 565m	Germany
Randle Cliff, Calvert County, Maryland	USA
Pontlevoy-Thenay, Loir-et-Cher	France
Pontlevoy-Thenay, Loir-et-Cher	France

Locality	Country
Biberach-Jordanbad	Germany
Heggbach am Buchhaldenberg, Maselheim, near Biberach	Germany
Heggbach am Buchhaldenberg, Maselheim, near Biberach	Germany
Coldspring Trinity River Local Fauna, San Jacinto County, Texas	USA
Chesapeak Beach RR Station, Maryland	USA
Oberbernbach a	Germany
Oggenhof near Häder	Germany
Vieux-Collonges, Saint-Cyr-au-Mont-d´Or, Rhône, France	France
Vieux-Collonges, Saint-Cyr-au-Mont-d´Or, Rhône, France	France
Moratilla 2. MOR 2	Spain
Gisseltshausen 1b	Germany
Castelnau d´Arbieu, Gers	France
Dénezé-sous-le-Lude, Maine-et-Loire	France
Noyant-sous-le-Lude, Maine-et-Loire	France
Savigné-sur-Lathan, Indre-et-Loire	France
Gisseltshausen 1a	Germany
Sainbach (bei Ichenhofen)	Germany
Häder	Germany
Unterempfenbach 1d	Germany
Walda 2 (oben)	Germany
Walda 2 (oben)	Germany
Altheim-Breitenlauh 2	Germany
Eggingen-Schleiche B	Germany
Eggingen-Schleiche B	Germany
Maßendorf	Germany
Maßendorf	Germany
Walda 1 (unten)	Germany
Walda 1 (unten)	Germany
San Roque 3. SR 3	Spain
Sandelzhausen	Germany
Sandelzhausen unterer Geröllmergel (B)	Germany

Locality	Country
Sandelzhausen	Germany
Sandelzhausen oberer Geröllmergel (D2)	Germany
Sandelzhausen oberer Geröllmergel (E)	Germany
Sandelzhausen unterer Geröllmergel (B)	Germany
Sandelzhausen unterer Geröllmergel (C1)	Germany
Sandelzhausen unterer Geröllmergel (C2)	Germany
Sandelzhausen unterer Geröllmergel (C3/D1)	Germany
Monteagudo, Aragón	Spain
Puttenhausen 2	Germany
Puttenhausen E	Germany
Schießen	Germany
Schießen	Germany
Schönenberg near Jettingen	Germany
Schönenberg near Jettingen	Germany
Teiritzberg (T1 = 001/D/C), Korneuburg Basin, Lower Austria	Austria
Teiritzberg (T1 = 001/D/C), Korneuburg Basin, Lower Austria	Austria
Kleinebersdorf, Wolmuth-Sandgrube (010/G/Liegendes), Korneuburg Basin, Lower Austria	Austria
Obergänserndorf (OG2), Korneuburg Basin, Lower Austria	Austria
Teiritzberg (001/X/C), Korneuburg Basin, Lower Austria	Austria
Teiritzberg (001/X/C), Korneuburg Basin, Lower Austria	Austria
Weinsteig (107), Korneuburg Basin, Lower Austria	Austria
Weinsteig (107/S/B), Korneuburg Basin, Lower Austria	Austria
Kirchdorf an der Iller	Germany
Langenmosen	Germany
Puttenhausen B	Germany
Eitensheim	Germany
Eitensheim	Germany
Randecker Maar	Germany
Illerkirchberg 1	Germany
Illerkirchberg 1	Germany
Puttenhausen A	Germany

Locality	Country
Wackersdorf Westfeld	Germany
Contres, Loir-et-Cher	France
Günzburg 2/1 Umgehungsstrasse Sande	Germany
Günzburg 2/2 Umgehungstr höhere Bereiche der Sande	Germany
Günzburg 2/5 Umgehung Sande im Süden Aufschluss	Germany
Günzburg 2/6 Umgehung Sande im Norden Aufschluss	Germany
La Romieu, Gers	France
Forsthart	Germany
Arrisdrift	Namibia
Arrisdrift	Namibia
Aerotrain a Chevilly pres d'Artenay (Loiret)	France
Baigneaux-en-Beauce (Eure-et-Loir)	France
Suèvres aux Imberts, Loir-et-Cher	France
Suèvres aux Imberts, Loir-et-Cher	France
Erkertshofen 1	Germany
Erkertshofen 2	Germany
Gerlenhofen	Germany
Can Mas near El Papiol, Barcelone province, Cataluña, Vallés-Penedés basin	Spain
Ba?a Dolina in Ve?ký Krtíš	Slovakia
Reisensburg near Günzburg	Germany
Reisensburg near Günzburg	Germany
Culebra Reach, Station 1998 + 00, 600 feet W of center line of Panama Canal	Panama
Freudenegg 2 Baggersee	Germany
Freudenegg 3 Baggersee	Germany
Freudenegg 3 Baggersee	Germany
Petersbuch 4	Germany
Djebel Zelten	Libya
Béon 1 (Montréal-du-Gers)	France
Béon 1 (Montréal-du-Gers)	France
Petersbuch 7	Germany
Pamunkey River, between King William and New Kent Counties, Virginia	USA

Locality	Country
Pollack Farm Site near Cheswold, Kent County, Delaware	USA
Rauscheröd near Passau, Bavaria	Germany
Langenau 1	Germany
Langenau 1	Germany
Langenau 2	Germany
Langenau 2	Germany
Hiwegi loc. R 1	Kenya
Hiwegi loc. R 106	Kenya
Hiwegi loc. R 3	Kenya
Hiwegi loc. R 5	Kenya
Mfangano	Kenya
Nira and Kachuku near Karungu	Kenya
Rangoye, Uyoma peninsula lake Victoria	Kenya
Eggingen-Mittelhart	Germany
Eggingen-Mittelhart	Germany
Walangani	Kenya
Auchas	Namibia
Leithagebirge between Au and Loretto	Austria
Marsolan, Gers	France
Neuville-aux-Bois, Loiret	France
Grimmelfingen	Germany
Kiahera loc. R 120	Kenya
Thomas Farm Local Fauna, Gilchrist County, Florida	USA
Chitenay, Loir-et-Cher	France
Mauvieres, Marcilly-sur-Maulne, Indre-et-Loire	France
Thomas Farm Local Fauna, Gilchrist County, Florida	USA
Torralba de Ribota (Zaragoza)	Spain
Baltringen	Germany
Baltringen	Germany
Chilleurs-aux-Bois, Loiret (Burdigalian)	France
La Brosse, Maine-et-Loire	France

Locality	Country
Stubersheim 3	Germany
Glastal	Namibia
Langental, nothern Sperrgebiet	Namibia
Elisabethfeld (= Elisabeth Bay) area, northern Sperrgebiet	Namibia
Chubut Valley south side between Gaiman and Dolavon, Patagonia	Argentina
Fiskus	Namibia
Grillental, northern Sperrgebiet	Namibia
Marsland Quadrangle, Box Butte County, Nebraska	USA
Eggenburg-Schindergraben, Lower Austria	Austria
Auterive, Haute-Garonne	France
Grépiac, Haute-Garonne	France
Grépiac, Haute-Garonne	France
Landes-le-Gaulois, Loir-et-Cher	France
Barbotan-les-Thermes (Gers)	France
Aresing (shallow lake)	Germany
Tréteau, Allier	France
Marcoin, Volvic, Puy-de-Dôme	France
Saint-Gérand-le-Puy, Allier	France
Saint-Gérand-le-Puy, Allier	France
Saint-Gérand-le-Puy, Allier	France
Wallenried Channel, 10 km N Fribourg	Switzerland
Montaigu-le-Blin, La Chacotte, Allier	France
Langy, Allier	France
Saulcet, Allier	France
Pechbonnieu, Haute-Garonne	France
Pechbonnieu, Haute-Garonne	France
Toledo Bend Dam, Newton County, Texas	USA
Paulhiac, Lot-et-Garonne	France
Peublanc, Sorbier, Allier	France
Créchy, Allier	France
Venelles 35 km N Marseille	France

Locality	Country
Toulouse Puits Borderouge niveau inférieur, Haute-Garonne	France
Hautesvignes, Lot-et-Garonne	France
Moissac 2, Tarn-et-Garonne	France
Moissac 2, Tarn-et-Garonne	France
La Milloque, Hautefage, Lot-et-Garonne	France
Mine des Rois, Dallet et Pont-du-Château, Puy-de-Dôme	France
Saint-Thomas, Hautefage, Lot-et-Garonne	France
Dieupentale, Tarn-et-Garonne	France
Oberleichtersbach	Germany
Oberleichtersbach	Germany
Coderet, Bransat, Allier	France
Gannat, Allier (shallow lake)	France
Prairéal, Vaumas, Allier	France
Pech-Desse, Moulliac, Tarn-et-Garonne, Phosphorite du Quercy	France
Pech-Desse, Moulliac, Tarn-et-Garonne, Phosphorite du Quercy	France
Paali Nala level 1, Balochistan	Pakistan
Pech-du-Fraysse, Saint-Projet, Tarn-et-Garonne, Phosporites du Quercy	France
Pech-du-Fraysse, Saint-Projet, Tarn-et-Garonne, Phosporites du Quercy	France
Pech-du-Fraysse, Saint-Projet, Tarn-et-Garonne, Phosporites du Quercy	France
Veauche, Loire	France
Paali Nala level C2, Balochistan	Pakistan
Aktau Chul´adyr Formatioon Lower Member	Kazakhstan
Marseille, Saint-André, Bouches-du-Rhône	France
Marseille, Saint-André, Bouches-du-Rhône	France
Le Crozatier, Brons, Cantal	France
Le Crozatier, Brons, Cantal	France
Le Garouillas, Phosphorites du Quercy	France
Rigal-Jouet, Phosphorites du Quercy	France
Neschers à La Sauvetat, Puy-de-Dôme	France
Saint-Germain-Lembron, Puy-de-Dôme	France
Vaumas, Allier	France

Locality	Country
Puylaurens, Tarn	France
Pichovet, Vachères, Lubéron, Provence-Alpes-Côte d´Azur	France
Espenhain near Leipzig	Germany
Talagay (Tayzhuzgen section)	Kazakhstan
Saint-Vivien-de-Monségur, Gironde	France
Itardies (Caylus, Tarn-et-Garonne)	France
Mounayne, Phosphorites du Quercy	France
Roqueprune, Mouillac, Tarn-et-Garonne, Phosphorites du Quercy	France
Pech-Crabit, Bach, Lot, Phosphorites du Quercy	France
Pech-Crabit, Bach, Lot, Phosphorites du Quercy	France
North Mesa, Shara Murun region, Inner Mongolia	China
Twin Oboes, Shara Murun region, Inner Mongolia	China
Ardyn Obo basin, Chinese Postroad	Mongolia
Ardyn Obo basin, Chinese Postroad	Mongolia
Ardyn Obo basin, Chinese Postroad	Mongolia
Promontory Bluff (Sair Usu 150- Kalgan 350 miles)	Mongolia
Bournoncle-Saint-Pierre, Auvergne, Haute-Loire	France
Los Barros quarry, 4 km SE Àvila	Spain
La Plante 2, Concots, Lot, Phosporite du Quercy	France
Mas de Got A, Phosphorites du Quercy	France
Mas de Got B, Phosphorites du Quercy	France
Quercy (Phosphorites du Quercy)	France
Quercy (Phosphorites du Quercy)	France
Thaytiniti, Dhofar	Oman
Kalgan area	China
Gua Teg	Mongolia
AMNH quarries A, B, C, Fayyum	Egypt
Neumühle near Weinheim/Alzey	Germany
Ruch, Gironde	France
Sainte-Marthe, Eymet, Dordogne	France
Ravet-Lupo, Caylus, Lot, Phosphorites du Quercy	France

Locality	Country
Soumaille, Pardaillan, Lot-et-Garonne	France
Aubrelong 1, Phosphorites du Quercy, Lot	France
Baby 2, Saint-André-et-Appelles, Gironde	France
Saint-Capraise-d´Eymet, Dordogne	France
Korablik Kiinkerish	Kazakhstan
Ardyn Obo (Ergelyeen Dzo), SE Gobi	Mongolia
Escamps, Phosphorites du Quercy	France
Lostange, Beduer, Lot	France
Lostange, Beduer, Lot	France
Rosières, Escamps, Lot, Phosporites du Quercy	France
Sainte-Croix-de-Brignon, Gard	France
Sindou D, Phosphorites du Quercy	France
Paris Montmartre	France
Côja, Cerâmica da Carriça	Portugal
La Débruge = Butte de Sainte Radegonde (pres d´Apt, Gargas, Vaucluse)	France
La Grave, Bonsac, Gironde	France
Langlès, Saint-Martin-de-Villeréal, Lot-et-Garonne	France
Sainte-Néboule, Béduer, Lot	France
Santiago Yolomécatl, Oaxaca	Mexico
Santiago Yolomécatl, Oaxaca	Mexico
Calf Creek near Eastend, Saskatchewan	Canada
Chéry-Chartreuve (Aisne)	France
Grisolles, Est du Basin de Paris, Aisne	France
Rocourt-Saint-Martin, Aisne	France
Rocourt-Saint-Martin, Aisne	France
Myaing UCMP locality V6204	Myanmar
Thandaung kyitchaung, UCMP locality V78090	Myanmar
Naia, Tondela, Viseu	Portugal
Castres, Bassin de l´Agout, Tarn	France
Lautrec, Tarn	France
Robiac, Saint-Mamert, Gard	France

Locality	Country
Robiac, Saint-Mamert, Gard	France
Mazaterón, Soria Province, Castilla y León	Spain
Issel, Department Aude	France
Le Guépelle, Saint-Witz, Val d´Oise	France
Aigues-Vives 2, Hérault	France
Jumencourt, Aisne	France
La Défense, Hauts-de-Seine	France
Swift Current Creek, southern Saskatchewan	Canada
Geiseltal near Halle (Mücheln), Sachsen-Anhalt	Germany
Bouxwiller, Bas-Rhin	France
Stena	Kazakhstan
UCMP V98009, Uinta County, Wyoming	USA
North Fork, Wapiti Valley north Shoshone River (NF-5 Wapiti III), Park County, Wyoming	USA
Cuis (Marne)	France
Grauves (Marne)	France
Mancy, Marne	France
Monthelon, Marne	France
Haunsberg near St. Pankraz, Salzburg	Austria
Andarak 2, Osh Region	Kyrgyzstan
Andarak 1, Osh Region	Kyrgyzstan
Khayzhin-Ula 2	Mongolia
Saint-Papoul NE Carcasonne, Aude	France
North Fork, Wapiti Valley north Shoshone River (NF-16 Wapiti II), Park County, Wyoming	USA
North Fork, Wapiti Valley north Shoshone River (NF-17 Wapiti II), Park County, Wyoming	USA
North Fork, Wapiti Valley north Shoshone River (NF-3 Wapiti II), Park County, Wyoming	USA
North Fork, Wapiti Valley north Shoshone River (NF-8 Wapiti II), Park County, Wyoming	USA
UCMP V70251, Patrick Draw S, Sweetwater County, Wyoming	USA
UCMP V70251, Patrick Draw S, Sweetwater County, Wyoming	USA
UCMP V74024, Turtle Graveyard General, Sweetwater County, Wyoming	USA
Tsagan-Khushu (Naran member, layer 2)	Mongolia
Kaseki-Kabe near Shiramine, Kuwajima, Hakusan City, Ishikawa Prefecture, Honshu	Japan

Locality	Country

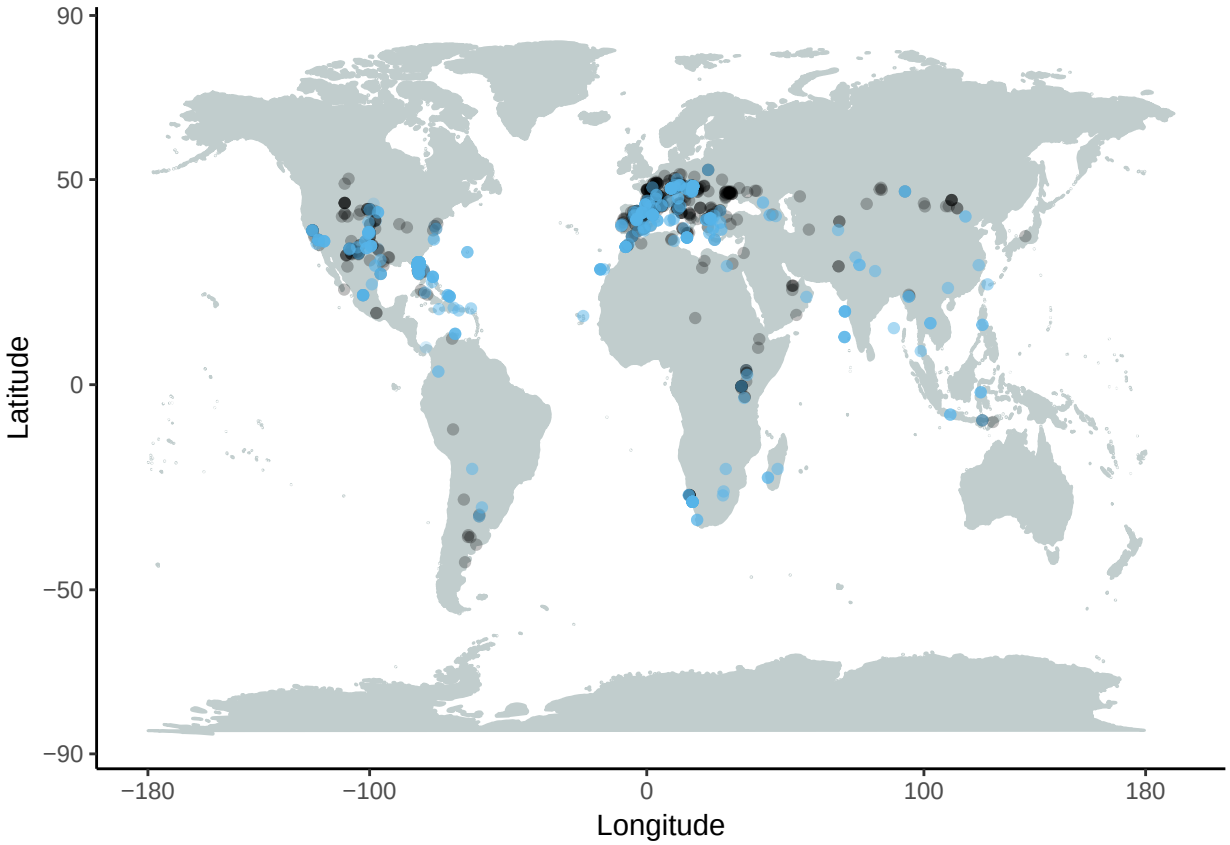


Figure 2: Map displaying all fossil occurrences of testudinids, with color indicating whether relevant literature was available (black if not) and if it was, whether body size data was available or not (yes and no, respectively).

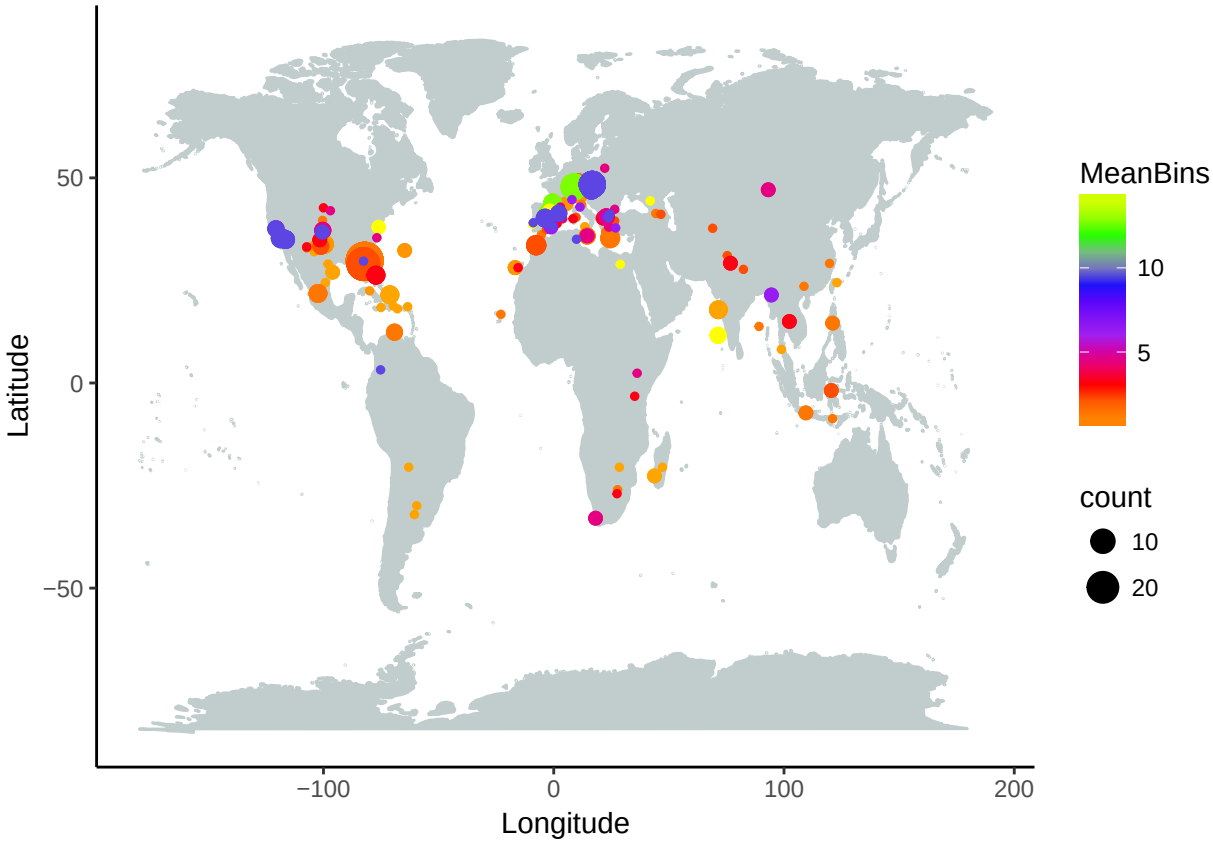


Figure 3: Map displaying all localities for which body size data for testudinids was available in the literature. Size of points denotes sample size, color denotes approximate age.

Table 3: Overview over fossil species per time bin, with sample size and mean CL.

EpochBins	Taxon	n	meanCL
Upper Pleistocene	Centrochelys robusta	1	850.0000
Upper Pleistocene	Chelonoidis denticulata	1	616.0000
Upper Pleistocene	Chelonoidis lutzae	1	830.0000
Upper Pleistocene	Chelonoidis marcanoi	4	672.2500
Upper Pleistocene	Chelonoidis monensis	1	500.0000
Upper Pleistocene	Chelonoidis sombrerensis	1	990.0000
Upper Pleistocene	Chelonoidis sp.	3	666.6667
Upper Pleistocene	Eurotestudo hermanni	1	187.0000

EpochBins	Taxon	n	meanCL
Upper Pleistocene	gen. indet.	1	813.0000
Upper Pleistocene	Geochelone sp.	2	475.0000
Upper Pleistocene	Gopherus agassizi	1	252.0000
Upper Pleistocene	Gopherus polyphemus	20	292.9700
Upper Pleistocene	Gopherus praecedens	1	360.0000
Upper Pleistocene	Hesperotestudo crassiscutata	6	435.1667
Upper Pleistocene	Hesperotestudo incisa	1	232.7600
Upper Pleistocene	Hesperotestudo sp.	2	806.5000
Upper Pleistocene	Hesperotestudo wilsoni	1	226.0000
Upper Pleistocene	Indotestudo elongata	1	270.0000
Middle Pleistocene	Centrochelys burchardi	4	722.5000
Middle Pleistocene	Chelonoidis cubensis	1	1139.0000
Middle Pleistocene	Eurotestudo aff. hermanni	2	187.0000
Middle Pleistocene	Eurotestudo hermanni	2	204.0500
Middle Pleistocene	Geochelone sp.	1	170.0000
Middle Pleistocene	Gopherus agassizi	1	445.0000
Middle Pleistocene	Gopherus laticaudatus	1	375.0000
Middle Pleistocene	Gopherus polyphemus	31	300.4316
Middle Pleistocene	Hesperotestudo bermudae	2	385.0000
Middle Pleistocene	Hesperotestudo equicomes	1	340.0000
Middle Pleistocene	Hesperotestudo sp.	2	1650.0000
Middle Pleistocene	Testudo kenitrensis	1	132.0000
Middle Pleistocene	Testudo lunellensis	4	215.4250
Lower Pleistocene	Centrochelys atlantica	1	400.0000
Lower Pleistocene	Centrochelys robusta	3	883.3333
Lower Pleistocene	Cheirogaster cf. gymnesica	1	789.0000
Lower Pleistocene	Cheirogaster sp.	1	925.0000
Lower Pleistocene	Chelonoidis sp.	3	716.6667
Lower Pleistocene	Eurotestudo globosa	1	263.0000
Lower Pleistocene	Eurotestudo hermanni	2	205.0000
Lower Pleistocene	gen. indet.	1	900.0000

EpochBins	Taxon	n	meanCL
Lower Pleistocene	Geochelone sp.	1	340.0000
Lower Pleistocene	Gopherus berlandieri	2	225.6500
Lower Pleistocene	Gopherus flavomarginatus	1	450.0000
Lower Pleistocene	Gopherus pertenuis	1	1050.0000
Lower Pleistocene	Gopherus polyphemus	3	254.4667
Lower Pleistocene	Gopherus sp.	6	233.9667
Lower Pleistocene	Hesperotestudo crassiscutata	5	285.6000
Lower Pleistocene	Hesperotestudo incisa	7	234.6286
Lower Pleistocene	Hesperotestudo mlynarskii	2	184.2500
Lower Pleistocene	Hesperotestudo sp.	1	1500.0000
Lower Pleistocene	Hesperotestudo turgida	1	230.0000
Lower Pleistocene	Megalochelys sondaari	2	909.0000
Lower Pleistocene	Megalochelys sp.	3	1130.4667
Lower Pleistocene	Psammobates antiquorum	1	107.8000
Lower Pleistocene	Testudo changshanesis	1	330.0000
Lower Pleistocene	Testudo graeca	1	195.0000
Lower Pleistocene	Testudo hermanni	2	176.5500
Lower Pleistocene	Testudo marginata	3	270.0000
Lower Pleistocene	Titanochelon gymnesica	1	1300.0000
Gelasian	Centrochelys marocana	1	2050.0000
Gelasian	Eurotestudo cf. hermanni	1	150.0000
Gelasian	Gopherus sp.	15	185.7467
Gelasian	Hesperotestudo campester	1	1000.0000
Gelasian	Hesperotestudo sp.	1	1000.0000
Gelasian	Manouria punjabiensis	1	900.0000
Gelasian	Megalochelys atlas	3	1683.3333
Gelasian	Testudo aff. kenitrensis	1	142.0000
Gelasian	Testudo oughlamensis	1	120.0000
Gelasian	Testudo ranovi	1	200.0000
Gelasian	Testudo sp.	2	192.0000
Gelasian	Testudo transcaucasia	1	150.0000

EpochBins	Taxon	n	meanCL
Gelasian	Titanochelon aff. schafferi	1	1860.0000
Gelasian	Titanochelon sp.	1	1420.0000
Piacencian	“Aldabrachelys” laetoliensis	1	1000.0000
Piacencian	Aldabrachelys ? sp.	2	1500.0000
Piacencian	Centrochelys vulcanica	1	610.0000
Piacencian	Chelonoidis alburyorum	4	442.7500
Piacencian	Gopherus canyonensis	1	885.5000
Piacencian	Hesperotestudo johnstoni	1	235.0000
Piacencian	Hesperotestudo oelrichi	1	283.8000
Piacencian	Hesperotestudo riggsi	2	180.5000
Piacencian	Hesperotestudo sp.	1	176.0000
Piacencian	Homopus fenestratus	1	90.0000
Piacencian	Megalochelys atlas	2	1600.0000
Piacencian	Testudo brevitesta	2	232.5000
Piacencian	Testudo pecorinii	1	225.0000
Piacencian	Titanochelon sp.	1	520.0000
Zanclean	Caudochelys rexroadensis	2	805.5000
Zanclean	Centrochelys robusta	3	913.3333
Zanclean	Cheirogaster gymnesica	1	739.0000
Zanclean	Ergilemys oskarkuhni	2	209.0000
Zanclean	Geochelone crassa	1	865.0000
Zanclean	Geochelone s. l.	1	1750.0000
Zanclean	Geochelone sp.	2	528.0000
Zanclean	Geochelone stromeri	2	387.5000
Zanclean	Hesperotestudo riggsi	1	195.8000
Zanclean	Testudo cf. graeca	1	185.0000
Zanclean	Testudo sp.	4	1675.0000
Zanclean	Titanochelon bacharidisi	4	1040.0000
Zanclean	Titanochelon perpiniana	1	1140.0000
Zanclean	Titanochelon schafferi	1	2500.0000
Messinian	Hesperotestudo orthopygia	2	941.0000

EpochBins	Taxon	n	meanCL
Messinian	Megalochelys atlas	2	1950.0000
Messinian	Testudo amiatae	1	140.0000
Messinian	Testudo graeca	2	183.5000
Messinian	Testudo sp.	1	200.0000
Messinian	Titanochelon bolivari	1	1150.0000
Messinian	Titanochelon schafferi	1	1850.0000
Tortonian	“Hadrianus sp.”	1	1000.0000
Tortonian	Cheirogaster richardi	1	1155.0000
Tortonian	Cheirogaster sp.	2	1355.0000
Tortonian	gen. indet.	3	660.0000
Tortonian	Geochelone hesterna	1	278.0000
Tortonian	Geochelone sp.	2	973.0000
Tortonian	Gopherus ? sp.	1	500.0000
Tortonian	Gopherus mohavetus	5	324.8000
Tortonian	Hesperotestudo alleni	1	240.9000
Tortonian	Hesperotestudo riggsi	2	159.5000
Tortonian	Hesperotestudo sp.	1	1200.0000
Tortonian	Paleotestudo sp.	3	233.6667
Tortonian	Testudo burgenlandica	2	193.5000
Tortonian	Testudo catalaunica	4	157.0000
Tortonian	Testudo cf. promarginata	5	250.0000
Tortonian	Testudo graeca	1	210.0000
Tortonian	Testudo s. s.	1	189.0000
Tortonian	Testudo sp.	7	243.1571
Tortonian	Titanochelon bolivari	1	1300.0000
Tortonian	Titanochelon cf. bolivari	1	1500.0000
Serravallian	Cheirogaster sp.	2	1250.0000
Serravallian	gen. indet.	1	270.0000
Serravallian	Gopherus ? sp.	1	500.0000
Serravallian	Paleotestudo antiqua	18	203.0556
Serravallian	Paleotestudo cf. sp.	1	270.0000

EpochBins	Taxon	n	meanCL
Serravallian	Testudo catalaunica	1	232.0000
Serravallian	Testudo steinheimensis	2	169.3500
Serravallian	Titanochelon bolivari	1	1353.0000
Langhian	Caudochelys ducateli	1	339.9000
Langhian	Chelonoidis sp.	3	553.3333
Langhian	Ergilemys sp.	1	1000.0000
Langhian	gen. indet.	1	1000.0000
Langhian	Paleotestudo antiqua	1	275.0000
Langhian	Paleotestudo cf. sp.	1	270.0000
Langhian	Testudo kalksburgensis	1	275.0000
Langhian	Testudo sp.	1	400.0000
Langhian	Titanochelon bolivari	2	1175.0000
Langhian	Titanochelon cf. bolivari	2	1450.0000
Burdigalian/Aquitanian	Caudochelys williamsi	1	334.0000
Burdigalian/Aquitanian	gen. indet.	1	270.0000
Burdigalian/Aquitanian	Geochelone sp.	2	900.0000
Burdigalian/Aquitanian	Geochelone tedwhitei	2	405.0000
Burdigalian/Aquitanian	Impregnochelys pachytectis	1	620.0000
Burdigalian/Aquitanian	Mesocherus orangeus	5	180.0000
Burdigalian/Aquitanian	Namibchersus aff. namaquensis	3	696.6667
Burdigalian/Aquitanian	Namibchersus namaquensis	6	428.8333
Burdigalian/Aquitanian	Paleotestudo cf. antiqua	1	113.0000
Burdigalian/Aquitanian	Paleotestudo sp.	1	179.3000
Burdigalian/Aquitanian	Testudo kalksburgensis	2	227.5000
Burdigalian/Aquitanian	Testudo promarginata	3	281.5667
Burdigalian/Aquitanian	Testudo rectogularis	1	213.0000
Burdigalian/Aquitanian	Titanochelon cf. perpiniana	1	1001.0000

Table 4: General overview over fossil species, with sample size and mean CL

Taxon	n	meanCL
“Aldabrachelys” laetoliensis	1	1000.0000
“Hadrianus sp.”	1	1000.0000
Aldabrachelys ? sp.	2	1500.0000
Caudochelys ducateli	1	339.9000
Caudochelys rexroadensis	2	805.5000
Caudochelys williamsi	1	334.0000
Centrochelys atlantica	1	400.0000
Centrochelys burchardi	4	722.5000
Centrochelys marocana	1	2050.0000
Centrochelys robusta	7	891.4286
Centrochelys vulcanica	1	610.0000
Cheirogaster cf. gymnesica	1	789.0000
Cheirogaster gymnesica	1	739.0000
Cheirogaster richardi	1	1155.0000
Cheirogaster sp.	5	1227.0000
Chelonoidis alburyorum	4	442.7500
Chelonoidis cubensis	1	1139.0000
Chelonoidis denticulata	1	616.0000
Chelonoidis lutzae	1	830.0000
Chelonoidis marcanoi	4	672.2500
Chelonoidis monensis	1	500.0000
Chelonoidis sombrerensis	1	990.0000
Chelonoidis sp.	9	645.5556
Ergilemys oskarkuhni	2	209.0000
Ergilemys sp.	1	1000.0000
Eurotestudo aff. hermanni	2	187.0000
Eurotestudo cf. hermanni	1	150.0000
Eurotestudo globosa	1	263.0000

Taxon	n	meanCL
Eurotestudo hermanni	5	201.0200
gen. indet.	8	654.1250
Geochelone crassa	1	865.0000
Geochelone hesterna	1	278.0000
Geochelone s. l.	1	1750.0000
Geochelone sp.	10	626.2000
Geochelone stromeri	2	387.5000
Geochelone tedwhitei	2	405.0000
Gopherus ? sp.	2	500.0000
Gopherus agassizi	2	348.5000
Gopherus berlandieri	2	225.6500
Gopherus canyonensis	1	885.5000
Gopherus flavomarginatus	1	450.0000
Gopherus laticaudatus	1	375.0000
Gopherus mohavetus	5	324.8000
Gopherus pertenuis	1	1050.0000
Gopherus polyphemus	54	295.1144
Gopherus praecedens	1	360.0000
Gopherus sp.	21	199.5238
Hesperotestudo alleni	1	240.9000
Hesperotestudo bermudae	2	385.0000
Hesperotestudo campester	1	1000.0000
Hesperotestudo crassiscutata	11	367.1818
Hesperotestudo equicomes	1	340.0000
Hesperotestudo incisa	8	234.3950
Hesperotestudo johnstoni	1	235.0000
Hesperotestudo mlynarskii	2	184.2500
Hesperotestudo oelrichi	1	283.8000
Hesperotestudo orthopygia	2	941.0000
Hesperotestudo riggsi	5	175.1600
Hesperotestudo sp.	8	1098.6250

Taxon	n	meanCL
Hesperotestudo turgida	1	230.0000
Hesperotestudo wilsoni	1	226.0000
Homopus fenestratus	1	90.0000
Impregnochelys pachytectis	1	620.0000
Indotestudo elongata	1	270.0000
Manouria punjabiensis	1	900.0000
Megalochelys atlas	7	1735.7143
Megalochelys sondaari	2	909.0000
Megalochelys sp.	3	1130.4667
Mesocherus orangeus	5	180.0000
Namibchersus aff. namaquensis	3	696.6667
Namibchersus namaquensis	6	428.8333
Paleotestudo antiqua	19	206.8421
Paleotestudo cf. antiqua	1	113.0000
Paleotestudo cf. sp.	2	270.0000
Paleotestudo sp.	4	220.0750
Psammobates antiquorum	1	107.8000
Testudo aff. kenitrensis	1	142.0000
Testudo amiatae	1	140.0000
Testudo brevitesta	2	232.5000
Testudo burgenlandica	2	193.5000
Testudo catalaunica	5	172.0000
Testudo cf. graeca	1	185.0000
Testudo cf. promarginata	5	250.0000
Testudo changshanesis	1	330.0000
Testudo graeca	4	193.0000
Testudo hermanni	2	176.5500
Testudo kalksburgensis	3	243.3333
Testudo kenitrensis	1	132.0000
Testudo lunellensis	4	215.4250
Testudo marginata	3	270.0000

Taxon	n	meanCL
Testudo oughlamensis	1	120.0000
Testudo pecorinii	1	225.0000
Testudo promarginata	3	281.5667
Testudo ranovi	1	200.0000
Testudo rectogularis	1	213.0000
Testudo s. s.	1	189.0000
Testudo sp.	15	625.7400
Testudo steinheimensis	2	169.3500
Testudo transcaucasia	1	150.0000
Titanochelon aff. schafferi	1	1860.0000
Titanochelon bacharidisi	4	1040.0000
Titanochelon bolivari	5	1230.6000
Titanochelon cf. bolivari	3	1466.6667
Titanochelon cf. perpiniana	1	1001.0000
Titanochelon gymnesica	1	1300.0000
Titanochelon perpiniana	1	1140.0000
Titanochelon schafferi	2	2175.0000
Titanochelon sp.	2	970.0000

Table 5: Overview over genera (modern and fossil) per time bin, with sample sizes and mean CL.

EpochBins	Genus	n	meanCL
Modern	Aldabrachelys	12	974.5833
Modern	Astrochelys	14	366.2143
Modern	Centrochelys	3	493.3333
Modern	Chelonoidis	45	531.5178
Modern	Chersina	15	176.2667
Modern	Cylindraspis	5	724.0000
Modern	Geochelone	8	252.1250
Modern	Gopherus	23	302.4839

EpochBins	Genus	n	meanCL
Modern	Hesperotestudo	1	250.0000
Modern	Homopus	7	139.2857
Modern	Indotestudo	16	242.9875
Modern	Kinixys	15	213.0667
Modern	Malacochersus	2	166.5000
Modern	Manouria	9	380.7778
Modern	Psammobates	17	113.4118
Modern	Pyxis	16	124.1875
Modern	Stigmochelys	6	405.3333
Modern	Testudo	39	197.5436
Upper Pleistocene	Centrochelys	1	850.0000
Upper Pleistocene	Chelonoidis	11	693.1818
Upper Pleistocene	Eurotestudo	1	187.0000
Upper Pleistocene	gen.	1	813.0000
Upper Pleistocene	Geochelone	2	475.0000
Upper Pleistocene	Gopherus	22	294.1545
Upper Pleistocene	Hesperotestudo	10	468.2760
Upper Pleistocene	Indotestudo	1	270.0000
Middle Pleistocene	Centrochelys	4	722.5000
Middle Pleistocene	Chelonoidis	1	1139.0000
Middle Pleistocene	Eurotestudo	4	195.5250
Middle Pleistocene	Geochelone	1	170.0000
Middle Pleistocene	Gopherus	33	307.0721
Middle Pleistocene	Hesperotestudo	5	882.0000
Middle Pleistocene	Testudo	5	198.7400
Lower Pleistocene	Centrochelys	4	762.5000
Lower Pleistocene	Cheirogaster	2	857.0000
Lower Pleistocene	Chelonoidis	3	716.6667
Lower Pleistocene	Eurotestudo	4	201.5250
Lower Pleistocene	gen.	1	900.0000
Lower Pleistocene	Geochelone	1	340.0000

EpochBins	Genus	n	meanCL
Lower Pleistocene	Gopherus	13	316.8077
Lower Pleistocene	Hesperotestudo	16	323.0562
Lower Pleistocene	Megalochelys	5	1041.8800
Lower Pleistocene	Psammobates	1	107.8000
Lower Pleistocene	Testudo	6	259.1667
Lower Pleistocene	Titanochelon	1	1300.0000
Gelasian	Centrochelys	1	2050.0000
Gelasian	Eurotestudo	1	150.0000
Gelasian	Gopherus	15	185.7467
Gelasian	Hesperotestudo	2	1000.0000
Gelasian	Manouria	1	900.0000
Gelasian	Megalochelys	3	1683.3333
Gelasian	Testudo	6	166.0000
Gelasian	Titanochelon	2	1640.0000
Piacencian	Aldabrachelys	3	1333.3333
Piacencian	Centrochelys	1	610.0000
Piacencian	Chelonoidis	4	442.7500
Piacencian	Gopherus	1	885.5000
Piacencian	Hesperotestudo	5	211.1600
Piacencian	Homopus	1	90.0000
Piacencian	Megalochelys	2	1600.0000
Piacencian	Testudo	3	230.0000
Piacencian	Titanochelon	1	520.0000
Zanclean	Caudochelys	2	805.5000
Zanclean	Centrochelys	3	913.3333
Zanclean	Cheirogaster	1	739.0000
Zanclean	Ergilemys	2	209.0000
Zanclean	Geochelone	6	741.0000
Zanclean	Hesperotestudo	1	195.8000
Zanclean	Testudo	5	1377.0000
Zanclean	Titanochelon	6	1300.0000

EpochBins	Genus	n	meanCL
Messinian	Hesperotestudo	2	941.0000
Messinian	Megalochelys	2	1950.0000
Messinian	Testudo	4	176.7500
Messinian	Titanochelon	2	1500.0000
Tortonian	“Hadrianus”	1	1000.0000
Tortonian	Cheirogaster	3	1288.3333
Tortonian	gen.	3	660.0000
Tortonian	Geochelone	3	741.3333
Tortonian	Gopherus	6	354.0000
Tortonian	Hesperotestudo	4	439.9750
Tortonian	Paleotestudo	3	233.6667
Tortonian	Testudo	20	218.3050
Tortonian	Titanochelon	2	1400.0000
Serravallian	Cheirogaster	2	1250.0000
Serravallian	gen.	1	270.0000
Serravallian	Gopherus	1	500.0000
Serravallian	Paleotestudo	19	206.5789
Serravallian	Testudo	3	190.2333
Serravallian	Titanochelon	1	1353.0000
Langhian	Caudochelys	1	339.9000
Langhian	Chelonoidis	3	553.3333
Langhian	Ergilemys	1	1000.0000
Langhian	gen.	1	1000.0000
Langhian	Paleotestudo	2	272.5000
Langhian	Testudo	2	337.5000
Langhian	Titanochelon	4	1312.5000
Burdigalian/Aquitanian	Caudochelys	1	334.0000
Burdigalian/Aquitanian	gen.	1	270.0000
Burdigalian/Aquitanian	Geochelone	4	652.5000
Burdigalian/Aquitanian	Impregnochelys	1	620.0000
Burdigalian/Aquitanian	Mesocherus	5	180.0000

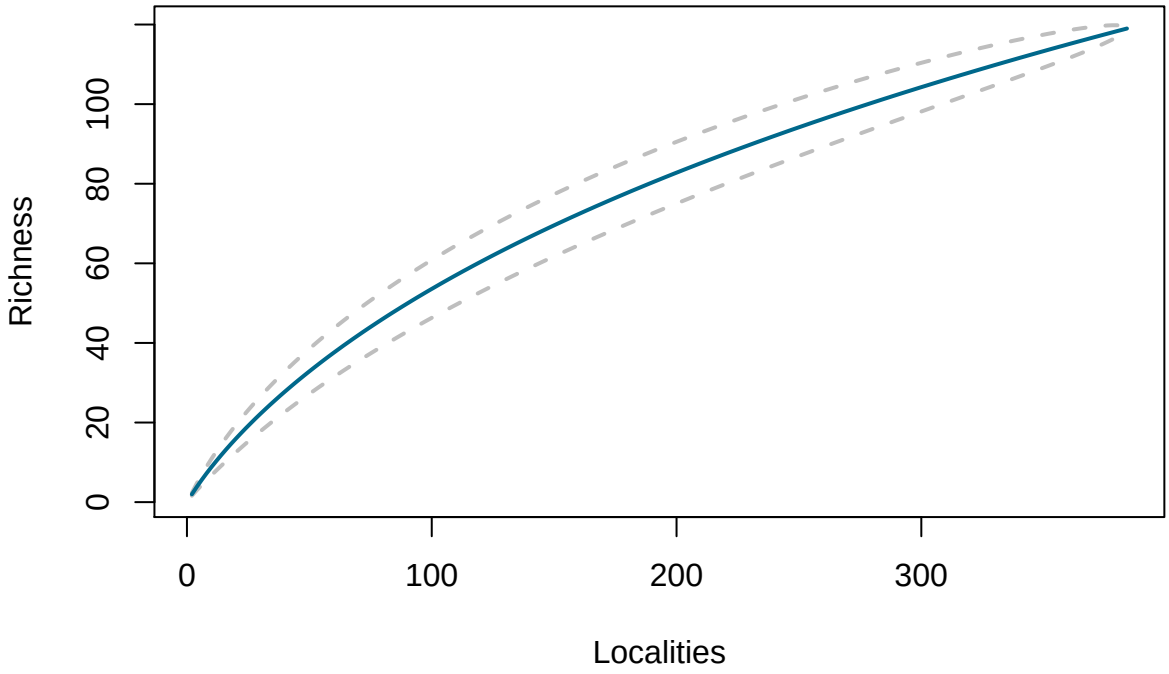
EpochBins	Genus	n	meanCL
Burdigalian/Aquitanian	Namibchersus	9	518.1111
Burdigalian/Aquitanian	Paleotestudo	2	146.1500
Burdigalian/Aquitanian	Testudo	6	252.1167
Burdigalian/Aquitanian	Titanochelon	1	1001.0000

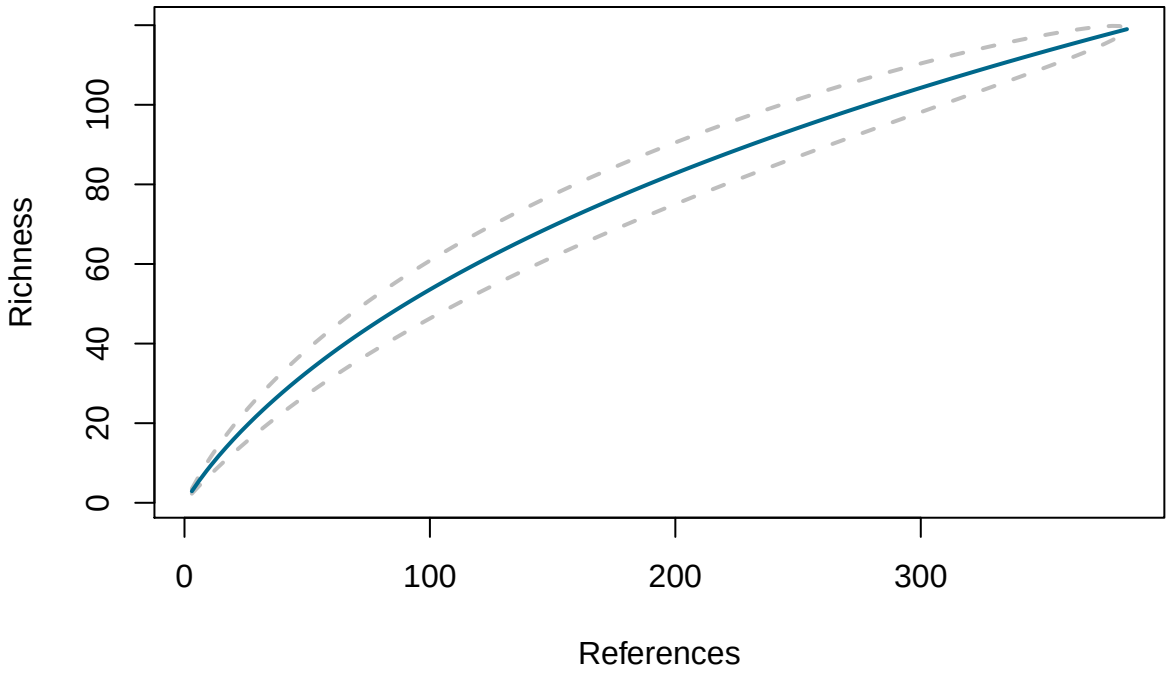
Table 6: General overview over genera, with sample sizes and mean CL.

Genus	n	meanCL
“Hadrianus”	1	1000.0000
Aldabrachelys	15	1046.3333
Astrochelys	14	366.2143
Caudochelys	4	571.2250
Centrochelys	17	804.1176
Cheirogaster	8	1102.2500
Chelonoidis	67	571.0940
Chersina	15	176.2667
Cylindraspis	5	724.0000
Ergilemys	3	472.6667
Eurotestudo	10	192.5200
gen.	8	654.1250
Geochelone	25	510.2800
Gopherus	114	298.0361
Hesperotestudo	46	465.3296
Homopus	8	133.1250
Impregnochelys	1	620.0000
Indotestudo	17	244.5765
Kinixys	15	213.0667
Malacochersus	2	166.5000
Manouria	10	432.7000
Megalochelys	12	1446.6167

Genus	n	meanCL
Mesocherus	5	180.0000
Namibchersus	9	518.1111
Paleotestudo	26	210.1269
Psammobates	18	113.1000
Pyxis	16	124.1875
Stigmochelys	6	405.3333
Testudo	99	269.2465
Titanochelon	20	1315.2000

Sampling Accumulation Curves





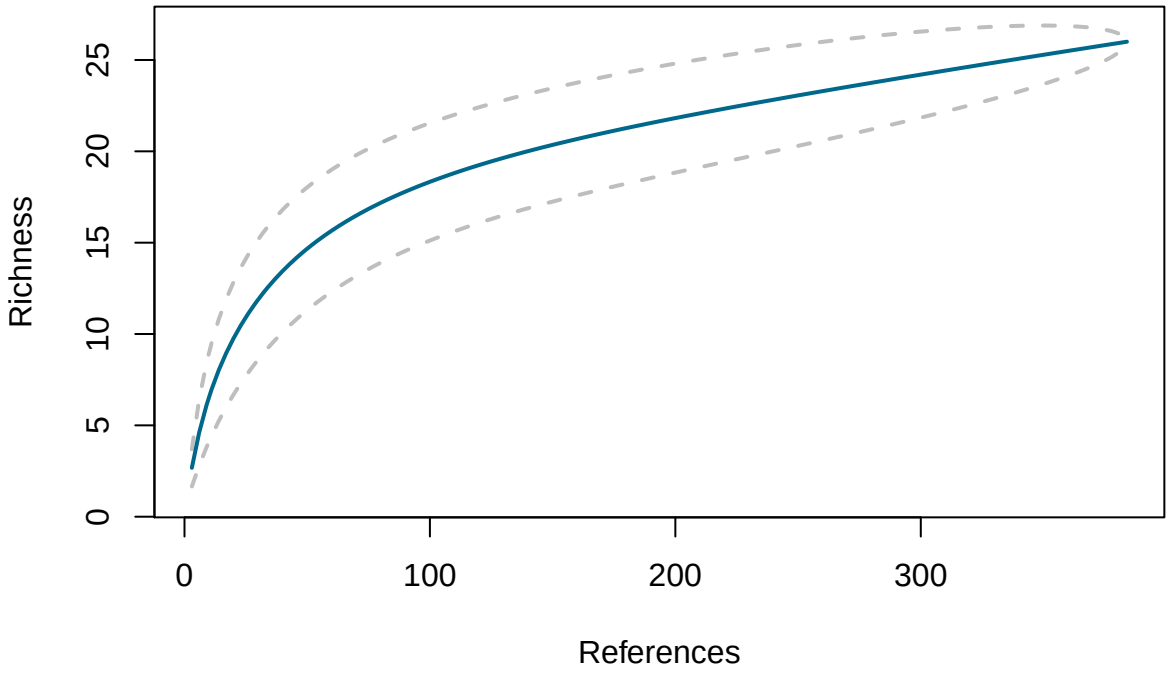


Figure 4: Sampling Accumulation Curve of fossil genera per reference

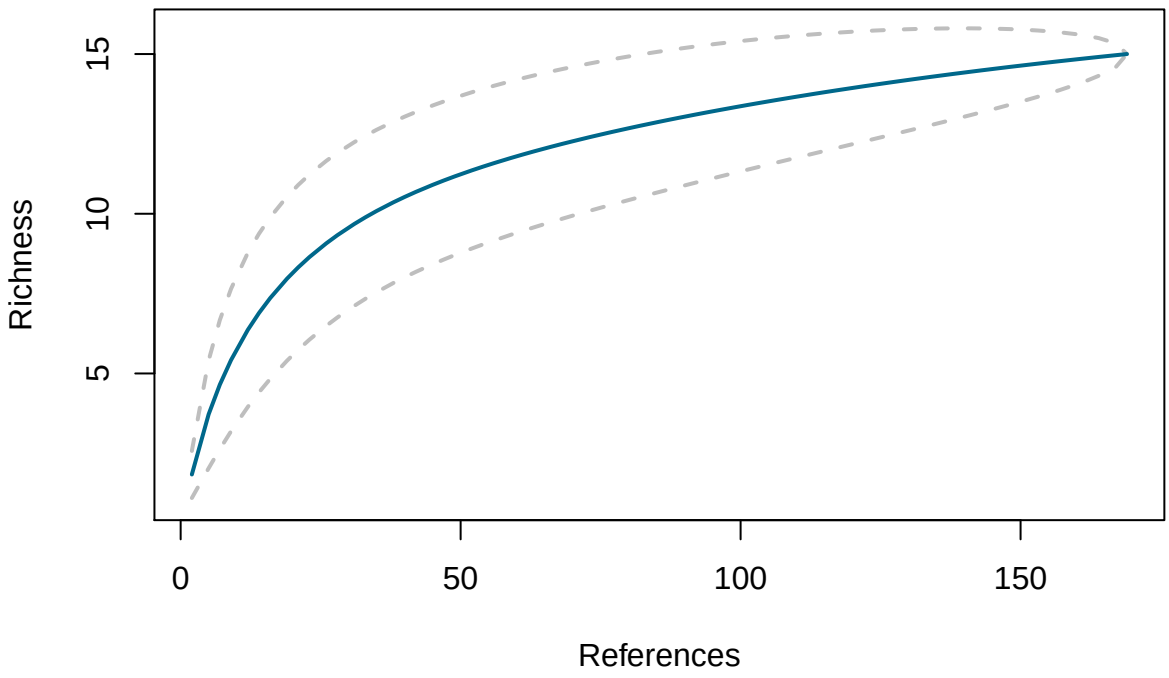


Figure 5: Sampling Accumulation Curve of fossil genera per reference, Eurasia

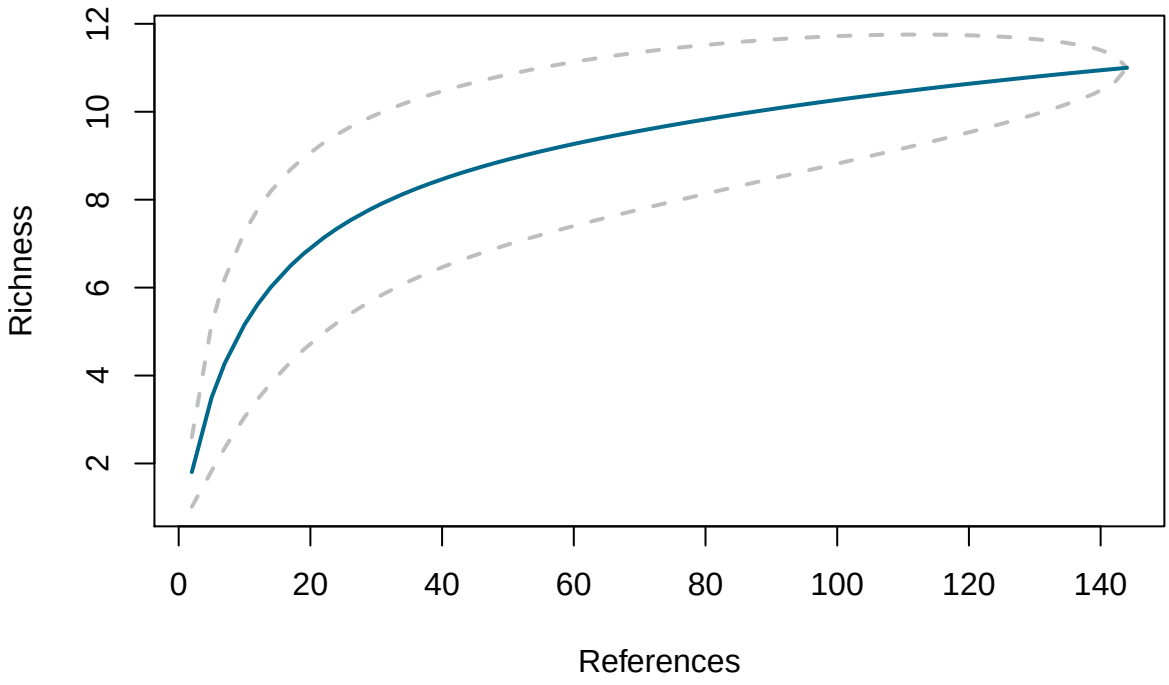


Figure 6: Sampling Accumulation Curve of fossil genera per reference, Europe

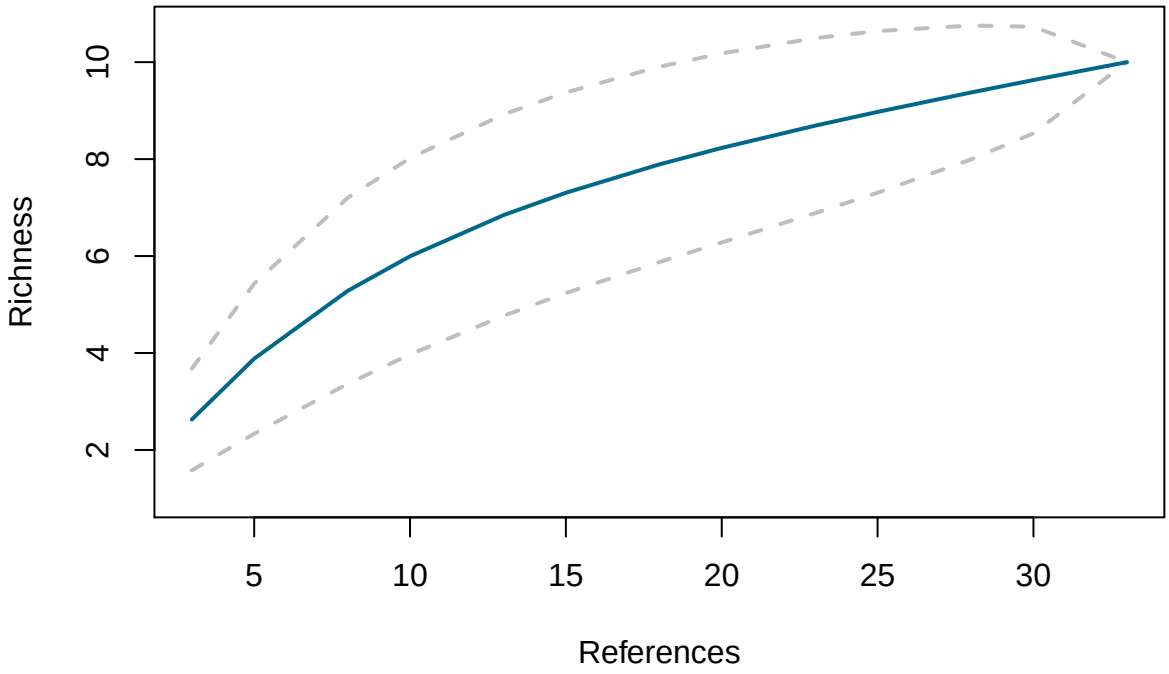


Figure 7: Sampling Accumulation Curve of fossil genera per reference, Africa

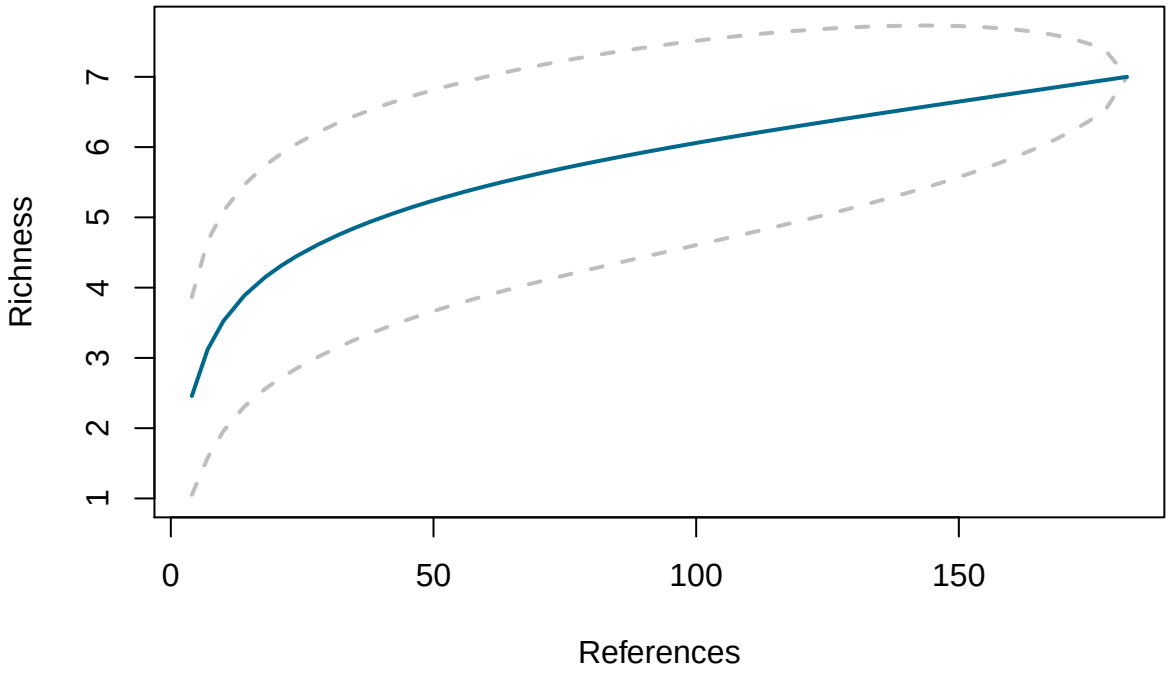


Figure 8: Sampling Accumulation Curve of fossil genera per reference, America

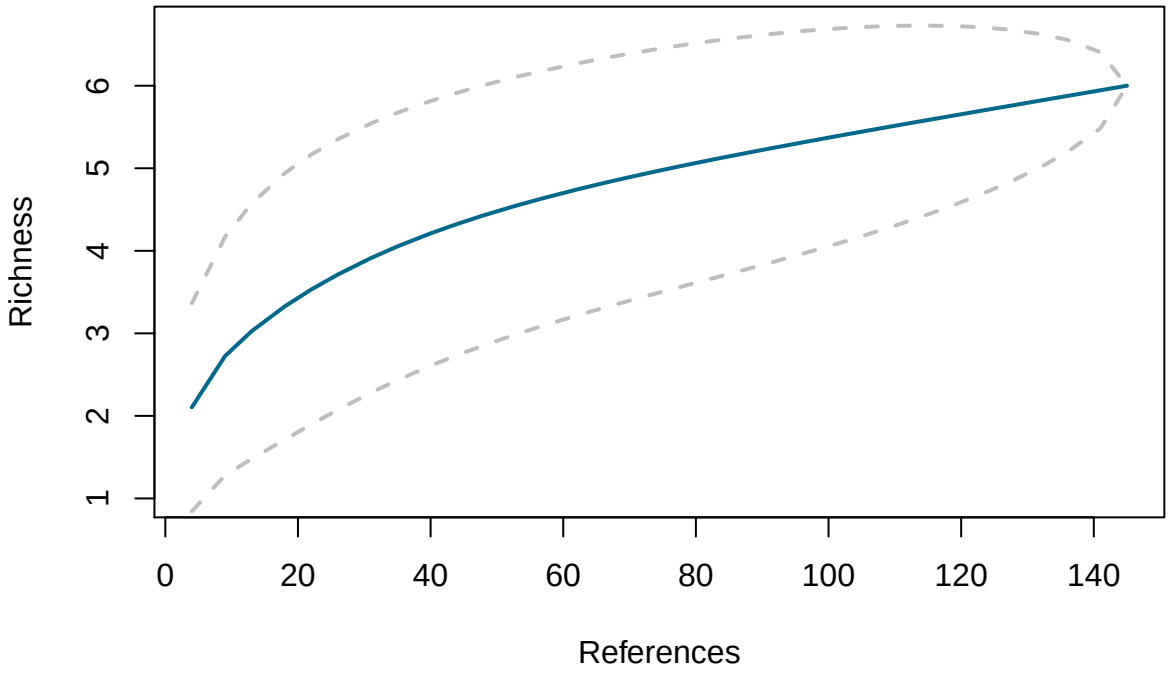


Figure 9: Sampling Accumulation Curve of fossil genera per reference, N-America

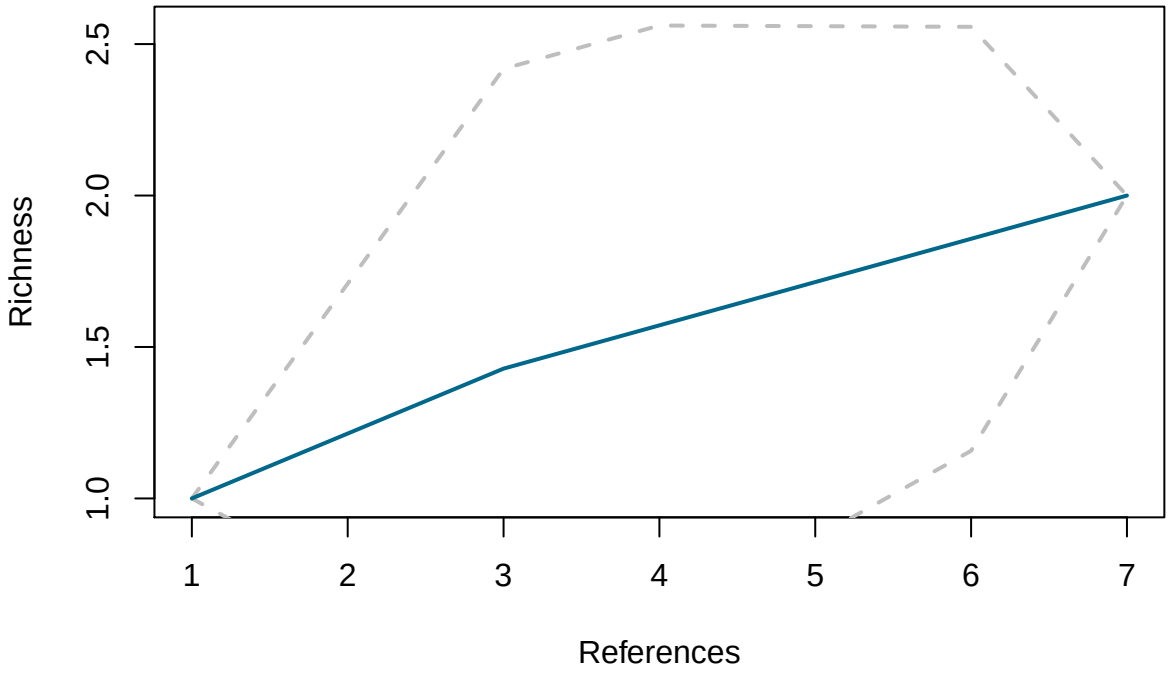


Figure 10: Sampling Accumulation Curve of fossil genera per reference, S-America

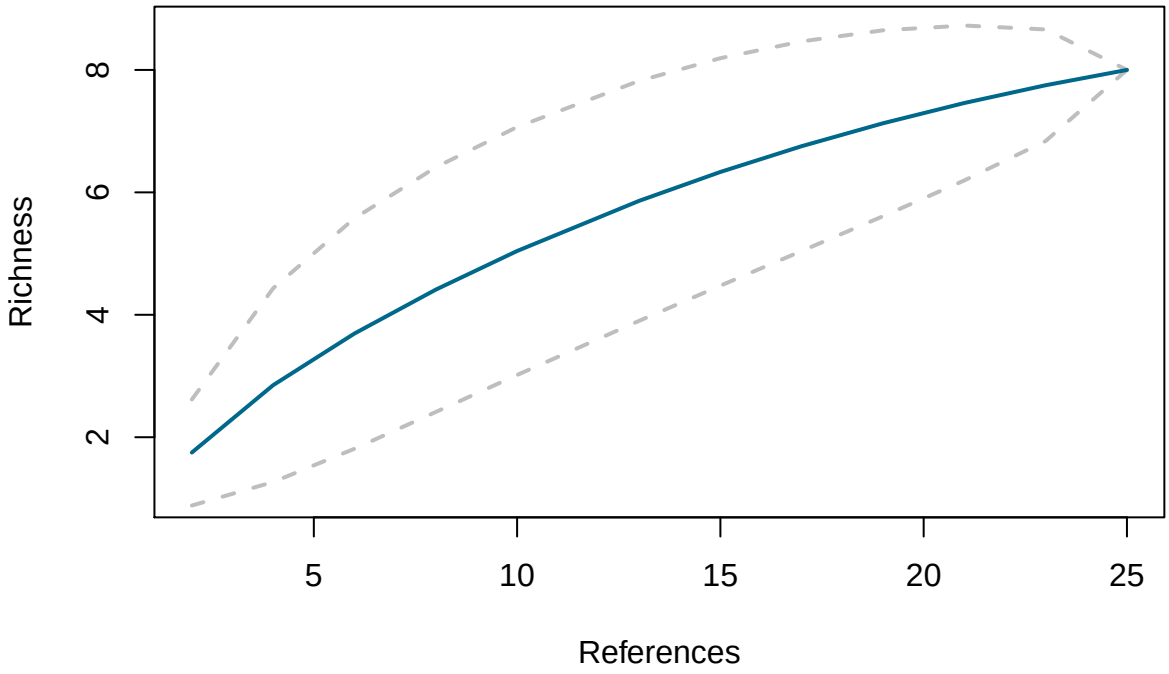
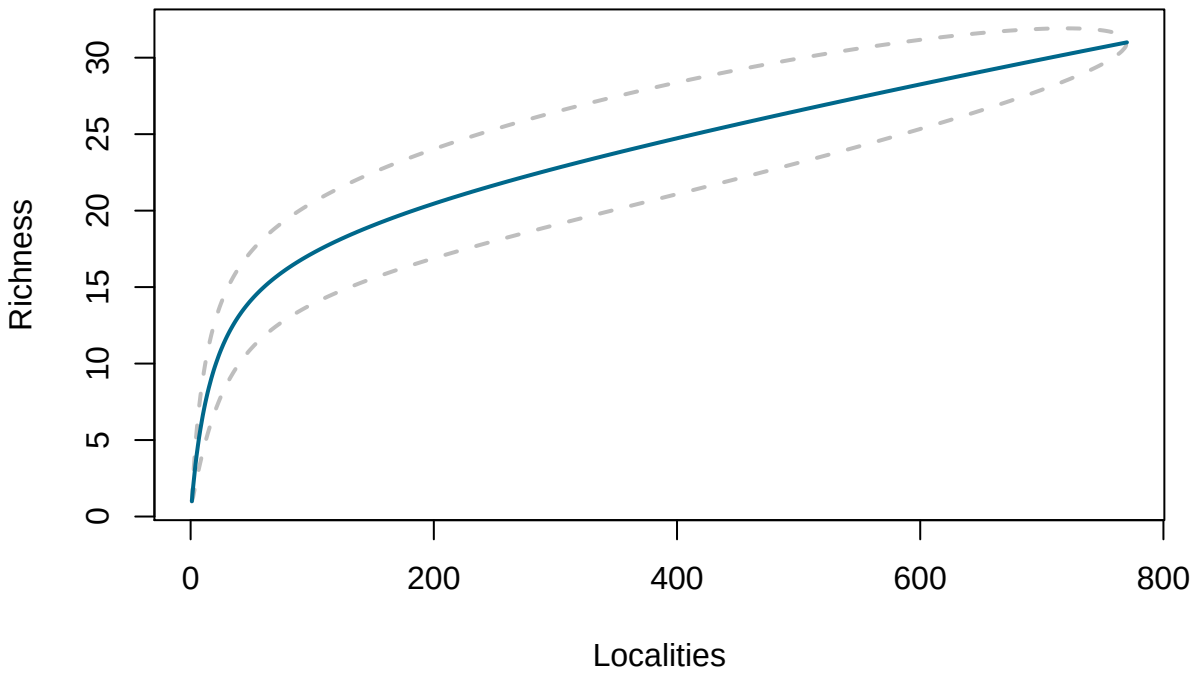


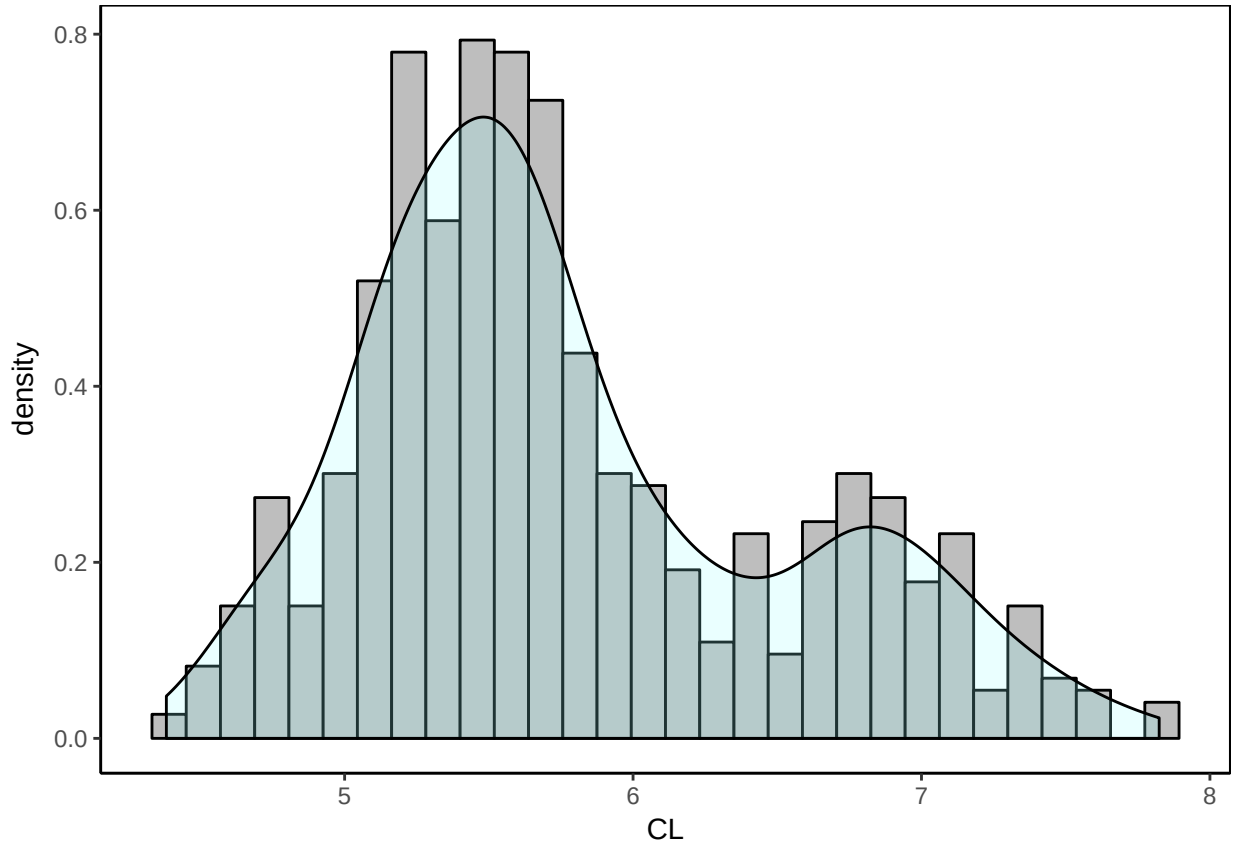
Figure 11: Sampling Accumulation Curve of fossil genera per reference, Asia

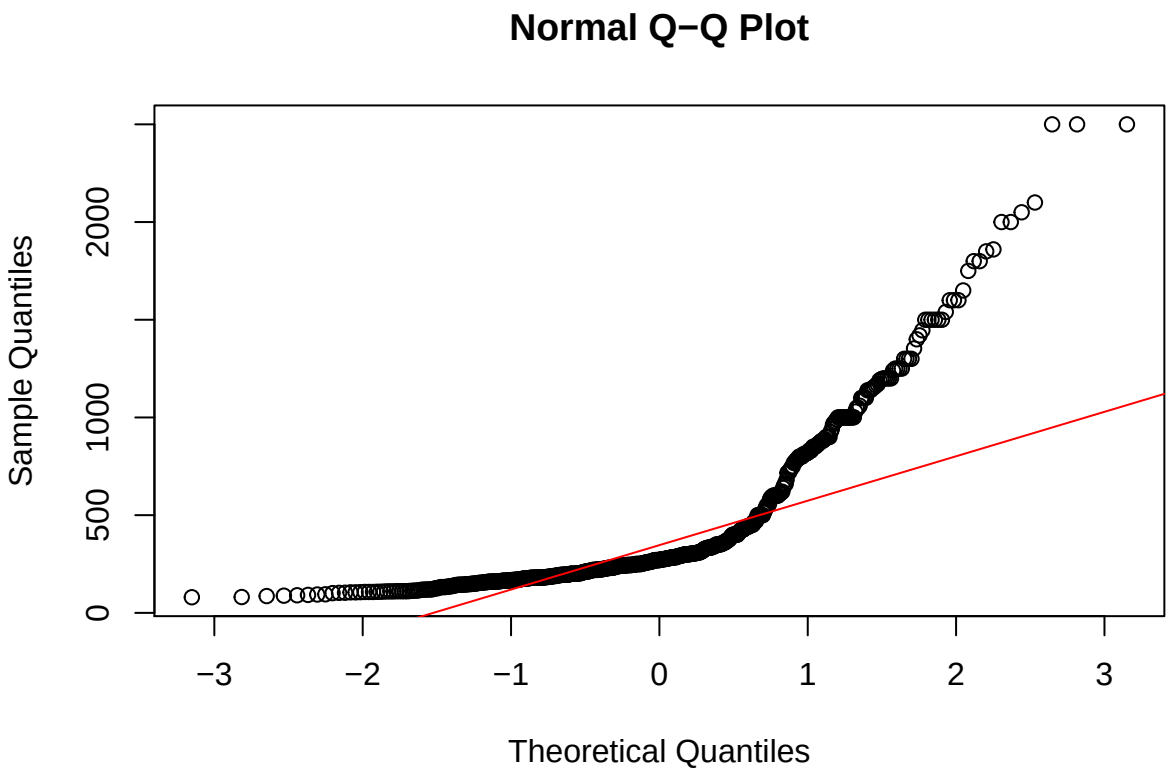

Richness
0
5
10
15
20
25
30
0
200
400
600
800
Localities

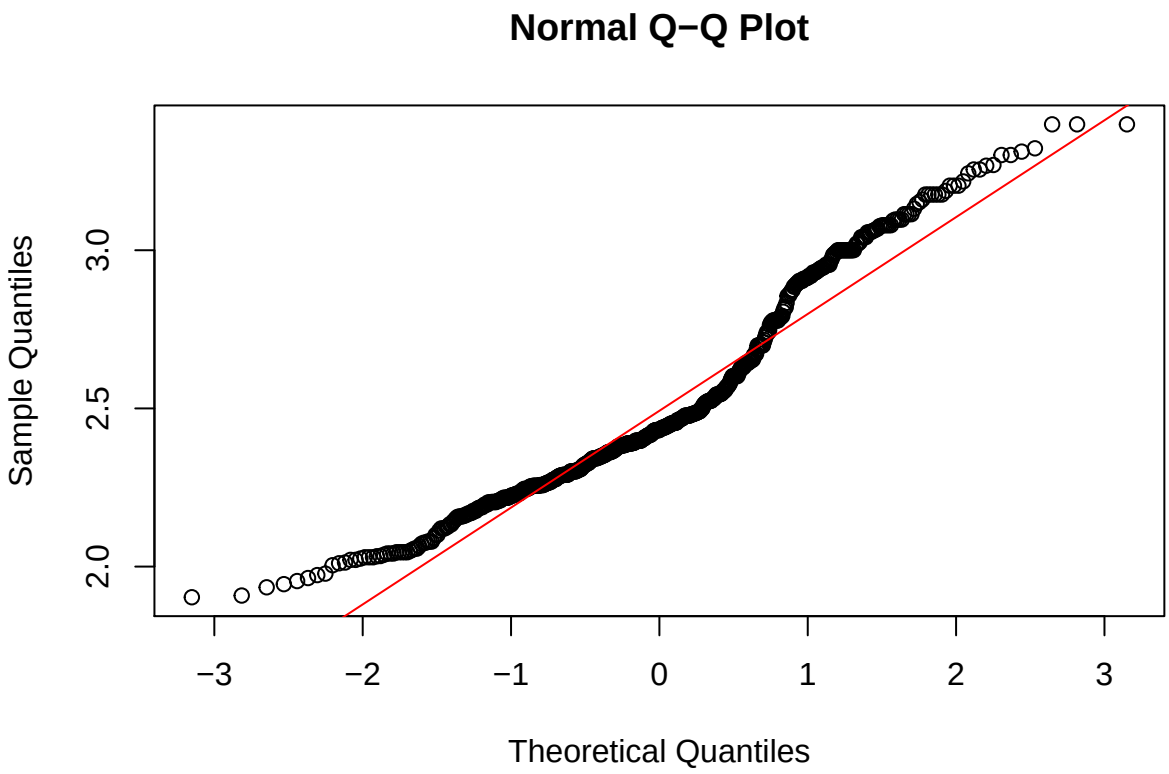
Histograms

all

```
## `stat_bin()` using `bins = 30`. Pick better value with `binwidth`.
```




Normal Q−Q Plot
Sample Quantiles
0
500
1000
2000
−3
−2
−1
0
1
2
3
Theoretical Quantiles


Normal Q−Q Plot
Sample Quantiles
2.0
2.5
3.0
−3
−2
−1
0
1
2
3
Theoretical Quantiles

per time bin

```
## `stat_bin()` using `bins = 30`. Pick better value with `binwidth`.
```

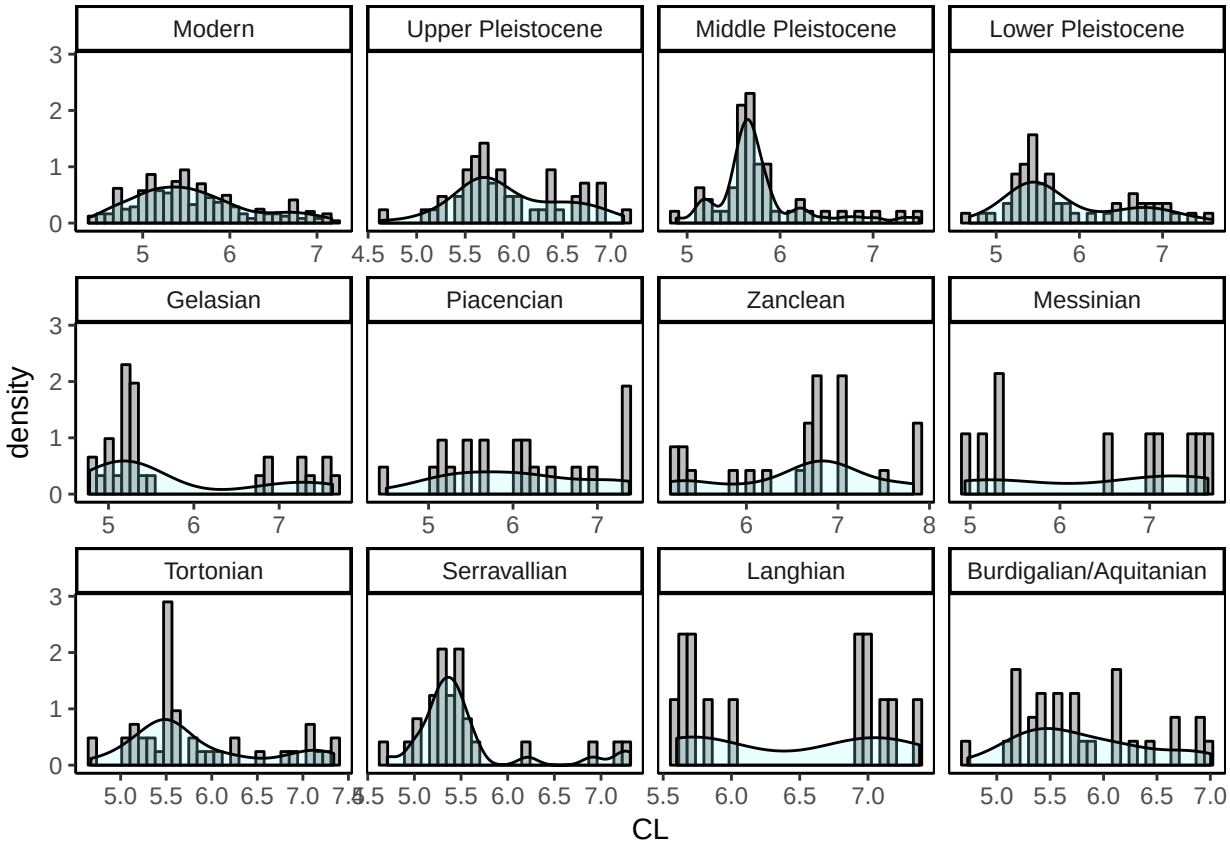


Figure 12: Distribution of body size data per time bin, logtransformed.

modern vs. fossil

```
## `stat_bin()` using `bins = 30`. Pick better value with `binwidth`.
```

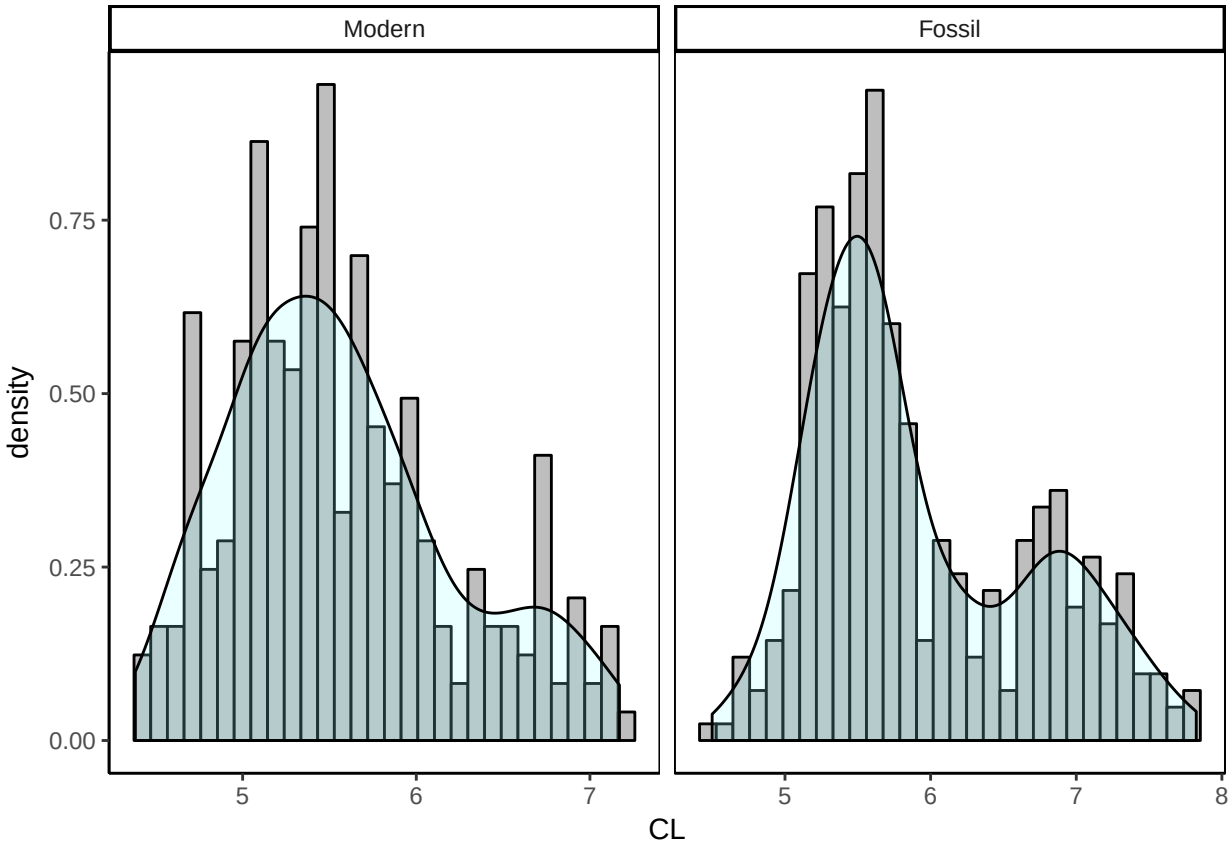


Figure 13: Distribution of body size data modern vs. fossil, logtransformed.

modern vs. fossil, continental vs. insular

```
## `stat_bin()` using `bins = 30`. Pick better value with `binwidth`.
```

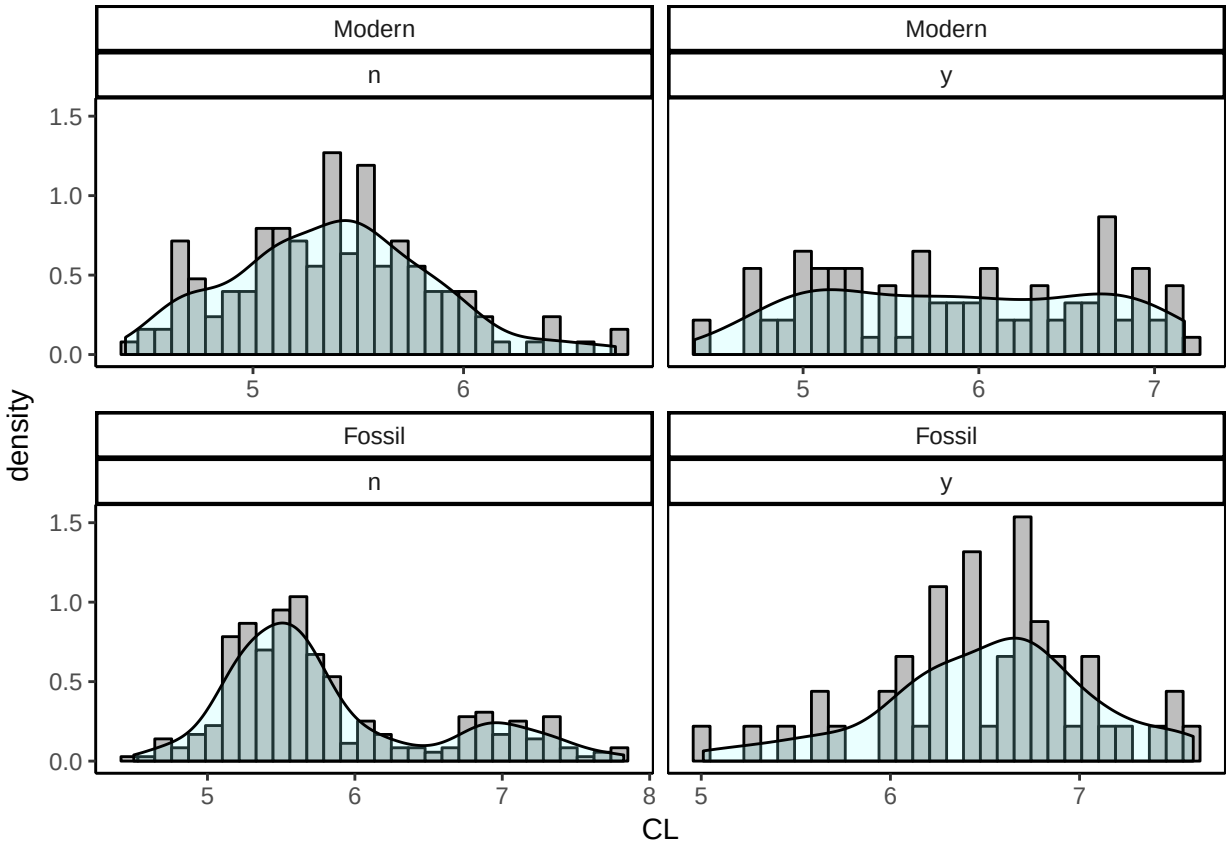


Figure 14: Distribution of body size data modern vs. fossil, continental vs. insular logtransformed.

continental vs. insular

```
## `stat_bin()` using `bins = 30`. Pick better value with `binwidth`.
```

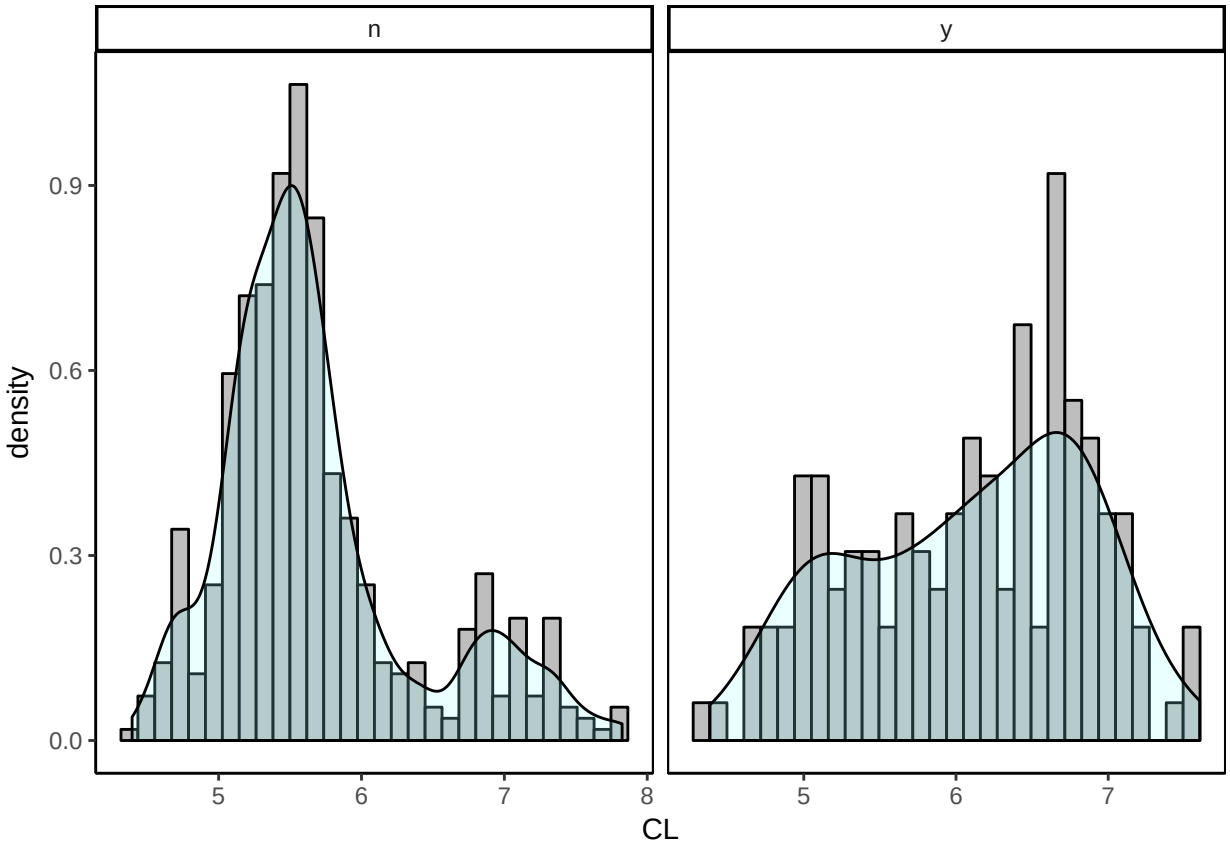


Figure 15: Distribution of body site data of continental (n) and insular(y) species, logtransformed.

continents

```
## `stat_bin()` using `bins = 30`. Pick better value with `binwidth`.
```

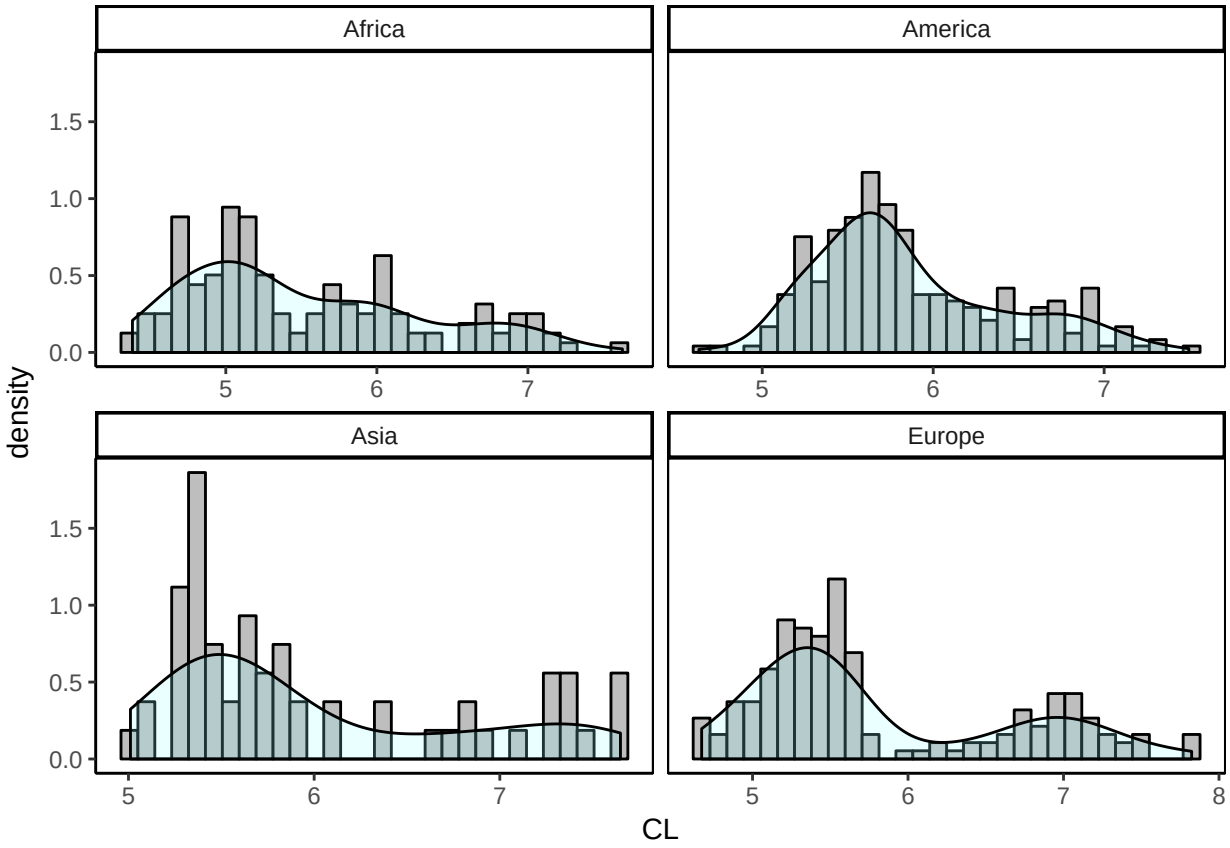


Figure 16: Distribution of body site data per continent, logtransformed.

Descriptive statistics

Table 7: General statistics of body size data: all, per time bin, insular and continental, per continent (all referring to CL: min, max, variance, mean, logmean, median, logmedian, skewness, logskewness, kurosis, logkurtosis

nCL	min	max	var	mean	logm	med	logmed	skew	logsk	kurt	logku	Variable
616	80.00	2500	164537.80	437.2	2.5	270.5	2.4	2.14	0.69	8.00	2.73	all
253	80.00	1300	67485.50	330.3	2.4	242.0	2.4	1.83	0.58	5.87	2.69	Modern
49	102.44	1250	69690.66	445.9	2.6	334.7	2.5	1.20	0.24	3.61	2.56	Upper Pleistocene
53	132.00	1800	97910.83	387.1	2.5	292.9	2.5	3.03	1.52	12.24	5.55	Middle Pleistocene
57	107.80	2000	161948.82	463.5	2.5	263.0	2.4	1.74	0.73	5.76	2.40	Lower Pleistocene
31	118.90	2050	411224.51	555.2	2.5	194.9	2.3	1.31	0.93	3.12	2.11	Gelasian
21	90.00	1600	270535.82	610.6	2.6	428.0	2.6	1.00	0.14	2.50	1.99	Piacencian
26	176.00	2500	476162.71	955.2	2.9	857.5	2.9	1.11	-0.40	3.56	2.30	Zanclean
10	140.00	2100	602611.21	948.9	2.8	916.0	2.9	0.26	-0.22	1.49	1.29	Messinian
45	107.00	1540	175470.12	462.7	2.5	250.0	2.4	1.49	0.81	3.74	2.54	Tortonian
27	111.00	1500	126060.40	337.7	2.4	220.0	2.3	2.49	1.77	7.77	5.30	Serravallian
14	270.00	1600	230451.33	747.9	2.8	700.0	2.8	0.30	0.03	1.55	1.18	Langhian
30	113.00	1100	76288.76	406.8	2.5	302.4	2.5	1.27	0.45	3.45	2.26	Burdigalian/Aquitanian
253	80.00	1300	67485.50	330.3	2.4	242.0	2.4	1.83	0.58	5.87	2.69	Modern
363	90.00	2500	219004.66	511.7	2.6	285.6	2.5	1.83	0.68	6.11	2.42	Fossil
469	81.00	2500	157808.79	392.9	2.5	250.0	2.4	2.65	1.07	10.57	3.74	continental
147	80.00	2000	160834.35	578.5	2.6	500.0	2.7	1.02	-0.27	3.95	2.05	insular
157	81.00	830	17009.02	244.0	2.3	221.0	2.3	1.92	0.29	8.09	2.98	modern-con
96	80.00	1300	118641.09	471.5	2.6	353.0	2.5	0.82	0.01	2.47	1.77	modern-ins
312	90.00	2500	212116.79	467.9	2.5	270.0	2.4	2.11	0.96	7.25	2.96	fossil-con
51	150.00	2000	180825.40	780.0	2.8	750.0	2.9	1.11	-0.40	4.02	3.18	fossil-ins
142	80.00	2050	112417.26	347.7	2.4	193.5	2.3	2.10	0.68	7.97	2.48	Africa
242	102.44	1800	82209.71	415.0	2.5	302.2	2.5	1.92	0.75	6.79	2.91	America
59	150.00	2100	323123.20	585.5	2.6	280.0	2.4	1.43	0.85	3.61	2.24	Asia
173	107.00	2500	254222.84	491.2	2.5	245.0	2.4	1.86	0.81	6.30	2.34	Europe

nCL	min	max	var	mean	logm	med	logmed	skew	logsk	kurt	logku	Variable

Boxplots

genera per time bins

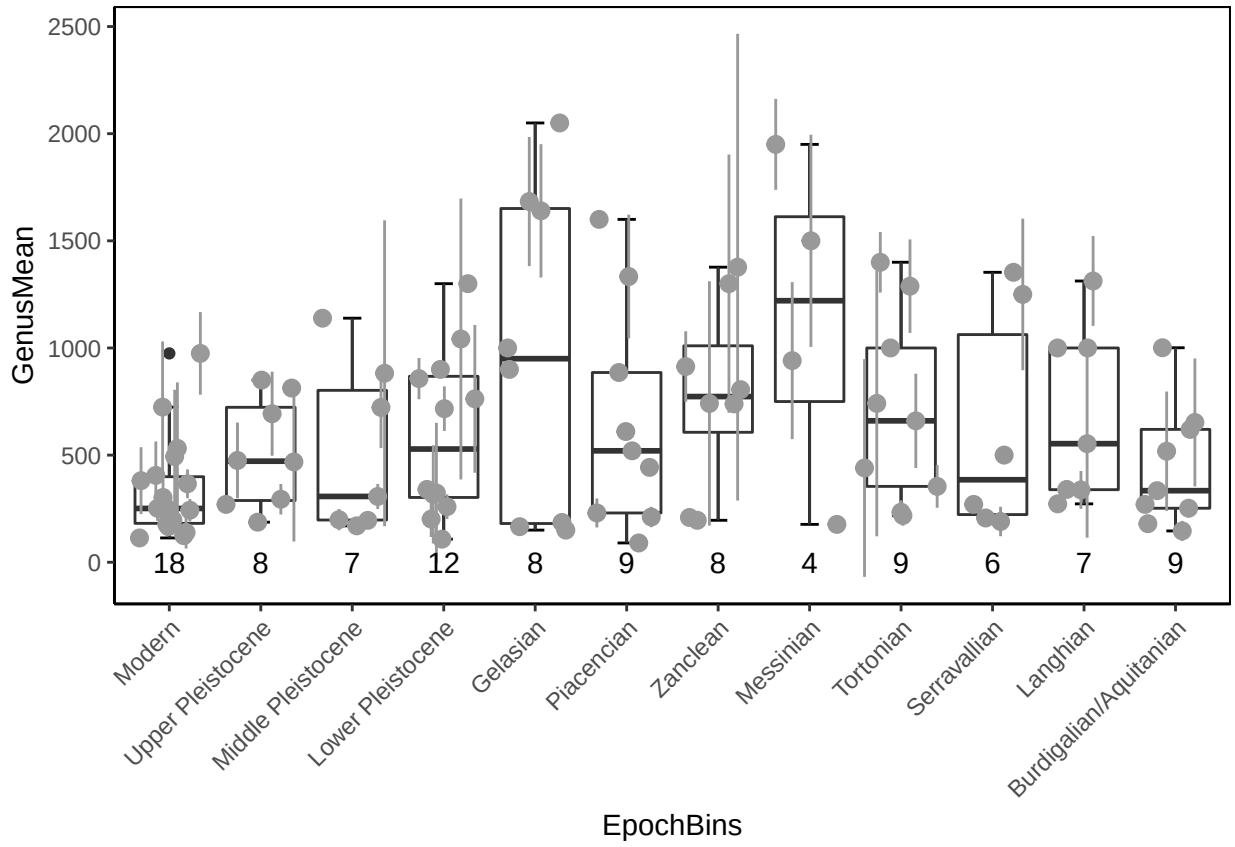


Figure 17: Boxplots of mean CL per time bin, including mean and sd CL for each genus (as pointrange).

```
## [1] "EpochBins" "Genus"     "GenusMean" "GenusSD"   "n"

## Multiple comparison test after Kruskal-Wallis

## p.value: 0.05

## Comparisons

##                                          obs.dif critical.dif

## Modern-Upper Pleistocene                16.7916667     43.58276

## Modern-Middle Pleistocene               11.5238095     45.68715

## Modern-Lower Pleistocene                20.7500000     38.22461

## Modern-Gelasian                         28.6666667     43.58276

## Modern-Piacencian                       21.0000000     41.87296
```

```
## Modern-Zanclean                          31.3541667     43.58276
## Modern-Messinian                         40.1666667     56.69626
## Modern-Tortonian                         28.2777778     41.87296
## Modern-Serravallian                      18.5000000     48.35073
## Modern-Langhian                          30.2380952     45.68715
## Modern-Burdigalian/Aquitanian             9.8888889     41.87296
## Upper Pleistocene-Middle Pleistocene      5.2678571     53.08367
## Upper Pleistocene-Lower Pleistocene       3.9583333     46.81540
## Upper Pleistocene-Gelasian               11.8750000     51.28370
## Upper Pleistocene-Piacencian              4.2083333     49.83880
## Upper Pleistocene-Zanclean               14.5625000     51.28370
## Upper Pleistocene-Messinian              23.3750000     62.80945
## Upper Pleistocene-Tortonian              11.4861111     49.83880
## Upper Pleistocene-Serravallian            1.7083333     55.39273
## Upper Pleistocene-Langhian               13.4464286     53.08367
## Upper Pleistocene-Burdigalian/Aquitanian  6.9027778     49.83880
## Middle Pleistocene-Lower Pleistocene      9.2261905     48.78053
## Middle Pleistocene-Gelasian              17.1428571     53.08367
## Middle Pleistocene-Piacencian             9.4761905     51.68911
## Middle Pleistocene-Zanclean              19.8303571     53.08367
## Middle Pleistocene-Messinian             28.6428571     64.28752
## Middle Pleistocene-Tortonian             16.7539683     51.68911
## Middle Pleistocene-Serravallian           6.9761905     57.06323
## Middle Pleistocene-Langhian              18.7142857     54.82458
## Middle Pleistocene-Burdigalian/Aquitanian 1.6349206     51.68911
## Lower Pleistocene-Gelasian                7.9166667     46.81540
## Lower Pleistocene-Piacencian              0.2500000     45.22797
## Lower Pleistocene-Zanclean               10.6041667     46.81540
## Lower Pleistocene-Messinian              19.4166667     59.21731
## Lower Pleistocene-Tortonian               7.5277778     45.22797
## Lower Pleistocene-Serravallian            2.2500000     51.28370
## Lower Pleistocene-Langhian                9.4880952     48.78053
## Lower Pleistocene-Burdigalian/Aquitanian 10.8611111     45.22797
```

```
## Gelasian-Piacencian                      7.6666667     49.83880
## Gelasian-Zanclean                        2.6875000     51.28370
## Gelasian-Messinian                      11.5000000     62.80945
## Gelasian-Tortonian                       0.3888889     49.83880
## Gelasian-Serravallian                   10.1666667     55.39273
## Gelasian-Langhian                        1.5714286     53.08367
## Gelasian-Burdigalian/Aquitanian         18.7777778     49.83880
## Piacencian-Zanclean                     10.3541667     49.83880
## Piacencian-Messinian                    19.1666667     61.63534
## Piacencian-Tortonian                     7.2777778     48.35073
## Piacencian-Serravallian                  2.5000000     54.05776
## Piacencian-Langhian                      9.2380952     51.68911
## Piacencian-Burdigalian/Aquitanian       11.1111111     48.35073
## Zanclean-Messinian                       8.8125000     62.80945
## Zanclean-Tortonian                       3.0763889     49.83880
## Zanclean-Serravallian                   12.8541667     55.39273
## Zanclean-Langhian                        1.1160714     53.08367
## Zanclean-Burdigalian/Aquitanian         21.4652778     49.83880
## Messinian-Tortonian                     11.8888889     61.63534
## Messinian-Serravallian                  21.6666667     66.20697
## Messinian-Langhian                       9.9285714     64.28752
## Messinian-Burdigalian/Aquitanian        30.2777778     61.63534
## Tortonian-Serravallian                   9.7777778     54.05776
## Tortonian-Langhian                       1.9603175     51.68911
## Tortonian-Burdigalian/Aquitanian        18.3888889     48.35073
## Serravallian-Langhian                   11.7380952     57.06323
## Serravallian-Burdigalian/Aquitanian      8.6111111     54.05776
## Langhian-Burdigalian/Aquitanian         20.3492063     51.68911
##                                         difference
## Modern-Upper Pleistocene                     FALSE
## Modern-Middle Pleistocene                    FALSE
## Modern-Lower Pleistocene                     FALSE
## Modern-Gelasian                              FALSE
```

```
## Modern-Piacencian                                FALSE
## Modern-Zanclean                                  FALSE
## Modern-Messinian                                 FALSE
## Modern-Tortonian                                 FALSE
## Modern-Serravallian                              FALSE
## Modern-Langhian                                  FALSE
## Modern-Burdigalian/Aquitanian                    FALSE
## Upper Pleistocene-Middle Pleistocene             FALSE
## Upper Pleistocene-Lower Pleistocene              FALSE
## Upper Pleistocene-Gelasian                       FALSE
## Upper Pleistocene-Piacencian                     FALSE
## Upper Pleistocene-Zanclean                       FALSE
## Upper Pleistocene-Messinian                      FALSE
## Upper Pleistocene-Tortonian                      FALSE
## Upper Pleistocene-Serravallian                   FALSE
## Upper Pleistocene-Langhian                       FALSE
## Upper Pleistocene-Burdigalian/Aquitanian         FALSE
## Middle Pleistocene-Lower Pleistocene             FALSE
## Middle Pleistocene-Gelasian                      FALSE
## Middle Pleistocene-Piacencian                    FALSE
## Middle Pleistocene-Zanclean                      FALSE
## Middle Pleistocene-Messinian                     FALSE
## Middle Pleistocene-Tortonian                     FALSE
## Middle Pleistocene-Serravallian                  FALSE
## Middle Pleistocene-Langhian                      FALSE
## Middle Pleistocene-Burdigalian/Aquitanian        FALSE
## Lower Pleistocene-Gelasian                       FALSE
## Lower Pleistocene-Piacencian                     FALSE
## Lower Pleistocene-Zanclean                       FALSE
## Lower Pleistocene-Messinian                      FALSE
## Lower Pleistocene-Tortonian                      FALSE
## Lower Pleistocene-Serravallian                   FALSE
## Lower Pleistocene-Langhian                       FALSE
```

```
## Lower Pleistocene-Burdigalian/Aquitanian       FALSE
## Gelasian-Piacencian                            FALSE
## Gelasian-Zanclean                              FALSE
## Gelasian-Messinian                             FALSE
## Gelasian-Tortonian                             FALSE
## Gelasian-Serravallian                          FALSE
## Gelasian-Langhian                              FALSE
## Gelasian-Burdigalian/Aquitanian                FALSE
## Piacencian-Zanclean                            FALSE
## Piacencian-Messinian                           FALSE
## Piacencian-Tortonian                           FALSE
## Piacencian-Serravallian                        FALSE
## Piacencian-Langhian                            FALSE
## Piacencian-Burdigalian/Aquitanian              FALSE
## Zanclean-Messinian                             FALSE
## Zanclean-Tortonian                             FALSE
## Zanclean-Serravallian                          FALSE
## Zanclean-Langhian                              FALSE
## Zanclean-Burdigalian/Aquitanian                FALSE
## Messinian-Tortonian                            FALSE
## Messinian-Serravallian                         FALSE
## Messinian-Langhian                             FALSE
## Messinian-Burdigalian/Aquitanian               FALSE
## Tortonian-Serravallian                         FALSE
## Tortonian-Langhian                             FALSE
## Tortonian-Burdigalian/Aquitanian               FALSE
## Serravallian-Langhian                          FALSE
## Serravallian-Burdigalian/Aquitanian            FALSE
## Langhian-Burdigalian/Aquitanian                FALSE
```

```
##  [1] "bin"          "Taxon"        "CL"           "extraCL"
##  [5] "PL"           "size"         "estimated"    "Age"
##  [9] "Island"       "Continent"    "Genus"        "EpochBins"
```

```
## [13] "Stages"       "MeanBins"     "nIndividuals" "nSpecies"
## [17] "nGenera"
```

```
## Multiple comparison test after Kruskal-Wallis
## p.value: 0.05
## Comparisons
##                                          obs.dif critical.dif
## Modern-Upper Pleistocene                116.987013     93.54915
## Modern-Middle Pleistocene                80.140652     90.54349
## Modern-Lower Pleistocene                 66.123604     87.87753
## Modern-Gelasian                           1.627566    114.05459
## Modern-Piacencian                       113.296537    136.11314
## Modern-Zanclean                         205.945804    123.43828
## Modern-Messinian                        137.122727    193.24680
## Modern-Tortonian                         61.739394     96.96976
## Modern-Serravallian                      21.764310    121.34770
## Modern-Langhian                         202.487013    164.56067
## Modern-Burdigalian/Aquitanian            70.472727    115.73561
## Upper Pleistocene-Middle Pleistocene     36.846361    118.78423
## Upper Pleistocene-Lower Pleistocene      50.863409    116.76486
## Upper Pleistocene-Gelasian              115.359447    137.55006
## Upper Pleistocene-Piacencian              3.690476    156.32773
## Upper Pleistocene-Zanclean               88.958791    145.42551
## Upper Pleistocene-Messinian              20.135714    207.98052
## Upper Pleistocene-Tortonian              55.247619    123.75260
## Upper Pleistocene-Serravallian          138.751323    143.65527
## Upper Pleistocene-Langhian               85.500000    181.63641
## Upper Pleistocene-Burdigalian/Aquitanian 46.514286    138.94713
## Middle Pleistocene-Lower Pleistocene     14.017047    114.37094
## Middle Pleistocene-Gelasian              78.513086    135.52379
## Middle Pleistocene-Piacencian            33.155885    154.54785
## Middle Pleistocene-Zanclean             125.805152    143.51048
## Middle Pleistocene-Messinian             56.982075    206.64601
```

```
## Middle Pleistocene-Tortonian               18.401258    121.49644
## Middle Pleistocene-Serravallian           101.904962    141.71632
## Middle Pleistocene-Langhian               122.346361    180.10681
## Middle Pleistocene-Burdigalian/Aquitanian   9.667925    136.94153
## Lower Pleistocene-Gelasian                 64.496038    133.75738
## Lower Pleistocene-Piacencian               47.172932    153.00123
## Lower Pleistocene-Zanclean                139.822200    141.84356
## Lower Pleistocene-Messinian                70.999123    205.49188
## Lower Pleistocene-Tortonian                 4.384211    119.52289
## Lower Pleistocene-Serravallian             87.887914    140.02804
## Lower Pleistocene-Langhian                136.363409    178.78144
## Lower Pleistocene-Burdigalian/Aquitanian    4.349123    135.19364
## Gelasian-Piacencian                       111.668971    169.39706
## Gelasian-Zanclean                         204.318238    159.39129
## Gelasian-Messinian                        135.495161    217.97454
## Gelasian-Tortonian                         60.111828    139.89893
## Gelasian-Serravallian                      23.391876    157.77782
## Gelasian-Langhian                         200.859447    192.99946
## Gelasian-Burdigalian/Aquitanian            68.845161    153.50345
## Piacencian-Zanclean                        92.649267    175.85199
## Piacencian-Messinian                       23.826190    230.28513
## Piacencian-Tortonian                       51.557143    158.39839
## Piacencian-Serravallian                   135.060847    174.39088
## Piacencian-Langhian                        89.190476    206.80215
## Piacencian-Burdigalian/Aquitanian          42.823810    170.53342
## Zanclean-Messinian                         68.823077    223.02794
## Zanclean-Tortonian                        144.206410    147.64914
## Zanclean-Serravallian                     227.710114    164.68880
## Zanclean-Langhian                           3.458791    198.68908
## Zanclean-Burdigalian/Aquitanian           135.473077    160.59847
## Messinian-Tortonian                        75.383333    209.54137
## Messinian-Serravallian                    158.887037    221.87771
## Messinian-Langhian                         65.364286    248.16258
```

```
## Messinian-Burdigalian/Aquitanian           66.650000    218.85882
## Tortonian-Serravallian                      83.503704    145.90588
## Tortonian-Langhian                         140.747619    183.42158
## Tortonian-Burdigalian/Aquitanian             8.733333    141.27276
## Serravallian-Langhian                      224.251323    197.39708
## Serravallian-Burdigalian/Aquitanian         92.237037    158.99725
## Langhian-Burdigalian/Aquitanian            132.014286    193.99761
##                                           difference
## Modern-Upper Pleistocene                        TRUE
## Modern-Middle Pleistocene                      FALSE
## Modern-Lower Pleistocene                       FALSE
## Modern-Gelasian                                FALSE
## Modern-Piacencian                              FALSE
## Modern-Zanclean                                 TRUE
## Modern-Messinian                               FALSE
## Modern-Tortonian                               FALSE
## Modern-Serravallian                            FALSE
## Modern-Langhian                                 TRUE
## Modern-Burdigalian/Aquitanian                  FALSE
## Upper Pleistocene-Middle Pleistocene           FALSE
## Upper Pleistocene-Lower Pleistocene            FALSE
## Upper Pleistocene-Gelasian                     FALSE
## Upper Pleistocene-Piacencian                   FALSE
## Upper Pleistocene-Zanclean                     FALSE
## Upper Pleistocene-Messinian                    FALSE
## Upper Pleistocene-Tortonian                    FALSE
## Upper Pleistocene-Serravallian                 FALSE
## Upper Pleistocene-Langhian                     FALSE
## Upper Pleistocene-Burdigalian/Aquitanian       FALSE
## Middle Pleistocene-Lower Pleistocene           FALSE
## Middle Pleistocene-Gelasian                    FALSE
## Middle Pleistocene-Piacencian                  FALSE
## Middle Pleistocene-Zanclean                    FALSE
```

```
## Middle Pleistocene-Messinian                    FALSE
## Middle Pleistocene-Tortonian                    FALSE
## Middle Pleistocene-Serravallian                 FALSE
## Middle Pleistocene-Langhian                     FALSE
## Middle Pleistocene-Burdigalian/Aquitanian       FALSE
## Lower Pleistocene-Gelasian                      FALSE
## Lower Pleistocene-Piacencian                    FALSE
## Lower Pleistocene-Zanclean                      FALSE
## Lower Pleistocene-Messinian                     FALSE
## Lower Pleistocene-Tortonian                     FALSE
## Lower Pleistocene-Serravallian                  FALSE
## Lower Pleistocene-Langhian                      FALSE
## Lower Pleistocene-Burdigalian/Aquitanian        FALSE
## Gelasian-Piacencian                             FALSE
## Gelasian-Zanclean                                TRUE
## Gelasian-Messinian                              FALSE
## Gelasian-Tortonian                              FALSE
## Gelasian-Serravallian                           FALSE
## Gelasian-Langhian                                TRUE
## Gelasian-Burdigalian/Aquitanian                 FALSE
## Piacencian-Zanclean                             FALSE
## Piacencian-Messinian                            FALSE
## Piacencian-Tortonian                            FALSE
## Piacencian-Serravallian                         FALSE
## Piacencian-Langhian                             FALSE
## Piacencian-Burdigalian/Aquitanian               FALSE
## Zanclean-Messinian                              FALSE
## Zanclean-Tortonian                              FALSE
## Zanclean-Serravallian                            TRUE
## Zanclean-Langhian                               FALSE
## Zanclean-Burdigalian/Aquitanian                 FALSE
## Messinian-Tortonian                             FALSE
## Messinian-Serravallian                          FALSE
```

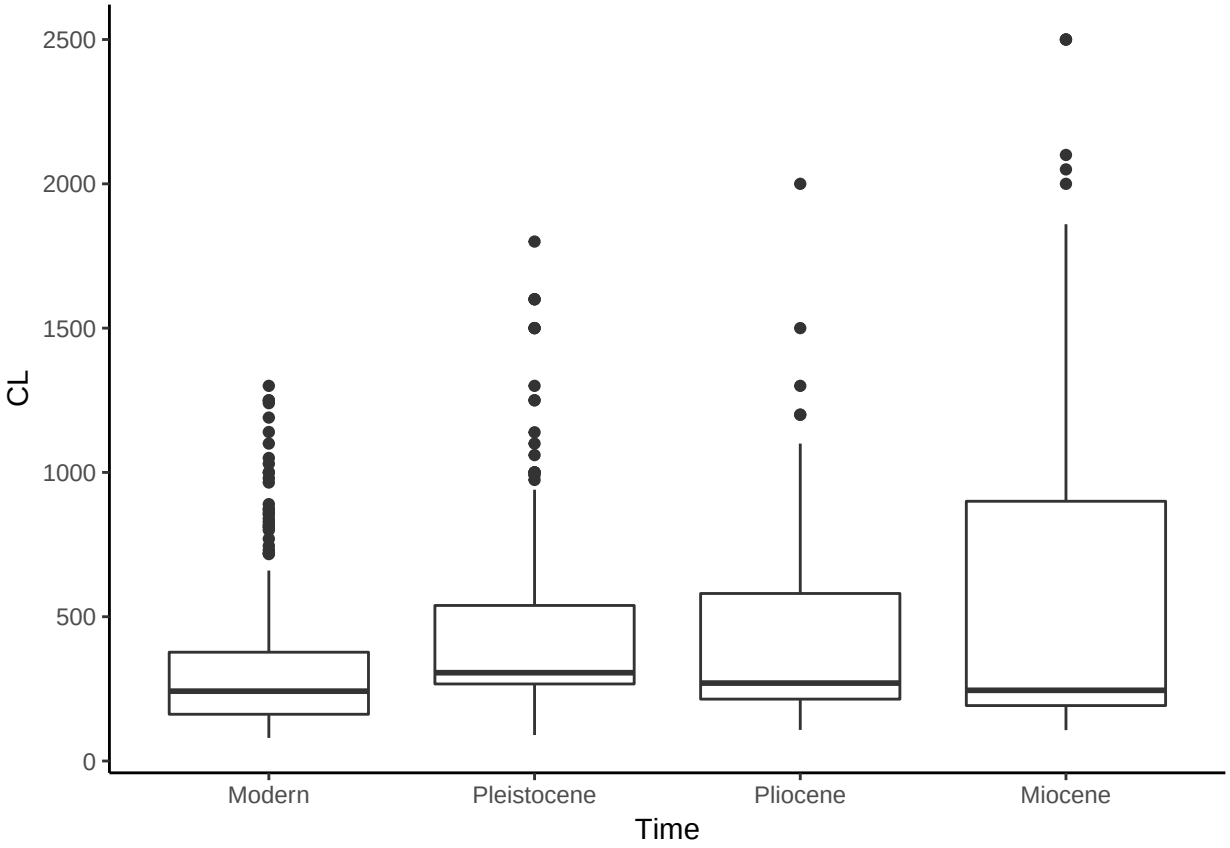
```
## Messinian-Langhian                              FALSE
## Messinian-Burdigalian/Aquitanian                FALSE
## Tortonian-Serravallian                          FALSE
## Tortonian-Langhian                              FALSE
## Tortonian-Burdigalian/Aquitanian                FALSE
## Serravallian-Langhian                            TRUE
## Serravallian-Burdigalian/Aquitanian             FALSE
## Langhian-Burdigalian/Aquitanian                 FALSE

##
##  Kruskal-Wallis rank sum test
##
## data:  list(M, UPle, MPle, LPle, G, Pia, Z, Mess, Tort, S, L, BA)
## Kruskal-Wallis chi-squared = 71.441, df = 11, p-value = 6.496e-11

##
##  Wilcoxon rank sum test with continuity correction
##
## data:  M and UPle
## W = 3853.5, p-value = 1.392e-05
## alternative hypothesis: true location shift is less than 0

## [1] TRUE

##
##  Wilcoxon rank sum test with continuity correction
##
## data:  UPle and MPle
## W = 1560, p-value = 0.08043
## alternative hypothesis: true location shift is not equal to 0

## [1] FALSE

##
##  Wilcoxon rank sum test with continuity correction
##
## data:  MPle and LPle
```

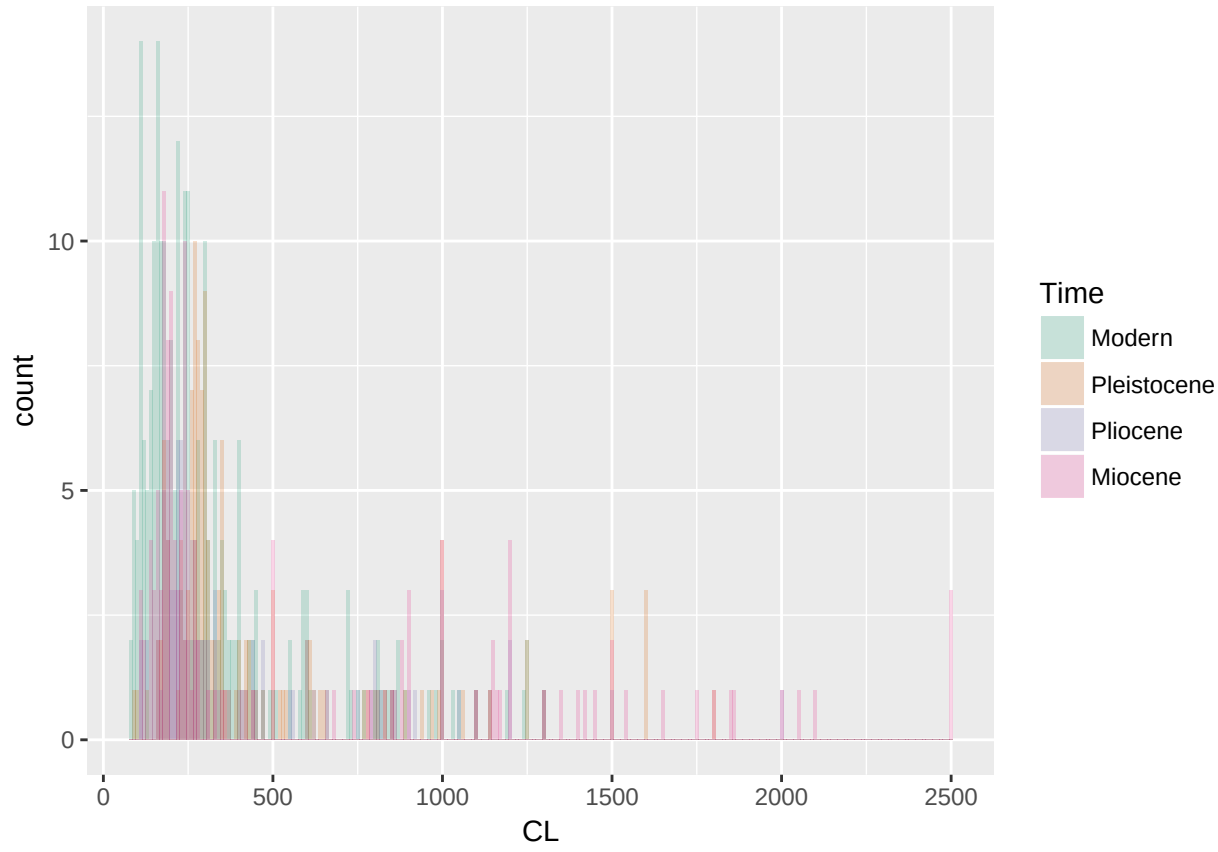
```
## W = 1643.5, p-value = 0.428
## alternative hypothesis: true location shift is not equal to 0
## [1] FALSE
##
##  Wilcoxon rank sum test with continuity correction
##
## data:  LPle and G
## W = 1124, p-value = 0.01802
## alternative hypothesis: true location shift is greater than 0
## [1] TRUE
## Warning in wilcox.test.default(G, Pia, paired = FALSE): cannot compute
## exact p-value with ties
##
##  Wilcoxon rank sum test with continuity correction
##
## data:  G and Pia
## W = 246, p-value = 0.1406
## alternative hypothesis: true location shift is not equal to 0
## [1] FALSE
## Warning in wilcox.test.default(Pia, Z, paired = FALSE): cannot compute
## exact p-value with ties
##
##  Wilcoxon rank sum test with continuity correction
##
## data:  Pia and Z
## W = 185.5, p-value = 0.06256
## alternative hypothesis: true location shift is not equal to 0
## [1] FALSE
## Warning in wilcox.test.default(Z, Mess, paired = FALSE): cannot compute
## exact p-value with ties
```

```
##
##  Wilcoxon rank sum test with continuity correction
##
## data:  Z and Mess
## W = 134.5, p-value = 0.8876
## alternative hypothesis: true location shift is not equal to 0
## [1] FALSE
## Warning in wilcox.test.default(Mess, Tort, paired = FALSE): cannot compute
## exact p-value with ties
##
##  Wilcoxon rank sum test with continuity correction
##
## data:  Mess and Tort
## W = 274.5, p-value = 0.2844
## alternative hypothesis: true location shift is not equal to 0
## [1] FALSE
## Warning in wilcox.test.default(Tort, S, paired = FALSE, alternative = "g"):
## cannot compute exact p-value with ties
##
##  Wilcoxon rank sum test with continuity correction
##
## data:  Tort and S
## W = 810, p-value = 0.009363
## alternative hypothesis: true location shift is greater than 0
## [1] TRUE
## Warning in wilcox.test.default(S, L, paired = FALSE, alternative = "l"):
## cannot compute exact p-value with ties
##
##  Wilcoxon rank sum test with continuity correction
##
```

```
## data:  S and L
## W = 45, p-value = 3.952e-05
## alternative hypothesis: true location shift is less than 0
## [1] TRUE
## Warning in wilcox.test.default(L, BA, paired = FALSE, alternative = "g"):
## cannot compute exact p-value with ties
##
##  Wilcoxon rank sum test with continuity correction
##
## data:  L and BA
## W = 311, p-value = 0.005639
## alternative hypothesis: true location shift is greater than 0
## [1] TRUE
```

lineage	pvalue	Bonferroni
M and UPle	0.0000139	0.0001531
S and L	0.0000395	0.0004347
L and BA	0.0056389	0.0620282
Tort and S	0.0093632	0.1029949
LPle and G	0.0180154	0.1981690
Pia and Z	0.0625644	0.6882088
UPle and MPle	0.0804319	0.8847504
G and Pia	0.1405871	1.0000000
Mess and Tort	0.2844360	1.0000000
MPle and LPle	0.4279860	1.0000000
Z and Mess	0.8876030	1.0000000


2500
2000
1500
1000
500
0
CL
Modern
Pleistocene
Pliocene
Miocene
Time




```
##
##  Kruskal-Wallis rank sum test
##
## data:  list(Modern, Plei, Plio, Mio)
## Kruskal-Wallis chi-squared = 37.764, df = 3, p-value = 3.172e-08
```

```
##  [1] "EpochBins"    "bin"          "Taxon"        "CL"
##  [5] "extraCL"      "PL"           "size"         "estimated"
##  [9] "Age"          "Island"       "Continent"    "Genus"
## [13] "Stages"       "MeanBins"     "nIndividuals" "nSpecies"
## [17] "nGenera"      "Time"
```

```
## Multiple comparison test after Kruskal-Wallis
## p.value: 0.05
## Comparisons
##                          obs.dif critical.dif difference
## Modern-Pleistocene   110.904114     49.80480       TRUE
```

```
## Modern-Pliocene       67.623302     58.35513       TRUE
## Modern-Miocene        64.510137     49.57182       TRUE
## Pleistocene-Pliocene  43.280812     64.36704      FALSE
## Pleistocene-Miocene   46.393977     56.52575      FALSE
## Pliocene-Miocene       3.113165     64.18694      FALSE
```

continental vs. insular per time bin

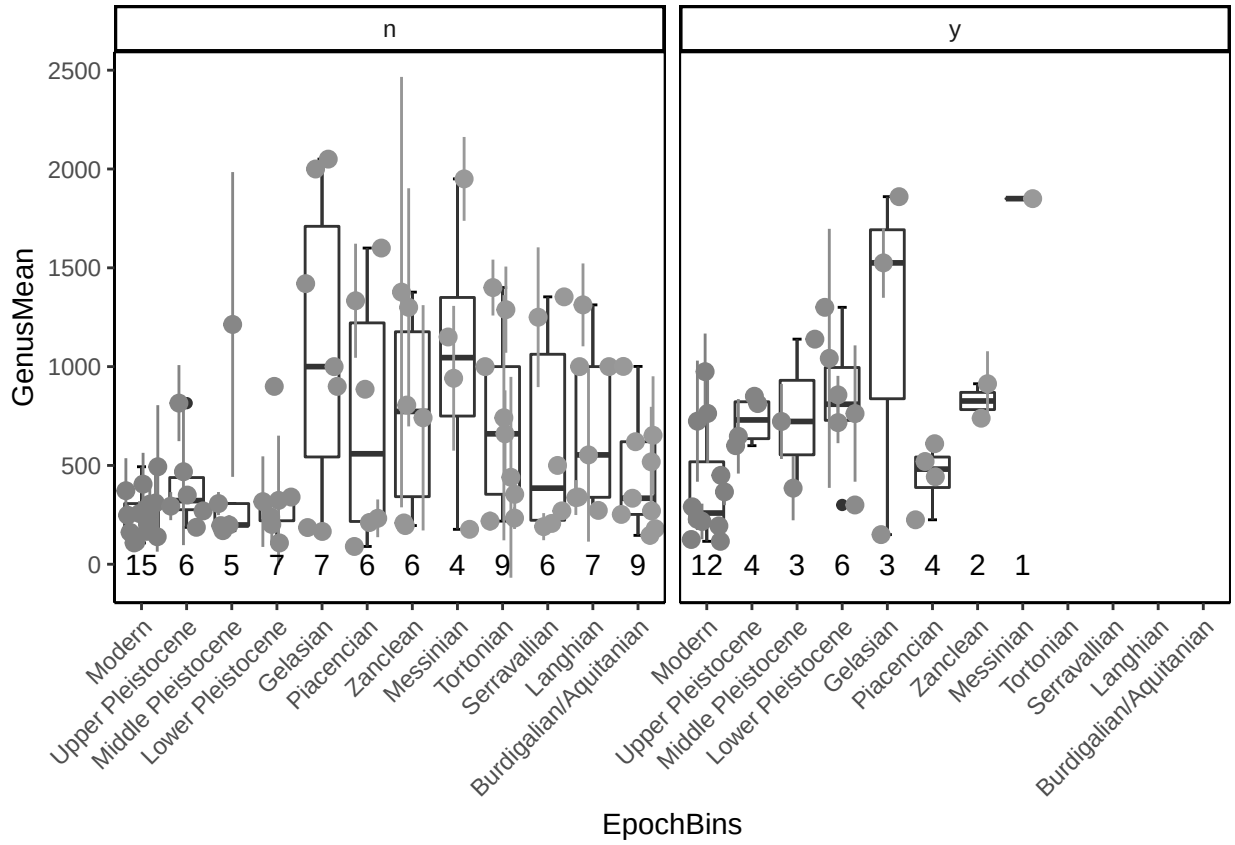


Figure 18: Boxplots of each genus per time bin, continental vs. insular species.

fossil vs. modern

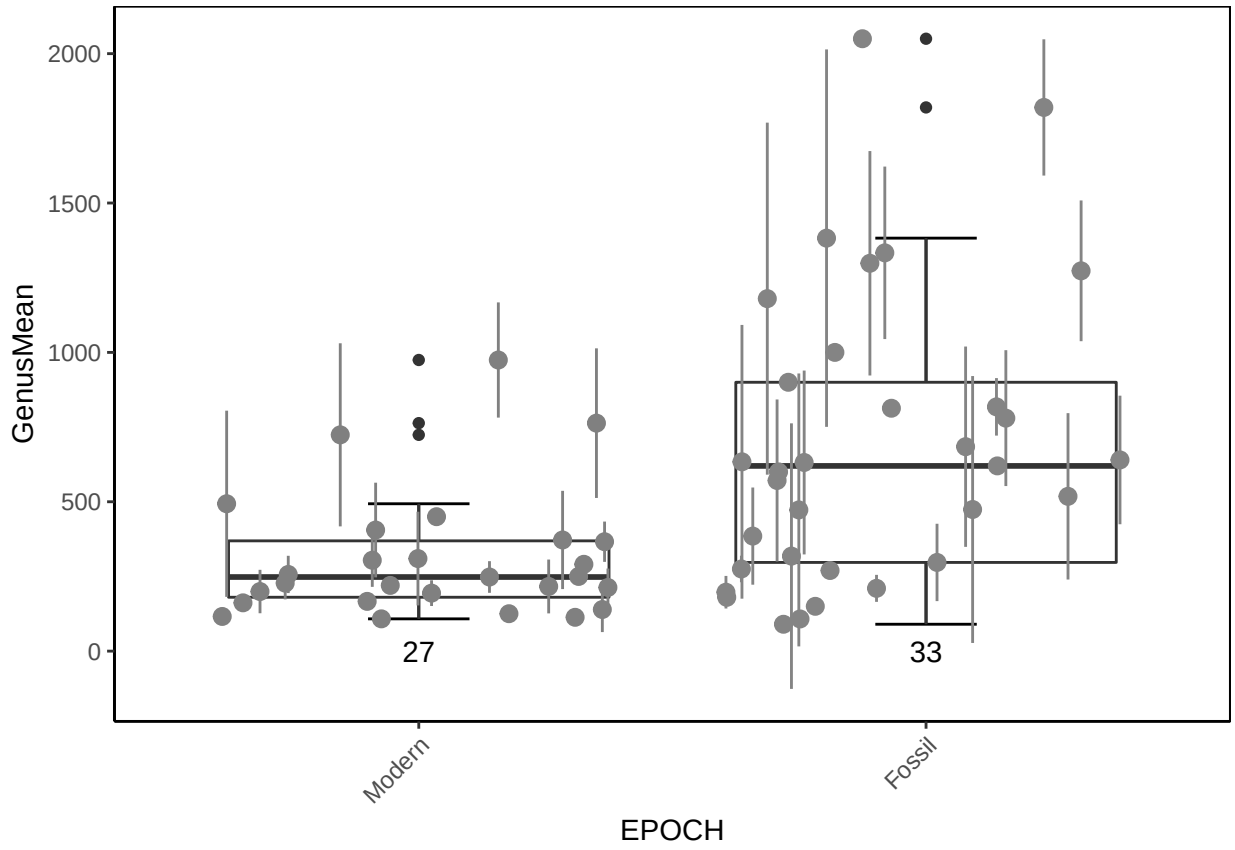
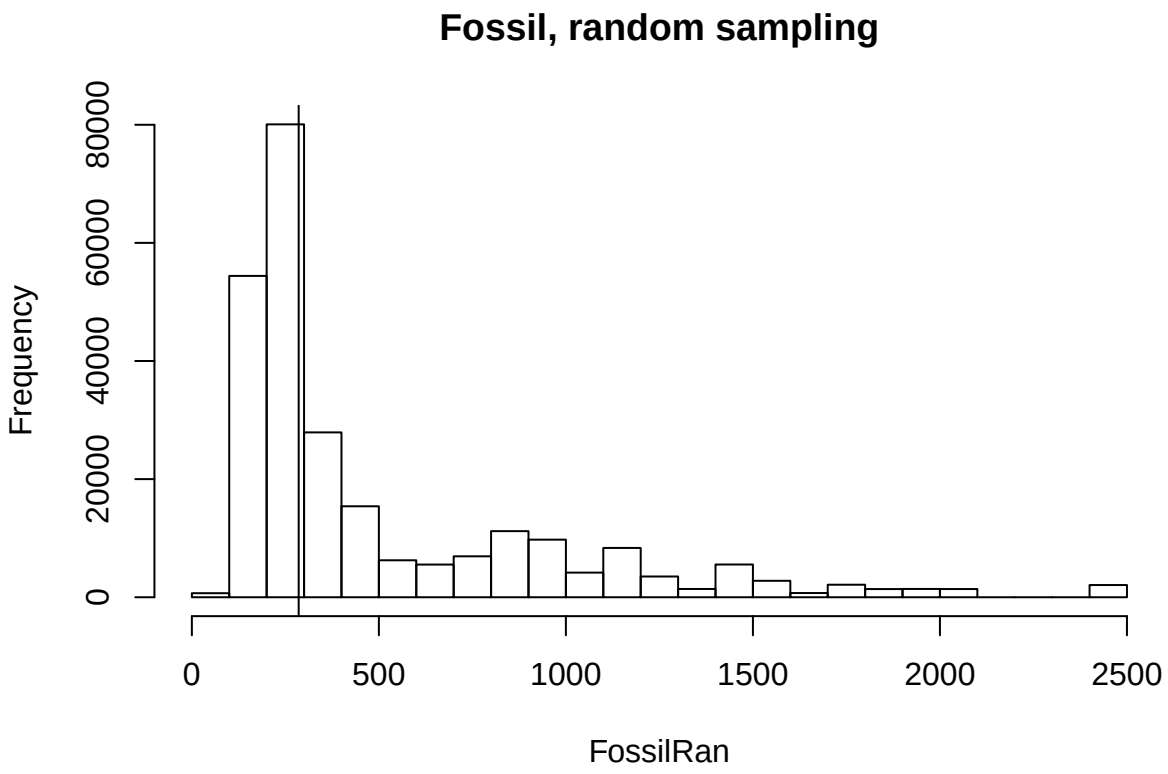


Figure 19: Boxplots fossil vs. modern.




```
## [1] 330.3495
```

```
## [1] 520.9963
```

```
##
```

```
##  Wilcoxon rank sum test with continuity correction
```

```
##
```

```
## data:  Modern and Fossil
```

```
## W = 23378, p-value = 1.514e-07
```

```
## alternative hypothesis: true location shift is less than 0
```

Wilcoxon Rank Sum Test (unpaired data):

modern $<$ fossil ($\mathrm{P} = 1.5143411 \times 10^{-7}$)

fossil vs. modern, continental vs. insular

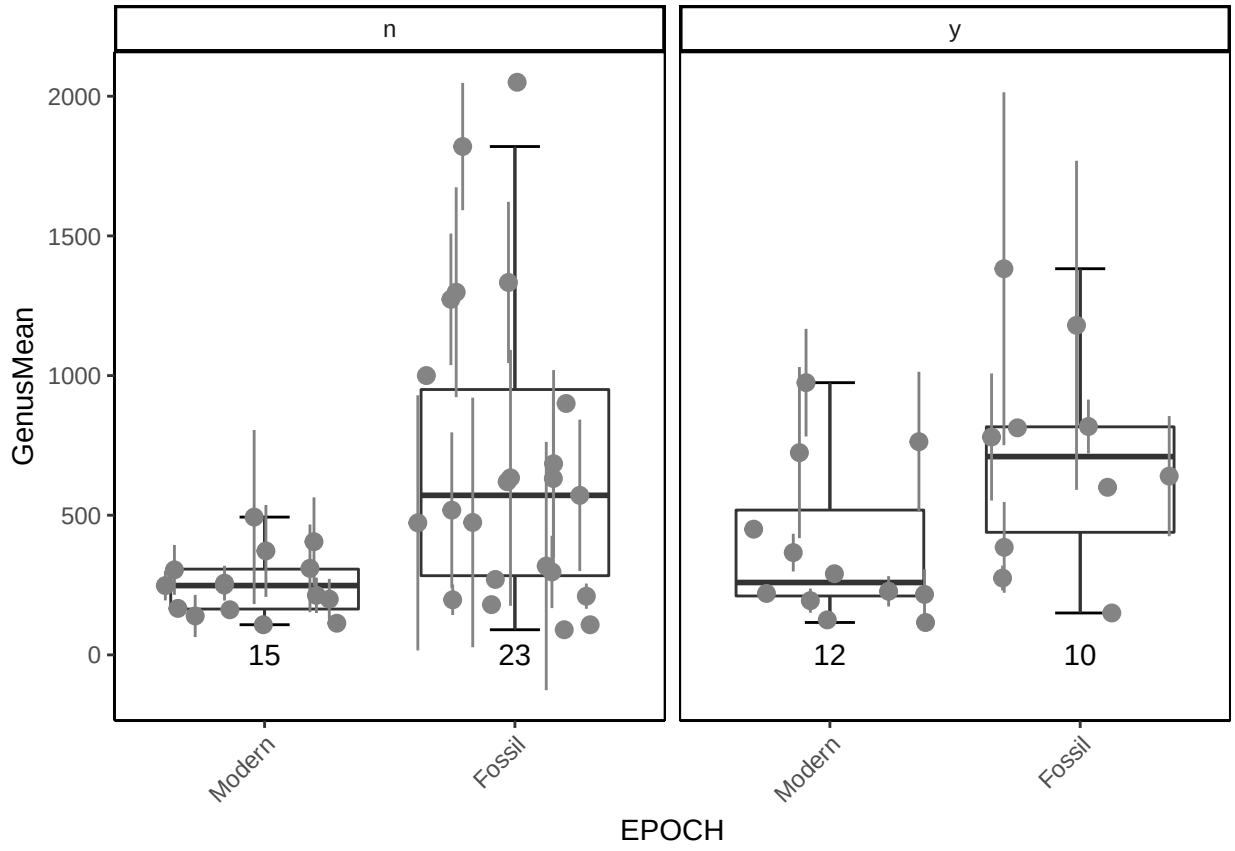
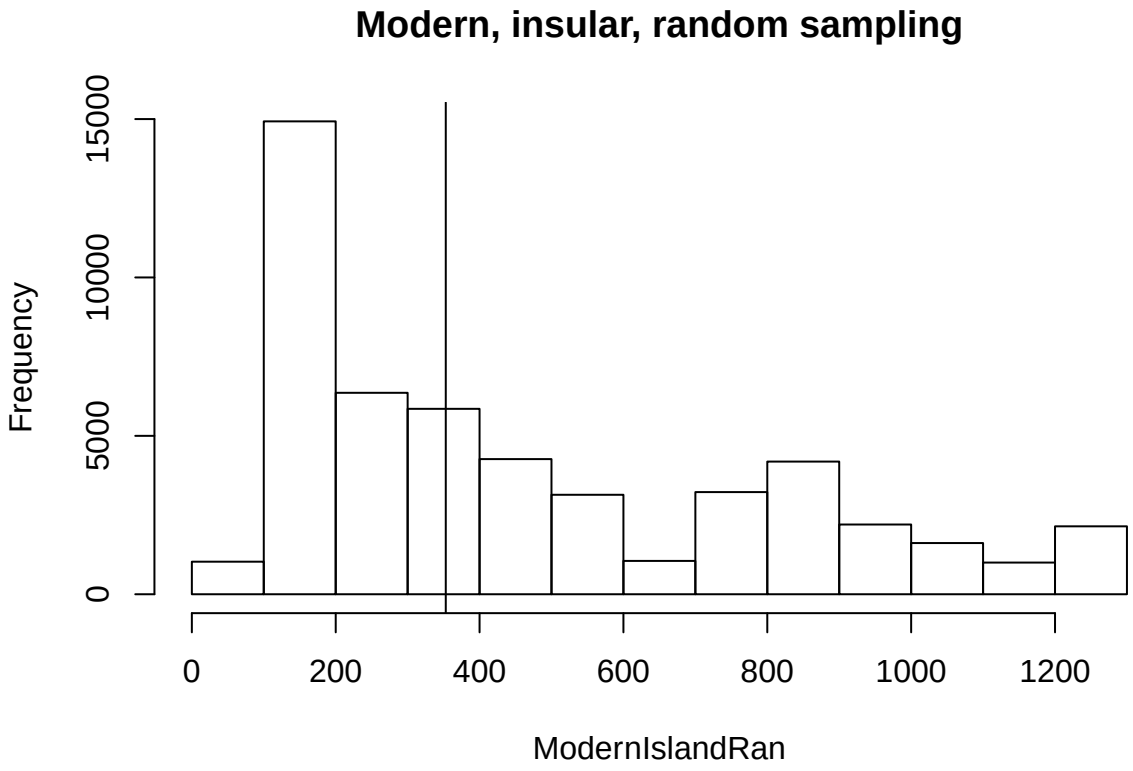


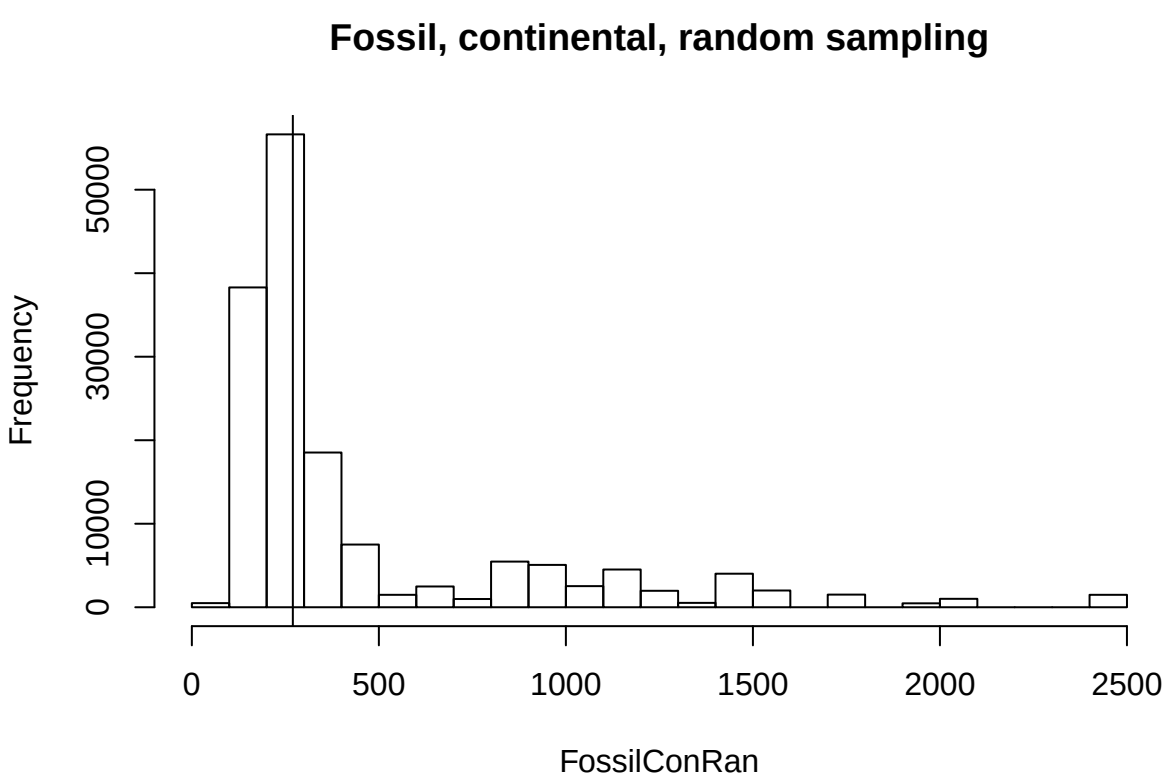
Figure 20: Boxplots fossil vs. modern, continental vs. insular species.

```
## [1] 51
```

```
## [1] 51
```




```
##
##  Wilcoxon rank sum test with continuity correction
##
## data:  ModernIsland and FossilIsland
## W = 785, p-value = 0.0002833
## alternative hypothesis: true location shift is less than 0
## [1] 157
## [1] 157
```




```
##
##  Wilcoxon rank sum test with continuity correction
##
## data:  ModernCon and FossilCon
## W = 8044, p-value = 5.162e-08
## alternative hypothesis: true location shift is less than 0
```

Wilcoxon Rank Sum Test (unpaired data):

modern continental < fossil continental ($P = 5.1620534 \times 10^{-8}$)

modern insular < fossil insular ($P = 2.8331427 \times 10^{-4}$)

continental vs. insular

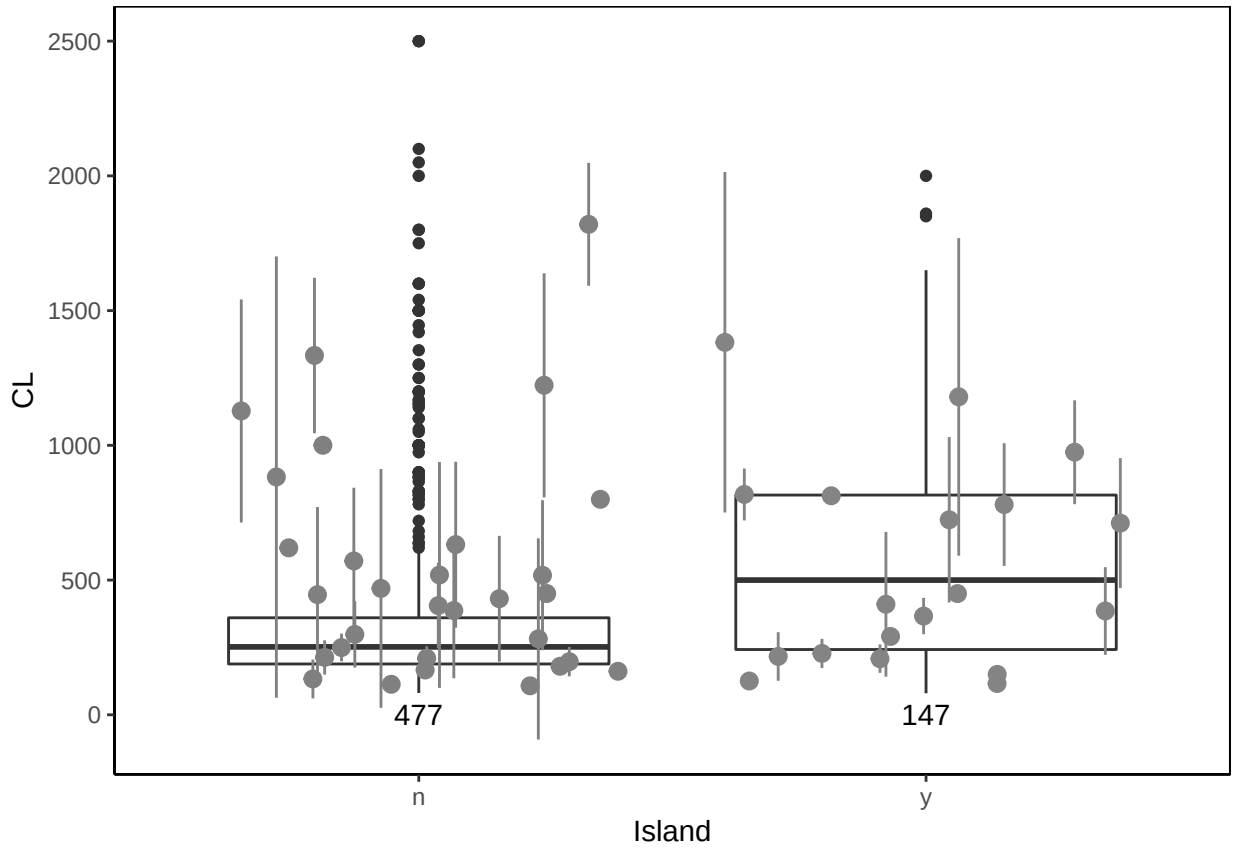
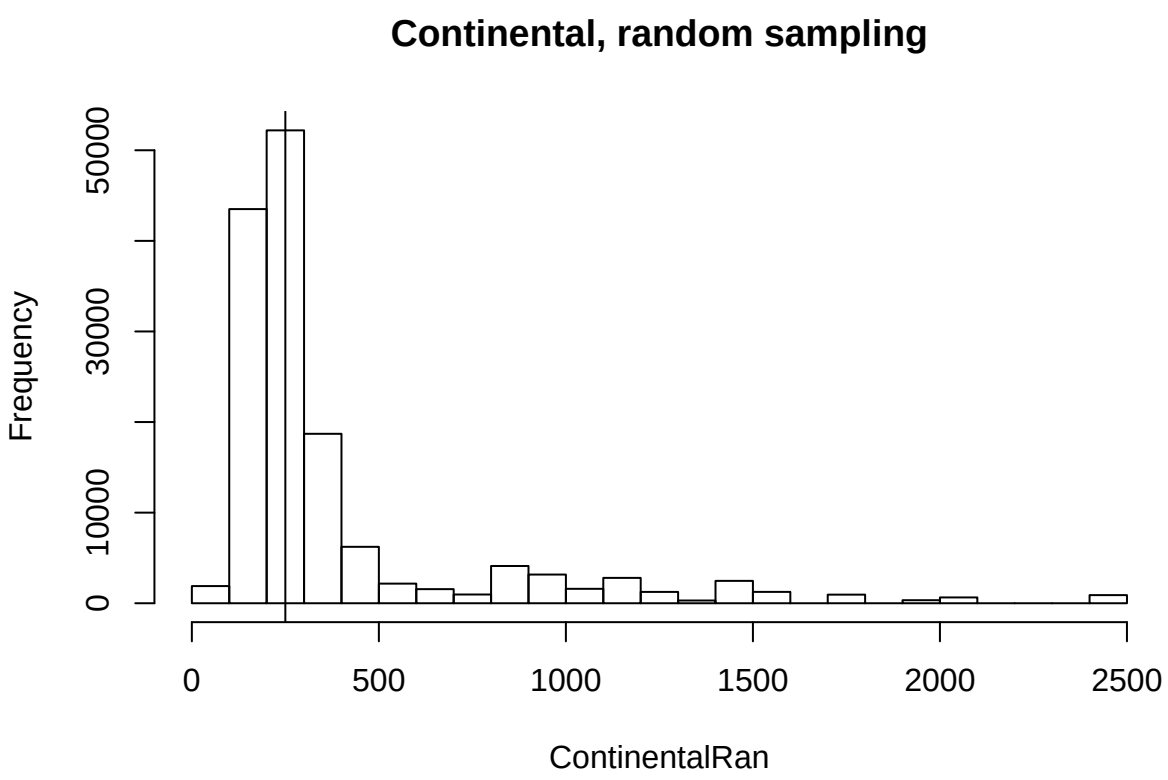


Figure 21: Boxplot continental vs. insular, genera summarised

```
## [1] 147
```

```
## [1] 147
```




```
##
##  Wilcoxon rank sum test with continuity correction
##
## data:  Insular and Continental
## W = 14328, p-value = 6.699e-07
## alternative hypothesis: true location shift is greater than 0
```

Wilcoxon Rank Sum Test (unpaired data):

continental $<$ insular ($\mathrm{P} = 6.6987158 \times 10^{-7}$)

continental vs. insular per time bin

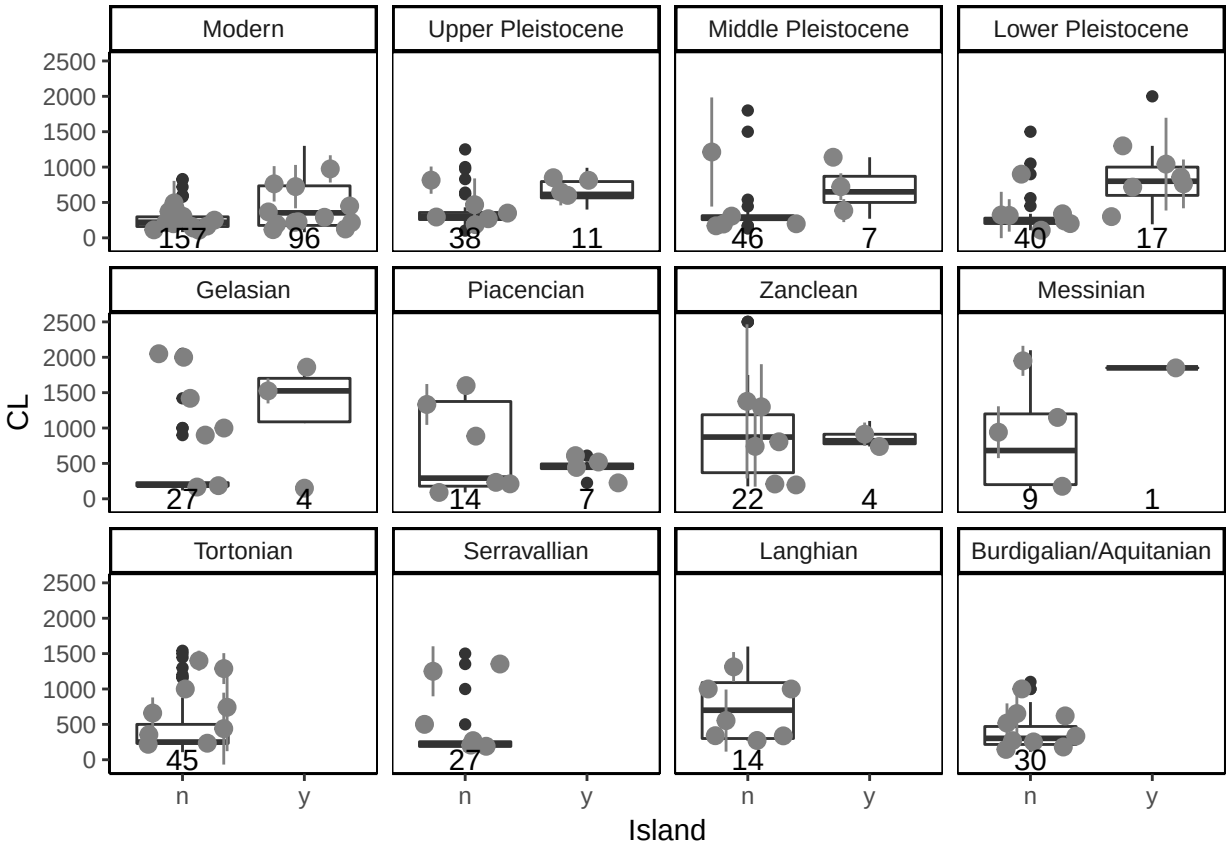


Figure 22: Boxplot continental vs. insular, genera summarised

Multiple comparison test after Kruskal-Wallis			0.05
	obs.dif	critical.dif	difference
Africa-America	108.957339	49.63331	TRUE
Africa-Asia	118.618286	72.72560	TRUE
Africa-Europe	58.612310	53.16766	TRUE
America-Asia	9.660947	68.17247	FALSE
America-Europe	50.345029	46.74690	TRUE
Asia-Europe	60.005976	70.78714	FALSE

continents

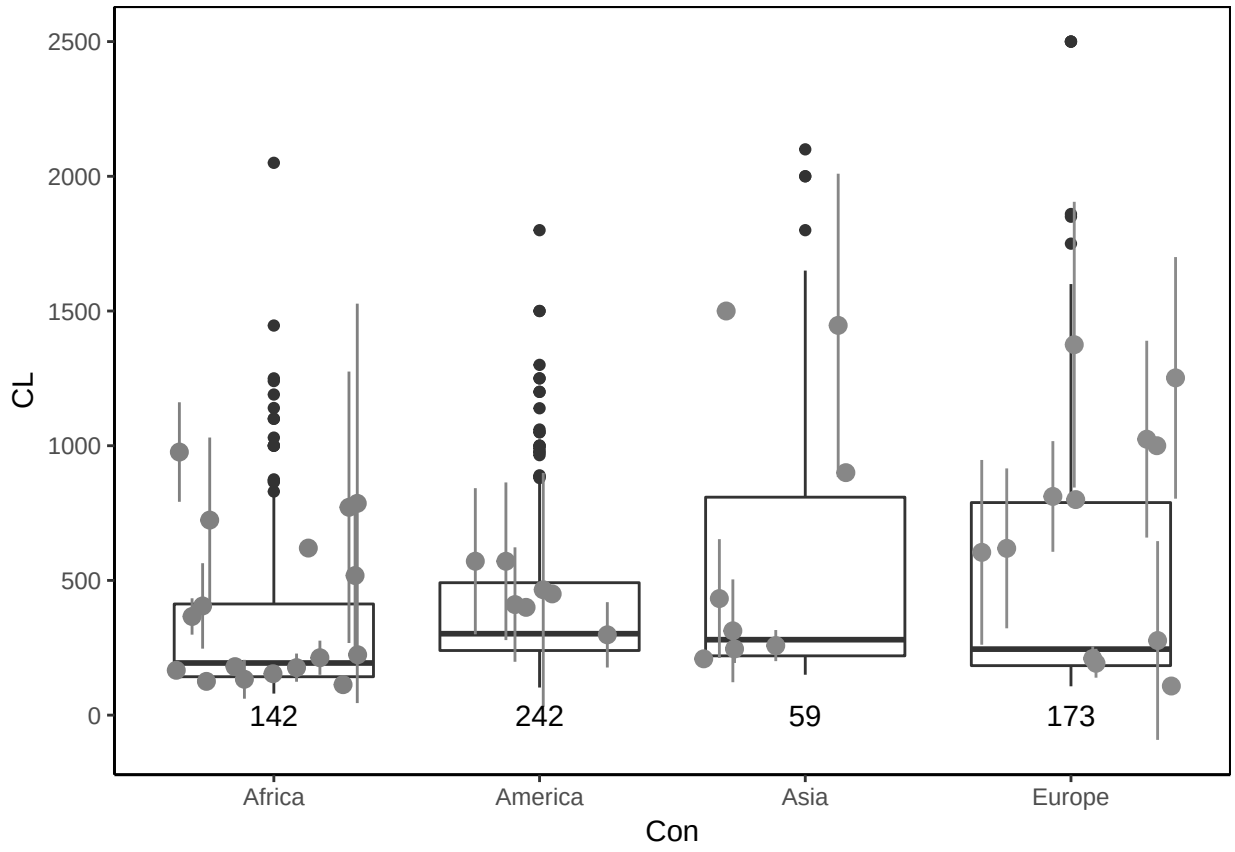


Figure 23: Boxplot: body size on different continents, genera summarised

```
##  [1] "Continent"    "bin"          "Taxon"        "CL"
##  [5] "extraCL"      "PL"           "size"         "estimated"
##  [9] "Age"          "Island"       "Genus"        "EpochBins"
## [13] "Stages"       "MeanBins"     "nIndividuals" "nSpecies"
## [17] "nGenera"      "Con"
```

```
## [1] 142
```

```
## [1] 347.6887
```

```
## [1] 142
```

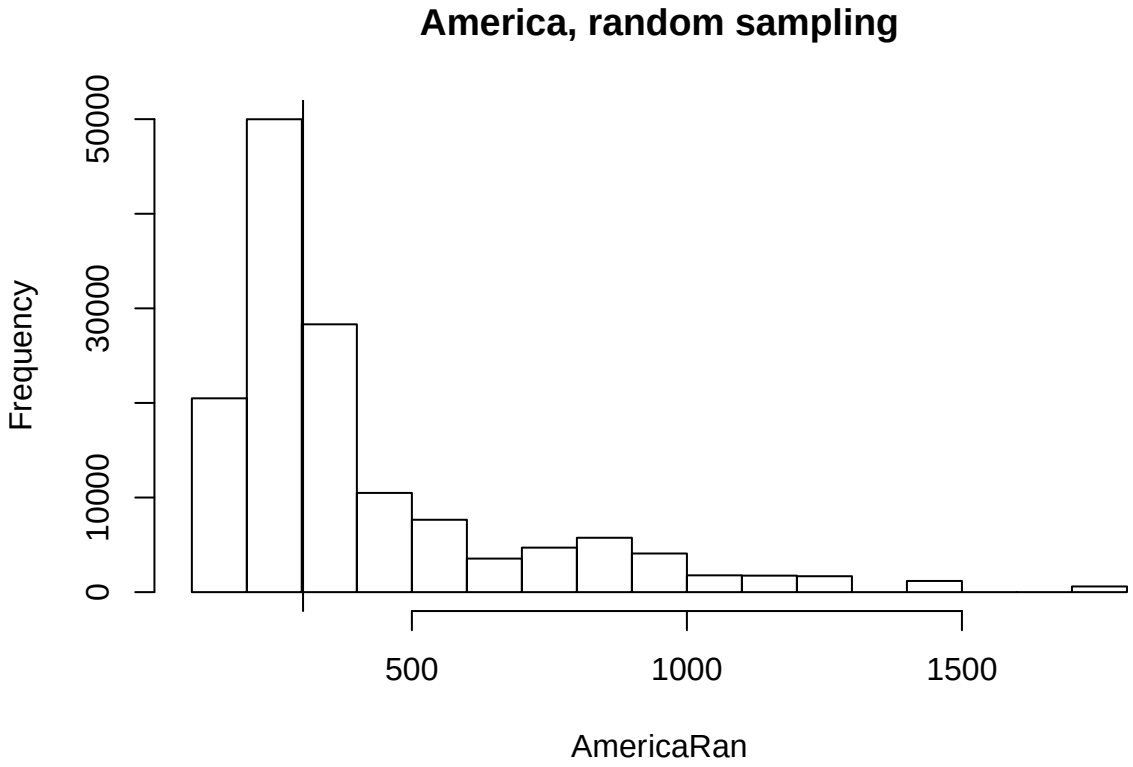
```
## [1] 418.4691
```

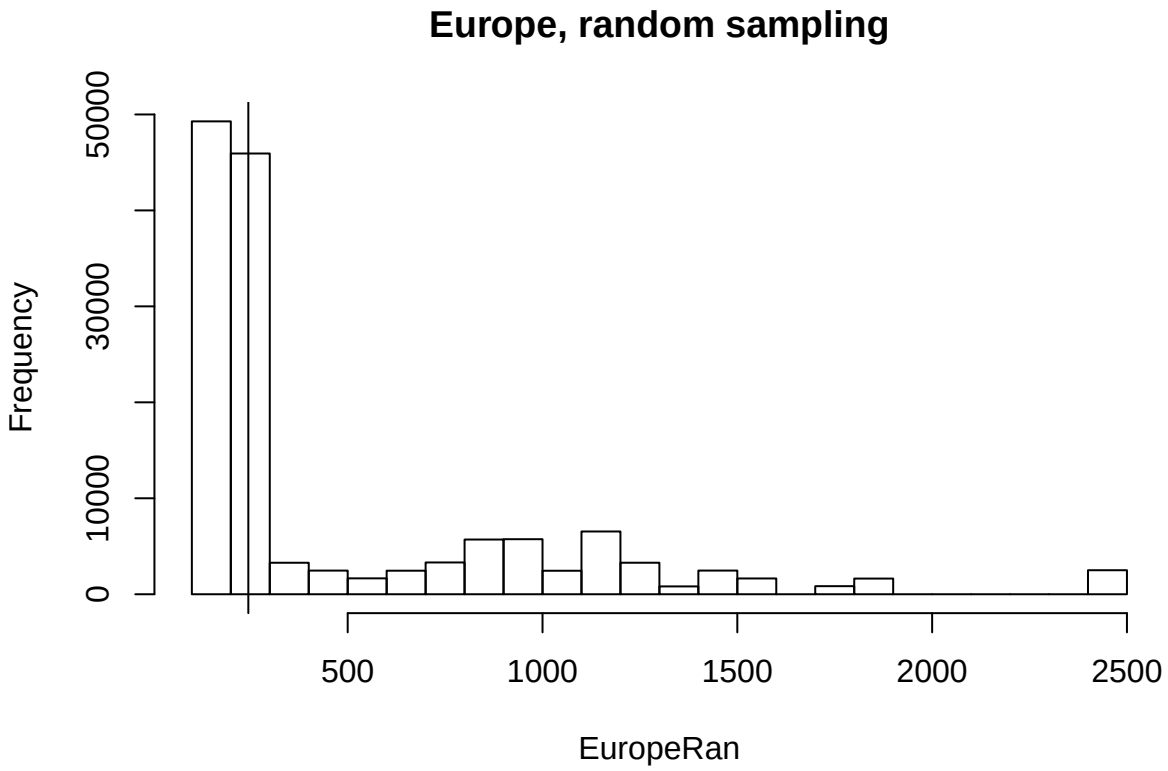
```
## [1] 59
```

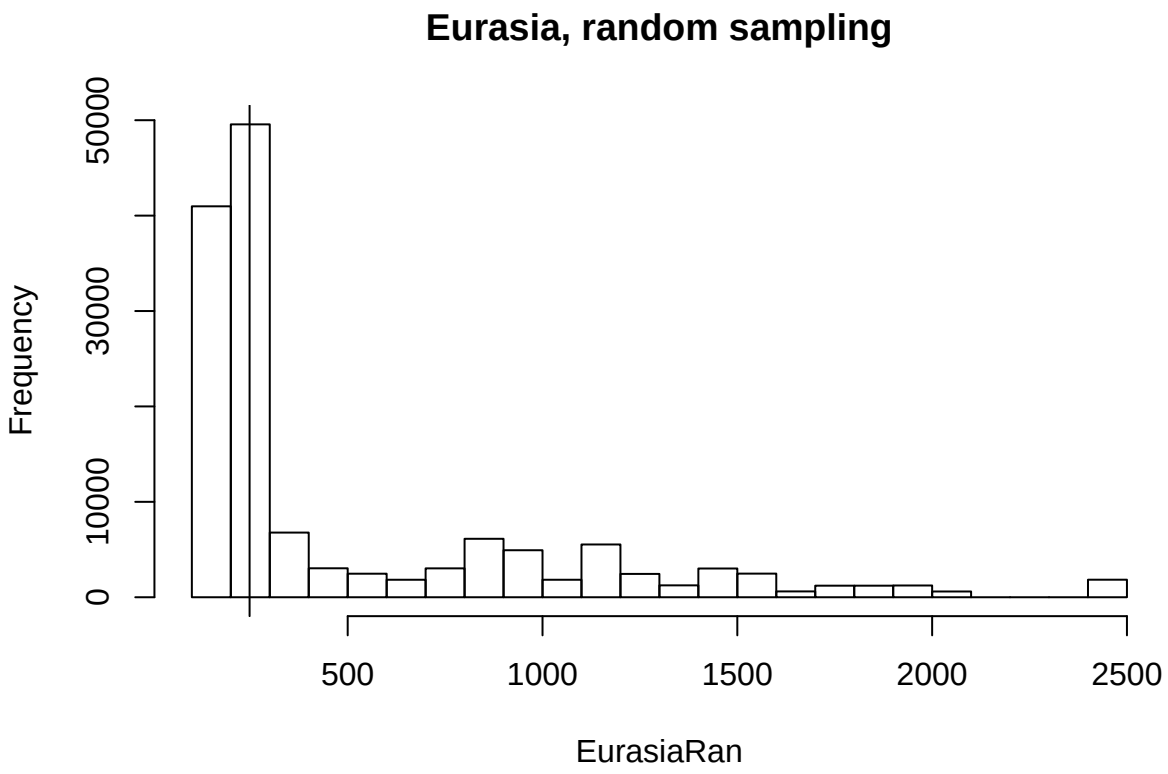
```
## [1] 173
```

```
## [1] 142
```

```
## [1] 547.069
```




Europe, random sampling
Frequency
0
10000
30000
50000
500
1000
1500
2000
2500
EuropeRan




```
##
##  Kruskal-Wallis rank sum test
##
## data:  list(Africa, America, Eurasia, Europe)
## Kruskal-Wallis chi-squared = 30.715, df = 3, p-value = 9.762e-07
```

Kruskal-Wallis-Test:

Continent means differ ($P = 9.7619372 \times 10^{-7}$) (still have to look into the details...)

continents, continental vs. insular

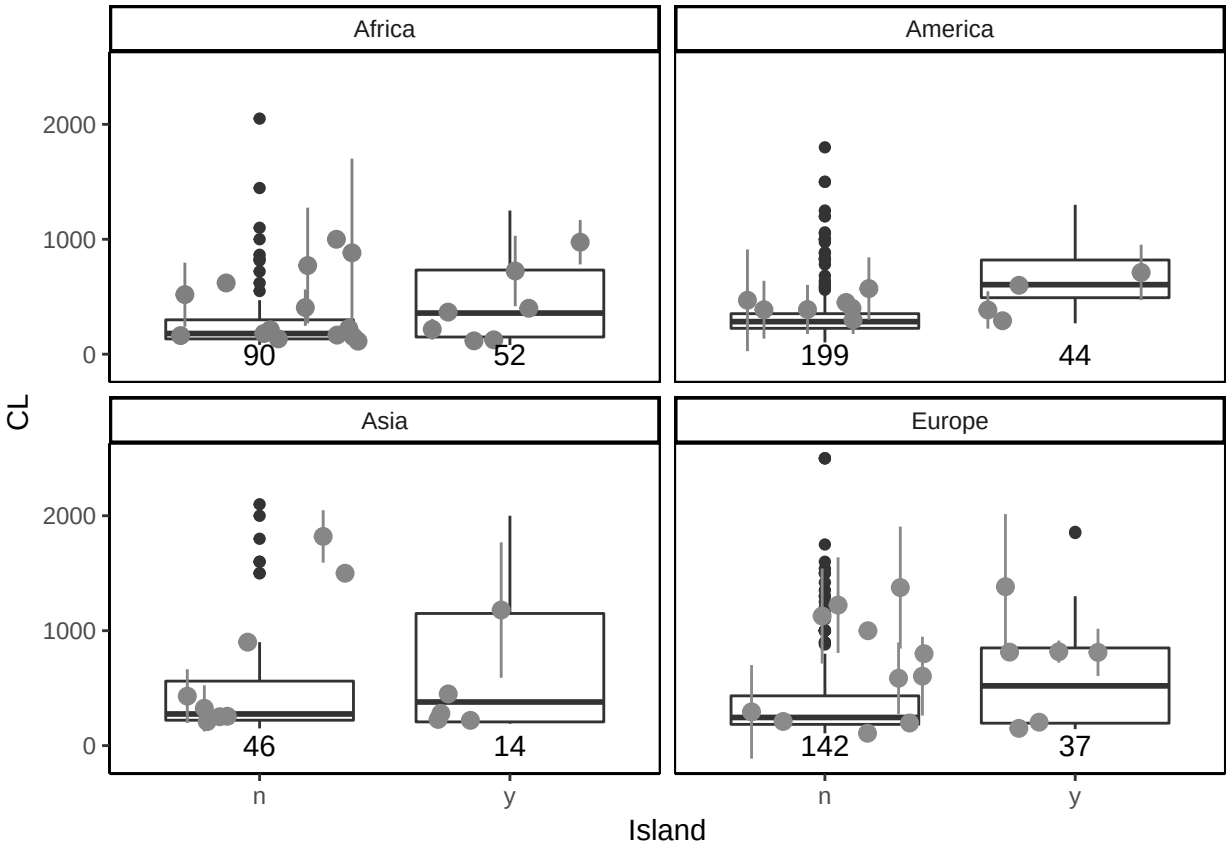


Figure 24: Boxplot: body size on different continents, genera summarised

paleoTS analysis

all (continental and insular)

genera (all)

Table 9: paleoTS object, all data

tt	nn	mm	vv
0.00585	22	330.1456	50307.87
0.06885	8	506.3265	64620.11
0.45350	7	516.4053	155241.85
1.29350	12	593.8669	147507.20
2.19700	8	971.8850	580540.76
3.09400	9	658.0826	271043.73
4.46600	8	785.0792	187937.61
6.28900	4	1141.9375	584378.85
9.42700	9	703.9570	195766.19
12.71400	6	628.3020	285258.36
14.89500	7	687.9619	169914.58
19.50000	9	441.5420	78467.65

Table 10: Model-fitting results for testudinidae, genera, all

	logL	K	AICc	Akaike.wt
GRW	-74.86614	2	155.2323	0.026
URW	-75.71177	1	153.8680	0.051
Stasis	-71.27845	2	148.0569	0.924

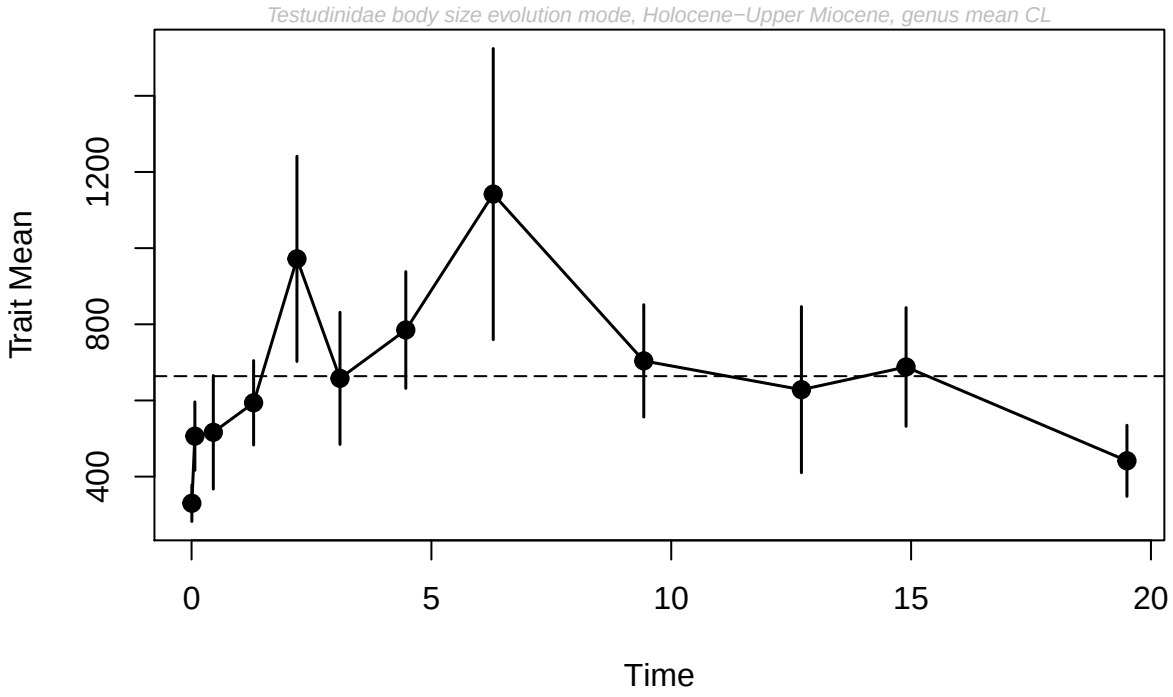


Figure 25: paleoTS plot with genus mean, all

continental (excluding insular species)

genera (continental)

Table 11: paleoTS object, continental

tt	nn	mm	vv
0.00585	18	240.3544	11701.08
0.06885	6	397.4606	50619.39
0.45350	5	416.9341	200982.12
1.29350	7	346.8484	66240.07
2.19700	7	1103.1067	595507.93
3.09400	6	725.4156	414253.29
4.46600	6	771.3833	259173.08
6.28900	4	1054.4375	531455.93
9.42700	9	703.9570	195766.19
12.71400	6	628.3020	285258.36
14.89500	7	687.9619	169914.58
19.50000	9	441.5420	78467.65

Table 12: Model-fitting results for testudinidae, genera, continental

	logL	K	AICc	Akaike.wt
GRW	-77.27805	2	160.0561	0.077
URW	-78.24092	1	158.9263	0.135
Stasis	-74.94957	2	155.3991	0.788

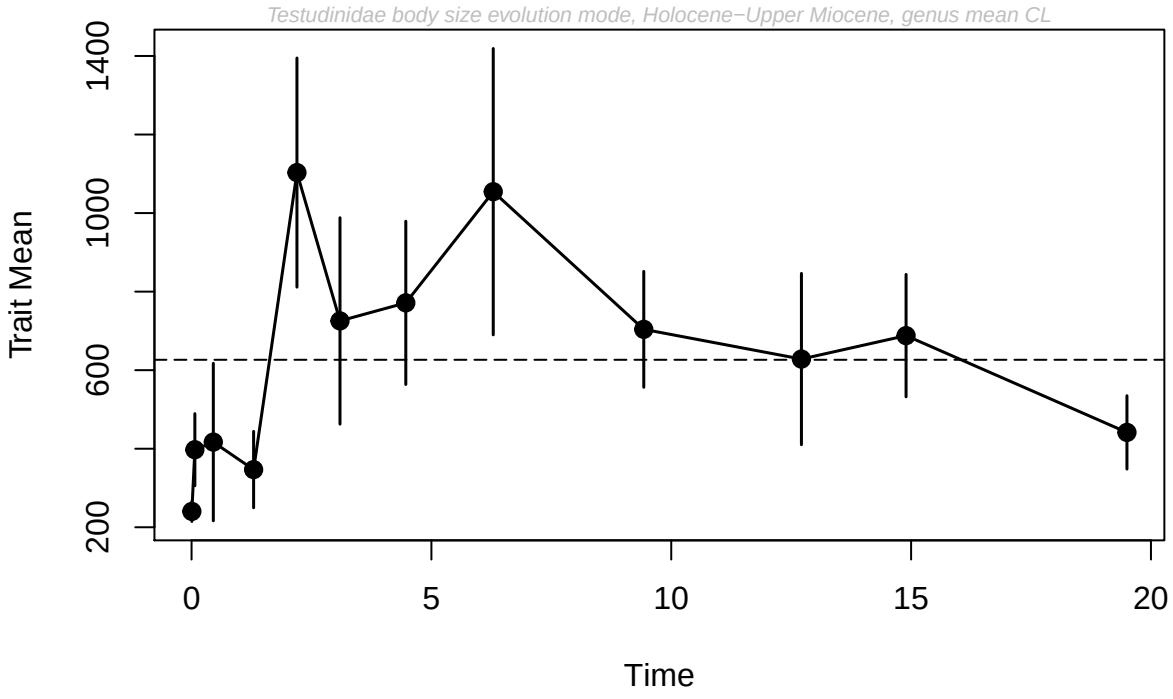


Figure 26: paleoTS plot with genus mean, continental

insular (excluding continental)

genera (insular)

Table 13: paleoTS object, insular

tt	nn	mm	vv
0.00585	13	416.5655	80682.22
0.06885	4	727.5938	14997.58
0.45350	3	748.8333	142649.08
1.29350	6	829.6744	112964.44
2.19700	3	1178.3333	821158.33
3.09400	4	449.4375	27058.77
4.46600	2	826.1667	15196.06
6.28900	1	1850.0000	0.00

Table 14: Model-fitting results for testudinidae, genera, insular

	logL	K	AICc	Akaike.wt
GRW	-52.51109	2	112.0222	0.230
URW	-53.67334	1	110.1467	0.586
Stasis	-52.73284	2	112.4657	0.184

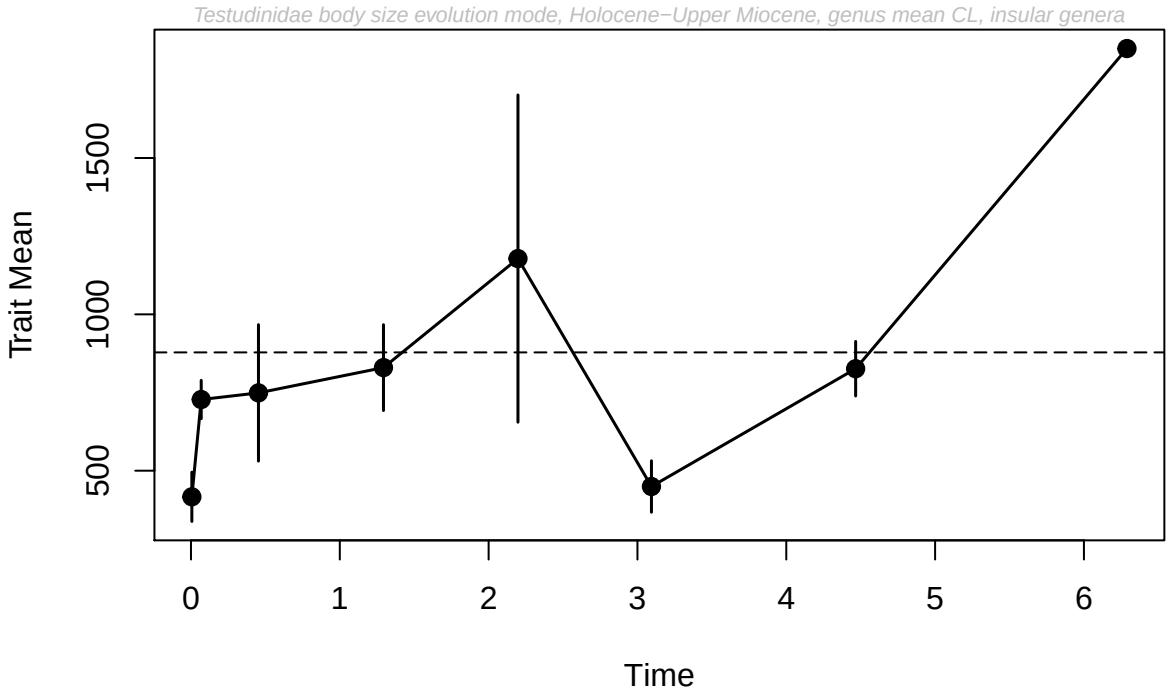


Figure 27: paleoTS plot with genus mean, insular

per continent

Europe, genera

Table 15: paleoTS object, Europe

tt	nn	mm	vv
0.00585	2	148.8559	3338.406
0.06885	3	616.6667	138802.333
0.45350	3	377.8167	89203.953
1.29350	5	697.3717	218431.974
2.19700	2	895.0000	1110050.000
3.09400	3	453.3333	39433.333
4.46600	5	1215.8667	159317.256
6.28900	2	838.3750	875495.281
9.42700	6	800.0508	263434.389
12.71400	5	653.9625	351634.528
14.89500	5	772.0000	223154.375
19.50000	5	533.8533	183706.682

Table 16: Model-fitting results for testudinidae, genera, Europe

	logL	K	AICc	Akaike.wt
GRW	-84.14010	2	173.7802	0.006
URW	-85.90727	1	174.2590	0.005
Stasis	-79.01365	2	163.5273	0.990

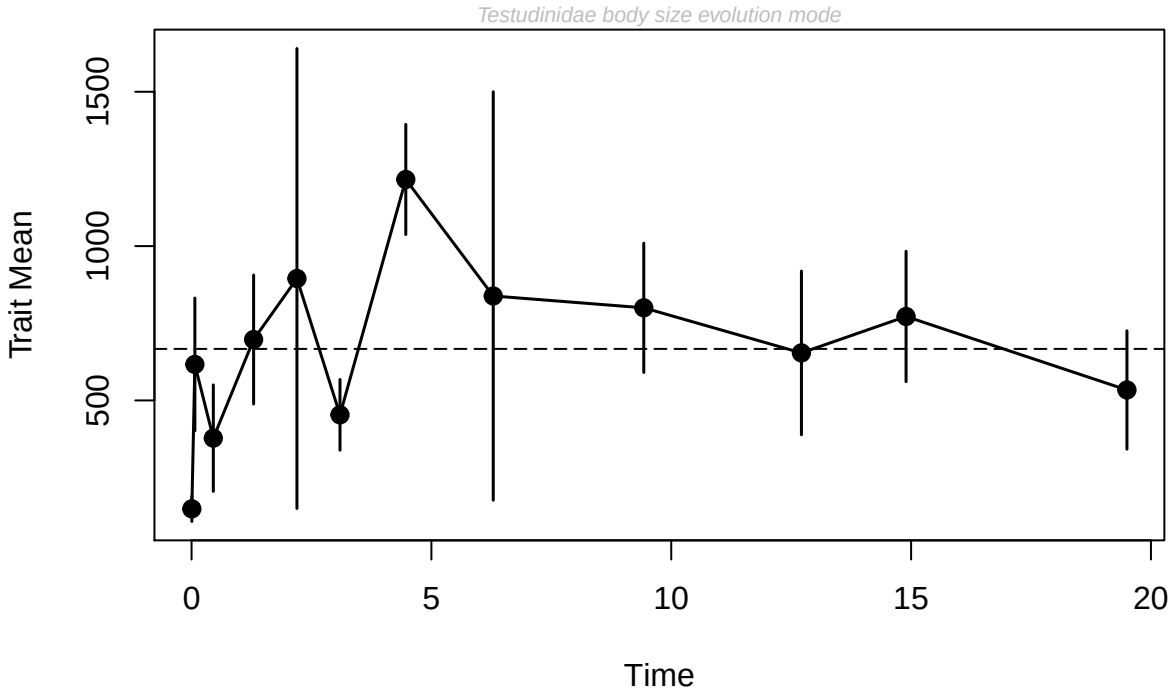


Figure 28: Genera, Europe

Europe, smaller original bins (see Table 2), genera, continental

Table 17: paleoTs object, Europe, continental

tt	nn	mm	vv
0.00585	2	149.5381	3450.8267
0.06885	1	187.0000	0.0000
0.45350	2	205.4750	198.0050
1.29350	2	204.9292	23.1767
2.19700	1	1420.0000	0.0000
3.09400	1	232.5000	0.0000
4.46600	3	1475.6667	57926.3333
6.28900	2	663.3750	473607.7812
9.42700	6	800.0508	263434.3893
12.71400	5	653.9625	351634.5281
14.89500	5	772.0000	223154.3750
19.50000	5	533.8533	183706.6821

Table 18: Model-fitting results for testudinidae, genera, Europe, continental

	logL	K	AICc	Akaike.wt
GRW	-87.93137	2	181.3627	0.009
URW	-92.56882	1	187.5821	0.000
Stasis	-83.21073	2	171.9215	0.991

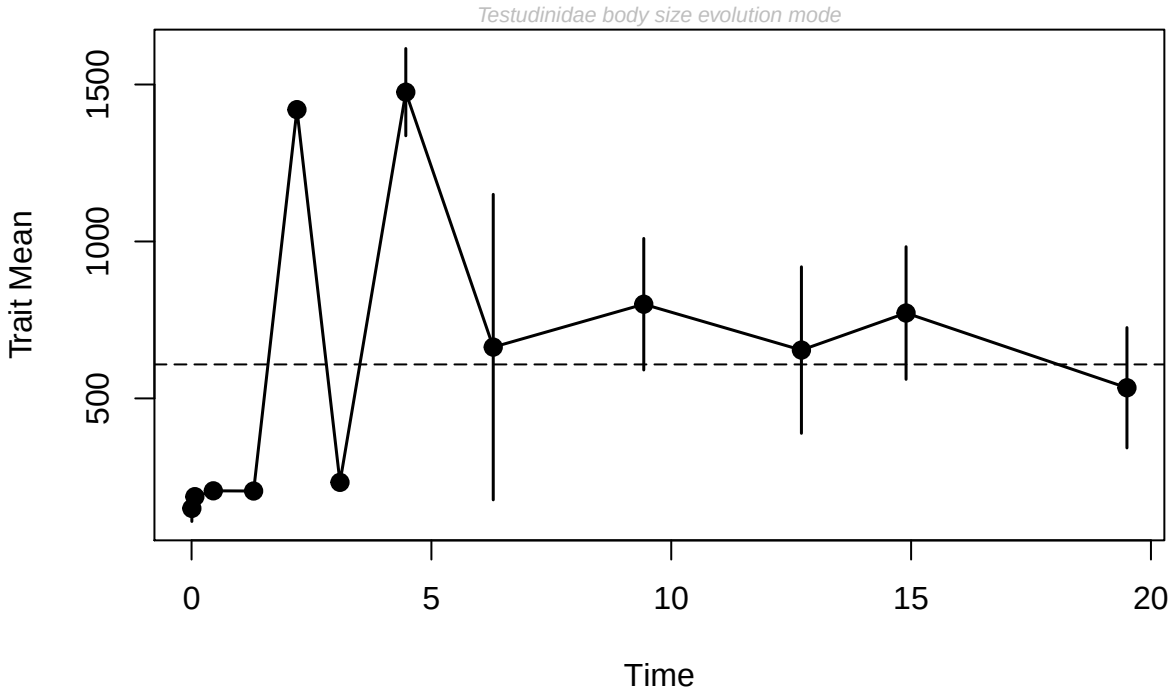


Figure 29: paleoTS, genera, Europe, continental

Europe, smaller original bins (see Table 2), genera, insular

Table 19: paleoTs object, Europe, insular

tt	nn	mm	vv
0.00585	1	187.5077	0.00
0.06885	2	831.5000	684.50
0.45350	1	722.5000	0.00
1.29350	4	835.0833	168423.36
2.19700	2	1005.0000	1462050.00
3.09400	3	451.6667	40558.33
4.46600	2	826.1667	15196.06
6.28900	1	1850.0000	0.00

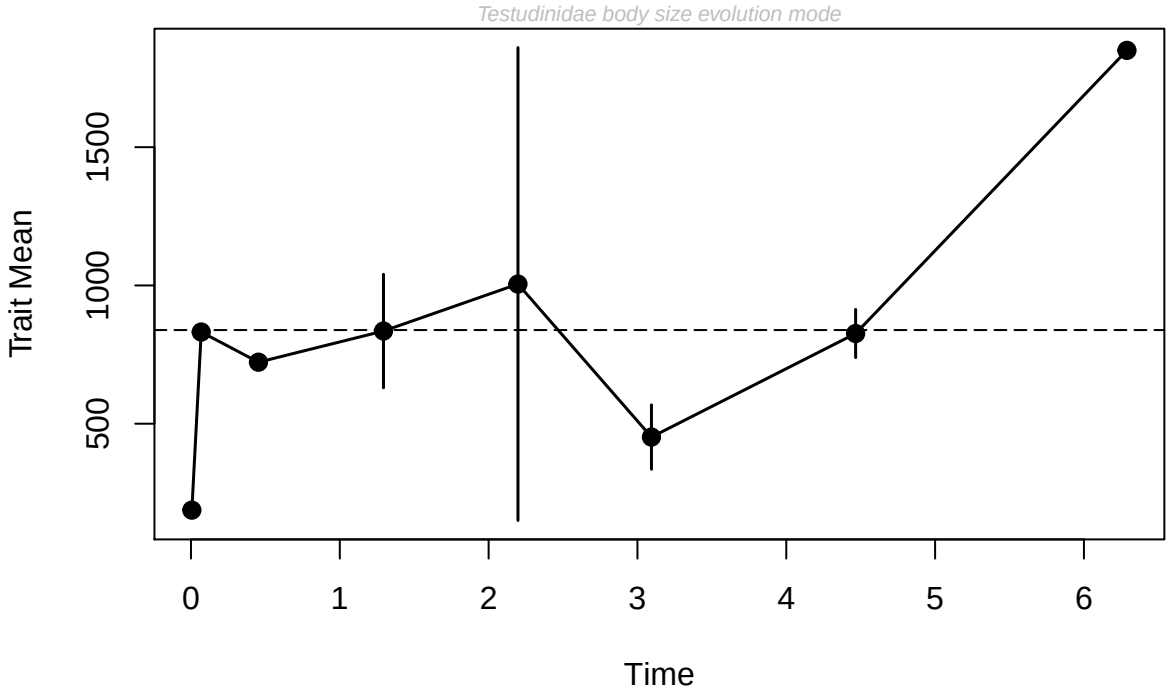


Figure 30: paleoTS, genera, Europe, insular

Table 20: Model-fitting results for testudinidae, genera, Europe, insular

	logL	K	AICc	Akaike.wt
GRW	-67.12192	2	141.2438	0.000
URW	-57.51634	1	117.8327	0.074
Stasis	-52.89638	2	112.7928	0.926

Eurasia, genera

Table 21: paleoTS object, all data

tt	nn	mm	vv
0.00585	6	210.8687	10460.89
0.06885	4	530.0000	122579.33
0.45350	3	377.8167	89203.95
1.29350	7	777.5579	162641.14
2.19700	5	909.6667	562217.22
3.09400	5	892.0000	381770.00
4.46600	6	1048.0556	296417.22
6.28900	3	1208.9167	849651.02
9.42700	6	800.0508	263434.39
12.71400	5	653.9625	351634.53
14.89500	5	772.0000	223154.38
19.50000	5	513.8533	162399.35

Table 22: Model-fitting results for testudinidae, genera, Eurasia

	logL	K	AICc	Akaike.wt
GRW	-78.25066	2	162.0013	0.039
URW	-78.39530	1	159.2350	0.154
Stasis	-75.21099	2	155.9220	0.807

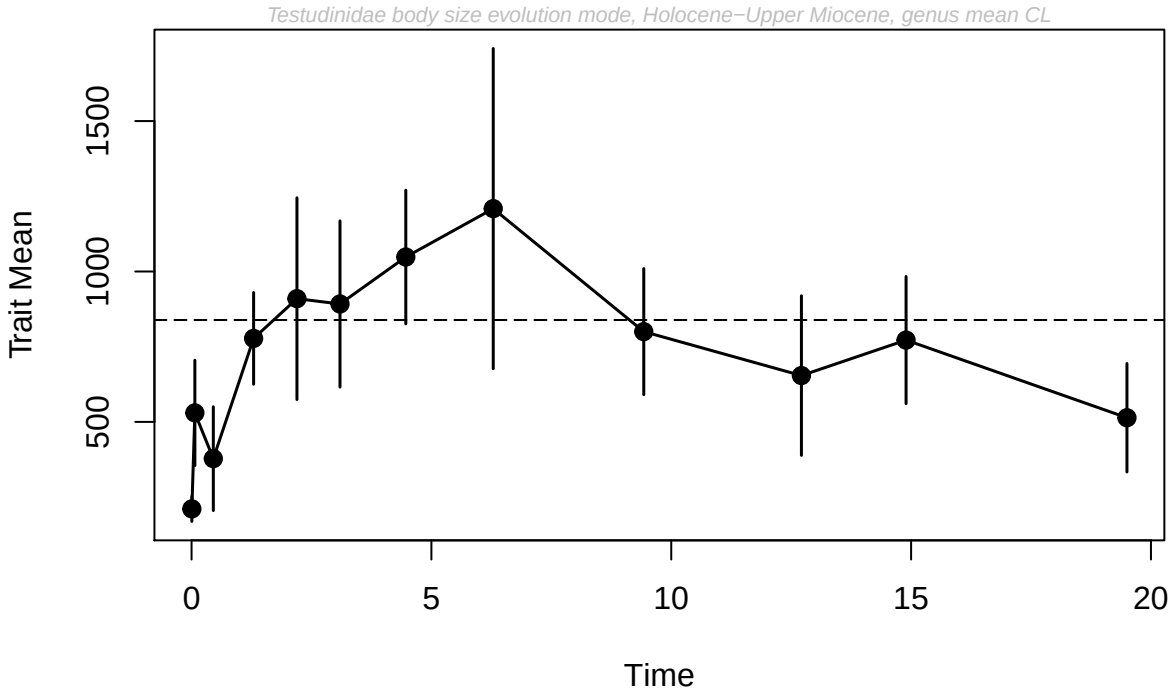


Figure 31: paleoTS, genera, Eurasia

Eurasia, genera, continental

Table 23: paleoTS object, all data

tt	nn	mm	vv
0.00585	6	210.6223	10502.932
0.06885	2	228.5000	3444.500
0.45350	2	205.4750	198.005
1.29350	4	595.5388	191487.404
2.19700	4	1044.5833	442006.250
3.09400	3	1110.8333	581102.083
4.46600	4	1159.0000	439728.667
6.28900	3	1092.2500	788605.188
9.42700	6	800.0508	263434.389
12.71400	5	653.9625	351634.528
14.89500	5	772.0000	223154.375
19.50000	5	513.8533	162399.349

Table 24: Model-fitting results for testudinidae, genera, Eurasia, continental

	logL	K	AICc	Akaike.wt
GRW	-74.89025	2	155.2805	0.211
URW	-75.10165	1	152.6477	0.787
Stasis	-79.85118	2	165.2024	0.001

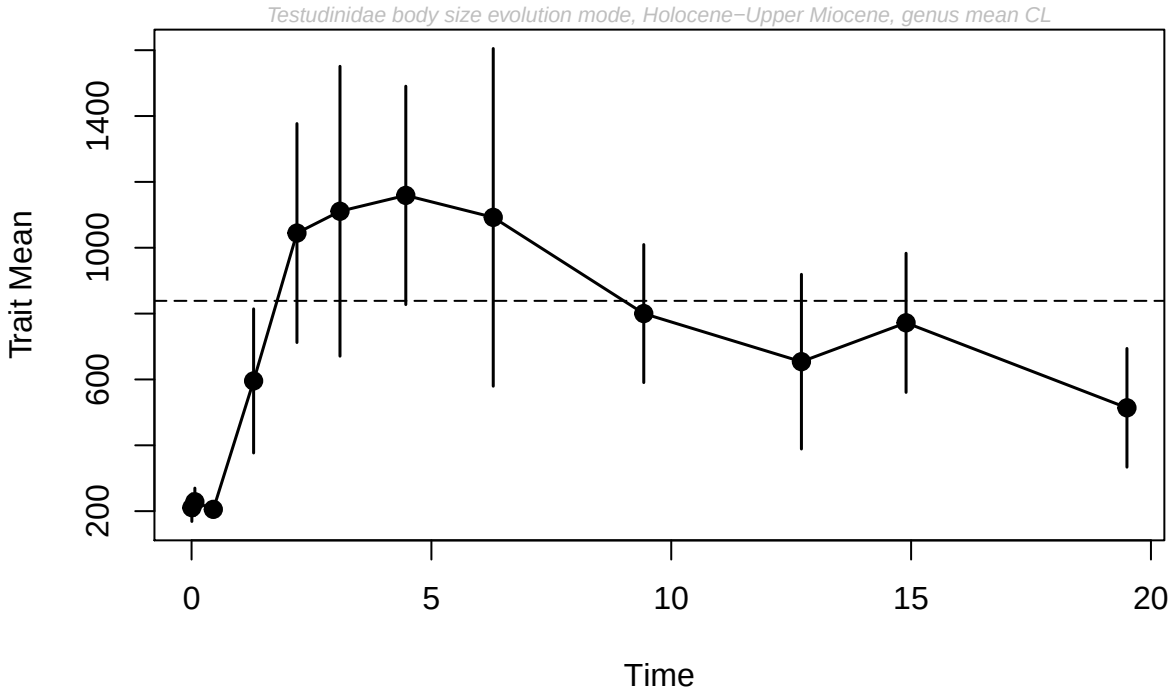


Figure 32: paleoTS, genera, Eurasia, continental

Eurasia, smaller original bins (See Table 2), genera, insular

Table 25: paleoTS object, all data

tt	nn	mm	vv
0.00585	5	230.9239	10020.53
0.06885	3	644.3333	105436.33
0.45350	1	722.5000	0.00
1.29350	6	882.0356	105684.08
2.19700	5	953.6667	652233.89
3.09400	5	891.0000	383430.00
4.46600	3	620.4444	134562.93
6.28900	2	1900.0000	5000.00
19.50000	1	800.0000	0.00

Table 26: Model-fitting results for testudinidae, genera, Eurasia, insular

	logL	K	AICc	Akaike.wt
GRW	-61.85159	2	130.1032	0.070
URW	-62.38003	1	127.4267	0.265
Stasis	-59.59249	2	125.5850	0.666

Locality	Latitude	Longitude
Municipio de Villagrán, Tamaulipas	24.469253	-99.185175
Indian Cave, Middle Caicos	21.831000	-71.808000
Indian Cave, Middle Caicos	21.831000	-71.808000
Coralie, Grand Turk	21.503500	-71.140400
Coralie, Grand Turk	21.503500	-71.140400
Coralie, Grand Turk	21.503500	-71.140400

Locality	Latitude	Longitude
Coralie, Grand Turk	21.503500	-71.140400
Etseré	-22.661500	43.731300
Etseré	-22.661500	43.731300
Ambositra	-20.539400	47.247200
Devil's Den Sinkhole, Levy County, Florida	29.407066	-82.476023
Pomongwe Cave, Matobo National Park, southwest Zimbabwe	-20.547412	28.513674
Yonaguni-shima, Ryuku Islands	24.458892	122.995001
Little Salt Spring, Florida	27.075315	-82.233057
Little Salt Spring, Florida	27.075315	-82.233057
Little Salt Spring, Florida	27.075315	-82.233057
Little Salt Spring, Florida	27.075315	-82.233057
Zubbio di Cozzo San Pietro	38.102577	13.509383
Banana Hole, New Providence Island	25.014961	-77.522338
Friesenhahn Cave, Bexar County, Texas	29.000000	-98.000000
Sabertooth Camel Maze, Dry Cave (UTEP 5), Eddy County, New Mexico	32.000000	-104.000000
Lang Rongrien Rockshelter, Krabi, Thailand	8.179722	98.880556
Arroyo Toropí, Corrientes	-29.917100	-59.475500
Ingleside Local Fauna, San Patricio County, Texas	27.000000	-96.000000
Ingleside Local Fauna, San Patricio County, Texas	27.000000	-96.000000
Mona Island	18.087000	-67.889200
Zebbug and Gahr Dalam Cave deposits	35.890000	14.443000
Arredondo IIA, Alachua County, Florida	29.600000	-82.400000
Bayaguana, Los Haitises, San Cristobal	18.744900	-69.636800
Sombrero Island	18.588901	-63.426000
Navassa Island	18.408300	-75.010700
Cueva del Papayo, Pedernales	17.854400	71.499700
Cueva del Papayo, Pedernales	17.854400	71.499700
Cueva del Papayo, Pedernales	17.854400	71.499700
Cueva del Papayo, Pedernales	17.854400	71.499700
Reddick IA+B, Marion County, Florida	29.100000	-82.300000
Reddick IA+B, Marion County, Florida	29.100000	-82.300000

Locality	Latitude	Longitude
Reddick IA+B, Marion County, Florida	29.100000	-82.300000
Quebrada de Ñuapua, Chuquisaca department	-20.530741	-62.999075
Melbourne, Brevard County, Florida	28.100000	-80.600000
Reddick IA+B, Marion County, Florida	29.100000	-82.300000
Reddick IA+B, Marion County, Florida	29.100000	-82.300000
Reddick IA+B, Marion County, Florida	29.100000	-82.300000
Surprise Cave, Alachua, Florida	29.803141	-82.504513
Surprise Cave, Alachua, Florida	29.803141	-82.504513
Surprise Cave, Alachua, Florida	29.803141	-82.504513
Surprise Cave, Alachua, Florida	29.803141	-82.504513
Surprise Cave, Alachua, Florida	29.803141	-82.504513
Surprise Cave, Alachua, Florida	29.803141	-82.504513
Surprise Cave, Alachua, Florida	29.803141	-82.504513
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Surprise Cave, Alachua, Florida	29.803141	-82.504513
Surprise Cave, Alachua, Florida	29.803141	-82.504513
Surprise Cave, Alachua, Florida	29.803141	-82.504513
Surprise Cave, Alachua, Florida	29.803141	-82.504513
Surprise Cave, Alachua, Florida	29.803141	-82.504513
Surprise Cave, Alachua, Florida	29.803141	-82.504513
Orange Lake 2 miles south, Marion County, Florida	29.400000	-82.200000
Cova del Rinoceront, eastern Garraf Massif, Can´Aymerich quarry, Castelldelfs	41.273600	1.960900
Libertador San Martín north bank Ensenada stream, 15 km E Diamante, Entre Rios Province	-32.087600	-60.486300
Pecos River near Melena and Acme, 10-15 km NE Roswell, Chaves County, New Mexico	33.470000	-104.530000
Haile, Alachua County, Florida	29.800000	-82.100000
Haile, Alachua County, Florida	29.800000	-82.100000
Haile, Alachua County, Florida	29.800000	-82.100000
Haile, Alachua County, Florida	29.800000	-82.100000
Haile, Alachua County, Florida	29.800000	-82.100000

Locality	Latitude	Longitude
Haile, Alachua County, Florida	29.800000	-82.100000
Haile, Alachua County, Florida	29.800000	-82.100000
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Haile, Alachua County, Florida	29.800000	-82.100000
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Haile, Alachua County, Florida	29.800000	-82.100000
Haile, Alachua County, Florida	29.800000	-82.100000
Haile, Alachua County, Florida	29.800000	-82.100000
Haile, Alachua County, Florida	29.800000	-82.100000
Haile, Alachua County, Florida	29.800000	-82.100000
Haile, Alachua County, Florida	29.800000	-82.100000
Haile, Alachua County, Florida	29.800000	-82.100000
Cragin Quarry Local Fauna, Meade County, Kansas	37.224200	-100.417600
Smith’s Parrish, No. 3Verdmont Valley Close	32.312800	-64.730800
Smith’s Parrish, No. 3Verdmont Valley Close	32.312800	-64.730800
Santa Clara	22.460300	-79.955300
Texas	33.286000	-101.129600
Coleman 2A	28.801494	-82.070488
Coleman 2A	28.801494	-82.070488
Coleman 2A	28.801494	-82.070488
Coleman 2A	28.801494	-82.070488
Coleman 2A	28.801494	-82.070488
Coleman 2A	28.801494	-82.070488
Coleman 2A	28.801494	-82.070488
Coleman 2A	28.801494	-82.070488
Coleman 2A	28.801494	-82.070488
Coleman 2A	28.801494	-82.070488
Coleman 2A	28.801494	-82.070488
Coleman 2A	28.801494	-82.070488
Adeje, Tenerife	28.119300	-16.735600

Locality	Latitude	Longitude
Adeje, Tenerife	28.119300	-16.735600
Callao de Fañabé, Tenerife	28.109815	-16.730603
Callao de Fañabé, Tenerife	28.109815	-16.730603
Caverna de Gràcia, Güell park, Barcelona	41.400000	2.150000
Caverna de Gràcia, Güell park, Barcelona	41.400000	2.150000
Cova de Gràcia, Park Güell, Barcelona	41.413600	2.152800
Cova de Gràcia, Park Güell, Barcelona	41.413600	2.152800
Kénitra, Guilloux quarry, near Rabat	34.300000	-6.600000
Saint-Estève-Janson, l'Escale Cave (Bouches du Rhône)	43.683300	5.383300
Saint-Estève-Janson, l'Escale Cave (Bouches du Rhône)	43.683300	5.383300
Gilliland local fauna, Burnett Ranch, 7 miles W of Vera, Knox County, Texas	33.800000	-99.500000
Gilliland local fauna, Burnett Ranch, 7 miles W of Vera, Knox County, Texas	33.800000	-99.500000
Gilliland local fauna, Burnett Ranch, 7 miles W of Vera, Knox County, Texas	33.800000	-99.500000
Gilliland local fauna, Burnett Ranch, 7 miles W of Vera, Knox County, Texas	33.800000	-99.500000
Soave, Zoppega 2 cave, Verona	45.420000	11.250000
Soave, Zoppega 2 cave, Verona	45.420000	11.250000
Flores	-8.683452	121.072468
Rock-Cavities, Gibraltar Peninsula	36.120300	-5.341900
Río Tomayate, Apopa Municipality	13.783333	89.166660
Cedazo local fauna, Aguascalientes, Mexico	21.824007	-102.368738
Cedazo local fauna, Aguascalientes, Mexico	21.824007	-102.368738
Cedazo local fauna, Aguascalientes, Mexico	21.824007	-102.368738
Cedazo local fauna, Aguascalientes, Mexico	21.824007	-102.368738
Cueva de la Victoria-1 (CV-1), Carthagène, Murcia	37.616700	-0.866700
Leisey Shell Pit 1A, Hillsborough County, Florida	27.700000	-82.500000
Leisey Shell Pit 1A, Hillsborough County, Florida	27.700000	-82.500000
Leisey Shell Pit 1A, Hillsborough County, Florida	27.700000	-82.500000
Sima del Elefante TE14, Sierra de Atapuerca, Burgos	42.330000	-3.510000
Leisey Shell Pit 1A, Hillsborough County, Florida	27.700000	-82.500000
Leisey Shell Pit 1A, Hillsborough County, Florida	27.700000	-82.500000
Leisey Shell Pit 2, Hillsborough County, Florida	27.700000	-82.500000

Locality	Latitude	Longitude
Haile, Alachua County, Florida	29.800000	-82.100000
Haile, Alachua County, Florida	29.800000	-82.100000
Haile, Alachua County, Florida	29.800000	-82.100000
Haile, Alachua County, Florida	29.800000	-82.100000
Haile, Alachua County, Florida	29.800000	-82.100000
Haile, Alachua County, Florida	29.800000	-82.100000
Haile, Alachua County, Florida	29.800000	-82.100000
Haile, Alachua County, Florida	29.800000	-82.100000
Haile, Alachua County, Florida	29.800000	-82.100000
Haile, Alachua County, Florida	29.800000	-82.100000
Haile, Alachua County, Florida	29.800000	-82.100000
Cala Es Pous near Ciutadella, Minorca	40.028500	3.834700
Gerani-Höhle an der Nordküste Kretamin der Nähe von Rethymnon	35.300000	24.500000
Zourida-Höhle	35.300000	24.500000
Ghar Dalam	35.836423	14.528051
Ghar Dalam	35.836423	14.528051
Ghar Dalam	35.836423	14.528051
Obermaintor, Ebensfeld (Lichtenfels), Franken	50.068844	10.951014
Sal Island	16.731953	-22.936789
Tres Hermanas, Manila, Luzon	14.589800	121.108900
Tres Hermanas, Manila, Luzon	14.589800	121.108900
Sierra de Quibas, Abanilla, Murcia	38.300000	-1.050000
San Pedro, Curaçao	12.383700	-69.146500
San Pedro, Curaçao	12.383700	-69.146500
San Pedro, Curaçao	12.383700	-69.146500
Java Island	-7.288900	109.522500
Bumiayu, Java Island	-7.288900	109.522500
Texas	33.286000	-101.129600
Kansas	39.634780	-100.388580
Zhejiang	29.141640	119.788900
Guangxi	23.568900	108.682200

Locality	Latitude	Longitude
Lakonia	36.900000	22.600000
Dmanisi	41.320000	44.350000
Pujo d'es Fum, Formentera, Balearic Islands	38.800000	1.400000
Drimolon, Sterkfontein, Krugersdorp District, Gauteng Province	-26.017052	27.733681
Inglis 1C, Florida	29.011396	-82.678062
Inglis 1C, Florida	29.011396	-82.678062
Inglis 1C, Florida	29.011396	-82.678062
Inglis 1C, Florida	29.011396	-82.678062
Inglis 1C, Florida	29.011396	-82.678062
Inglis 1C, Florida	29.011396	-82.678062
Le Ville, Upper Valdarno	43.483300	12.083300
Fonelas P-1, Guadix Basin	37.417000	-3.167000
Inglis 1A, Florida	29.011396	-82.678062
Inglis 1A, Florida	29.011396	-82.678062
Inglis 1A, Florida	29.011396	-82.678062
Inglis 1A, Florida	29.011396	-82.678062
Inglis 1A, Florida	29.011396	-82.678062
Inglis 1A, Florida	29.011396	-82.678062
Inglis 1A, Florida	29.011396	-82.678062
Inglis 1A, Florida	29.011396	-82.678062
Inglis 1A, Florida	29.011396	-82.678062
Inglis 1A, Florida	29.011396	-82.678062
Inglis 1A, Florida	29.011396	-82.678062
Inglis 1A, Florida	29.011396	-82.678062
Inglis 1A, Florida	29.011396	-82.678062
Inglis 1A, Florida	29.011396	-82.678062
Lesbos Island, F-Site	39.500000	26.500000
Monte Tuttavista VII mustelide, Sardinia	40.383300	9.700000
Sulawesi (Celebes), Indonesia	-1.847900	120.527900
Caballo Local Fauna, Palomas Basin, Sierra County, New Mexico	32.970000	-107.310000

Locality	Latitude	Longitude
Sulawesi (Celebes), Indonesia	-1.847900	120.527900
Siwalik	27.695646	82.386439
Texas	33.286000	-101.129600
Punjab	31.047000	75.368200
Gerogia (Caucasus)	41.106300	46.557240
Khatlon	37.712500	69.024500
Ahl al Oughlam (near Casablanca)	33.593100	-7.616400
Ahl al Oughlam (near Casablanca)	33.593100	-7.616400
Ahl al Oughlam (near Casablanca)	33.593100	-7.616400
Ahl al Oughlam (near Casablanca)	33.593100	-7.616400
Ahl al Oughlam (near Casablanca)	33.593100	-7.616400
Milia, Grevena, W Macedonia	40.179100	21.475600
Milia, Grevena, W Macedonia	40.179100	21.475600
Cova de Ca Na Reia, Eivissa, Ibiza	38.909100	1.426700
North Cita Canyon (Middle Stratum), Randall County, Texas	34.900000	-101.600000
Laetoli, Tanzania	-3.233457	35.165111
Tha Chang area, Chaloem Pra Kiat district, Nakhon Ratchasima Province	14.987000	102.335000
Tha Chang area, Chaloem Pra Kiat district, Nakhon Ratchasima Province	14.987000	102.335000
Sawrock Canyon local fauna, Seward County, Kansas	37.000000	-100.000000
Sawrock Canyon local fauna, Seward County, Kansas	37.000000	-100.000000
Sand Draw local fauna, Brown County, Nebraska	42.700000	-100.000000
South Africa	-26.990000	27.490000
Capo Mannu near San Vero Milis, base of D4 dune, Sardinia	40.040900	8.384500
Northwest of Naipli	29.190000	76.750000
Northwest of Naipli	29.190000	76.750000
Barranco de las Ballenas, Las Palmas, Gran Canaria	28.113388	-15.446308
Cuchillo Negro Creek Local Fauna, Engle Basin, Sierra County, New Mexico	33.195000	-107.257000
Sawmill Sink, Abaco	26.283300	-77.200000
Sawmill Sink, Abaco	26.283300	-77.200000
Sawmill Sink, Abaco	26.283300	-77.200000
Sawmill Sink, Abaco	26.283300	-77.200000

Locality	Latitude	Longitude
Cita Canyon, UCMP V-3721, Harrell Ranch, Randall County, Texas	34.900000	-101.600000
Serrat-d´en-Vacquer near Perpignan, Pyrénées-Orientales	42.880000	2.880000
Megalo Emvolon 1 (MEV), 20 km SW Thessaloniki	40.501700	22.817700
Megalo Emvolon 1 (MEV), 20 km SW Thessaloniki	40.501700	22.817700
Megalo Emvolon 1 (MEV), 20 km SW Thessaloniki	40.501700	22.817700
W??e 1	52.350000	22.150000
Nea Kallikratia, western Chalkidiki Peninsula, Thessaloniki area	40.314600	23.046200
Epanomi (EPN I), western Chalkidiki Peninsula, Thessaloniki area	40.404600	22.898000
Epanomi (EPN II), western Chalkidiki Peninsula, Thessaloniki area	40.404600	22.898000
Nea Michaniona, western Chalkidiki Peninsula, Thessaloniki area	40.473100	22.838500
Altan-Teli main fossiliferous bed (Dzereg valley)	47.100000	93.167000
Altan-Teli main fossiliferous bed (Dzereg valley)	47.100000	93.167000
Liossati, Kiourka	38.169200	23.843400
Kanapoi	2.382699	36.241596
Punta Nati near Ciutadella, Minorca	40.051000	3.826000
Jambol	42.338400	26.481400
Pikermi	38.001500	23.942600
Pellatal Phosphate Member, Varswater Formation, E Quarry Langebaanweg	-32.964906	18.172959
Pellatal Phosphate Member, Varswater Formation, E Quarry Langebaanweg	-32.964906	18.172959
Lee Creek Mine, Yorktown Sample, Beaufort County, North Carolina	35.400000	-76.800000
Rexroad local fauna (Fox Canyon locality 3), Meade County, Kansas	37.200000	-100.300000
Rexroad local fauna (Fox Canyon locality 3), Meade County, Kansas	37.200000	-100.300000
Rexroad local fauna (Fox Canyon locality 3), Meade County, Kansas	37.200000	-100.300000
Mnaidra Gap, Malta	35.900000	14.500000
Corrida, Malta	35.874900	14.510380
Corrida, Malta	35.874900	14.510380
Santee, Knox County, Nebraska	42.000000	-97.000000
Pauk Twonship	21.455300	94.515300
Pauk Twonship	21.455300	94.515300
Allatini, eastern part of Thessaloniki, western Chalkidiki peninsula	40.589900	22.971600
Pylea, eastern part of Thessaloniki, western Chalkidiki peninsula	40.599400	22.987600

Locality	Latitude	Longitude
UCMP V71137, Turlock Lake 10, Stanislaus County, California	37.600000	-120.600000
UCMP V81248, Turlock Lake 11, Stanislaus County, California	37.600000	-120.600000
Torrente Melacce, Cinigiano (GR)	42.883300	11.400000
Santa-Vittoria d'Alba	44.700000	7.933300
Samos 1	37.800000	26.900000
Puerto de la Cadena, Murcia	38.000000	-1.166670
Buis Ranch Local Fauna, Beaver County, Oklahoma	36.800000	-100.500000
Buis Ranch Local Fauna, Beaver County, Oklahoma	36.800000	-100.500000
Nikiti 2, Chalkidiki, Macedonia	40.220120	23.668843
Crevillente 2	38.270000	-0.800000
Prottes	48.389600	16.745400
Prottes	48.389600	16.745400
Prottes	48.389600	16.745400
Prottes	48.389600	16.745400
Prottes	48.389600	16.745400
Prottes	48.389600	16.745400
Prottes	48.389600	16.745400
Prottes	48.389600	16.745400
Prottes	48.389600	16.745400
Prottes	48.389600	16.745400
Prottes	48.389600	16.745400
Prottes	48.389600	16.745400
Platania, Drama basin	41.196780	24.395000
Djebel Krechem	35.035867	9.889738
Barstow Beds, San Bernardino County, California	34.959210	-116.419390
Barstow Beds, San Bernardino County, California	34.959210	-116.419390
Barstow Beds, San Bernardino County, California	34.959210	-116.419390
Barstow Beds, San Bernardino County, California	34.959210	-116.419390
Cache Peak fauna, Tehachapi Mountains, Kern County, California	35.132190	-118.449000
San Nicolas, UCMP locality V4536	3.200000	-75.200000
Kohfidisch	47.166700	16.350000

Locality	Latitude	Longitude
Kohfidisch	47.166700	16.350000
Kohfidisch	47.166700	16.350000
Kohfidisch	47.166700	16.350000
Kohfidisch	47.166700	16.350000
Aveiras de Baixo, Azambuja	39.061311	-8.883992
UCMP V-3952, Ingram Creek site 8, Stanislaus County, California	37.600000	-120.800000
Cerro de los Batallones, Madrid	40.179400	-3.724600
Cerro de los Batallones, Madrid	40.179400	-3.724600
Cerro de los Batallones, Madrid	40.179400	-3.724600
Cerro de los Batallones, Madrid	40.179400	-3.724600
Ricardo Fauna, Mojave Desert, Kern County, California	35.300000	-118.500000
Ricardo Fauna, Mojave Desert, Kern County, California	35.300000	-118.500000
El Lugarejo (Arévalo), Ávilla, Castilla	41.056000	-4.717000
Hostalets de Piérola, Barcelone province, Cataluña, Vallés-Penedés basin	41.534900	1.768500
Holzmannsdorfberg bei St. Marein	47.016700	15.666700
McGehee Farm near Newberry, Alachua County, Florida	29.700000	-82.600000
Sant Quirze de Terrassa/de Galliners (del Vallès), Barcelona	41.383000	2.183000
Sant Quirze de Terrassa/de Galliners (del Vallès), Barcelona	41.383000	2.183000
Sant Quirze de Terrassa/de Galliners (del Vallès), Barcelona	41.383000	2.183000
Castell de Barbera	41.370000	2.183000
Iron Canyon Fauna, Mojave Desert, Kern County, California	35.300000	-118.500000
Altenstadt, 7 km S Illertissen	48.154200	10.117800
Gammelsdorf	48.549500	11.938200
Gammelsdorf	48.549500	11.938200
La Ciesma 1, Aragón	41.860000	-1.800000
La Ciesma 1, Aragón	41.860000	-1.800000
Abocador de Can Mata (els Hostalets de Pierola)(ACM/BDA), Vallés-Penedés basin, Cataluña	41.519000	1.728000
El Buste, Aragón	41.886000	-1.603000
Cerro del Otero, Palencia	42.010100	-4.528700
Illescas, Toledo	40.126500	-3.848900
Hohenhöwen, Engen, Hegau, southwestern Germany	47.835600	8.749000

Locality	Latitude	Longitude
Hohenhöwen, Engen, Hegau, southwestern Germany	47.835600	8.749000
Hohenhöwen, Engen, Hegau, southwestern Germany	47.835600	8.749000
Hohenhöwen, Engen, Hegau, southwestern Germany	47.835600	8.749000
Hohenhöwen, Engen, Hegau, southwestern Germany	47.835600	8.749000
Hohenhöwen, Engen, Hegau, southwestern Germany	47.835600	8.749000
Hohenhöwen, Engen, Hegau, southwestern Germany	47.835600	8.749000
Hohenhöwen, Engen, Hegau, southwestern Germany	47.835600	8.749000
Hohenhöwen, Engen, Hegau, southwestern Germany	47.835600	8.749000
Hohenhöwen, Engen, Hegau, southwestern Germany	47.835600	8.749000
Hohenhöwen, Engen, Hegau, southwestern Germany	47.835600	8.749000
Steinheim a. Albuch	48.693900	10.067800
Sansan, Gers (lake)	43.900000	-0.500000
Sansan, Gers (lake)	43.900000	-0.500000
Sansan, Gers (lake)	43.900000	-0.500000
Sansan, Gers (lake)	43.900000	-0.500000
Chañe, Segovia	41.339000	-4.425000
Belomechetskaya	44.400000	41.933000
Atascosa county, Texas	28.911531	28.911531
Wien-Kalksburg	48.120000	16.260000
Tarazona de Aragón	41.903000	-1.725000
Tarazona de Aragón	41.903000	-1.725000
Charneco do Lumiar	38.788676	-9.141269
Quinta da Farinheira	38.743489	-9.149534
Alcalá de Henares, Cerro del Viso (Barranco de los Mártires y Santos de la Humosa), Madrid	40.488200	-3.313400
Vallecas, Madrid	40.381500	-3.622400
Plum Point, Calvert County, Maryland	38.000000	-76.000000
Barajas, Madrid	40.483900	-3.567900
Beautiful Bone, Alta Guajira Peninsula, Cocinetas basin	11.613056	71.359167
Beautiful Bone, Alta Guajira Peninsula, Cocinetas basin	11.613056	71.359167
Beautiful Bone, Alta Guajira Peninsula, Cocinetas basin	11.613056	71.359167
Sandelzhausen	48.628300	11.796000

Locality	Latitude	Longitude
Sandelzhausen unterer Geröllmergel (B)	48.628300	11.796000
Monteagudo, Aragón	41.963000	-1.692000
Ghaba	21.398277	57.624068
Teiritzberg (T1 = 001/D/C), Korneuburg Basin, Lower Austria	48.366700	16.333300
Kirchdorf an der Iller	48.072800	10.142400
Arrisdrift	-28.550000	16.500000
Arrisdrift	-28.550000	16.500000
Arrisdrift	-28.550000	16.500000
Arrisdrift	-28.550000	16.500000
Arrisdrift	-28.550000	16.500000
Arrisdrift	-28.550000	16.500000
Arrisdrift	-28.550000	16.500000
Arrisdrift	-28.550000	16.500000
Can Mas near El Papiol, Barcelone province, Cataluña, Vallés-Penedés basin	41.433300	2.016700
Garvin Gullv, 2 mi. north of Navasota, Jl J . Grimes County, Texas, Garvin Gullv local fauna	30.420040	-96.090069
Auchas	-28.550000	16.500000
Auchas	-28.550000	16.500000
Auchas	-28.550000	16.500000
Auchas	-28.550000	16.500000
Neuville-aux-Bois, Loiret	48.067000	2.050000
Leithagebirge between Au and Loretto	47.915100	16.535800
Thomas Farm Local Fauna, Gilchrist County, Florida	29.700000	-82.600000
Thomas Farm Local Fauna, Gilchrist County, Florida	29.700000	-82.600000
Elisabethfeld (= Elisabeth Bay) area, northern Sperrgebiet	-26.916000	15.184000
Elisabethfeld (= Elisabeth Bay) area, northern Sperrgebiet	-26.916000	15.184000
Rusinga Island, Lake Victoria, Kenya	-0.407433	34.191822
Eggenburg-Schindergraben, Lower Austria	48.633300	15.817000
Saint-Gérand-le-Puy, Allier	46.258100	3.512000
Saint-Gérand-le-Puy, Allier	46.258100	3.512000

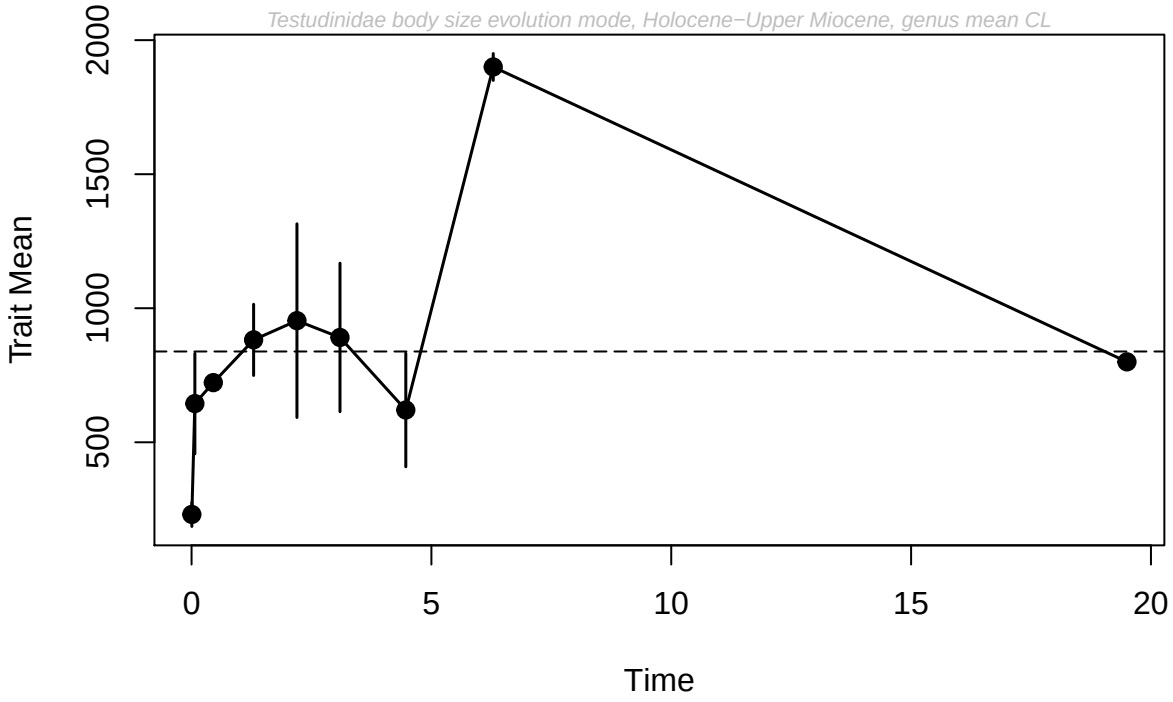

Figure 33: paleoTS, genera, Eurasia, insular

Genus	Taxon	CollNr	SCL	CCL	SCW	CCW	CH	PL	PW	es
Kinixys	Kinixys belliana	ZMB 37388	162.0	16.20	22.5	15.5	21.5	164.0	12.6	m
Aldabrachelys	Aldabrachelys gigantea	ZMB 51996	770.0	77.00	106.0	52.0	112.0	NA	NA	m
Astrochelys	Astrochelys yniphora	-	426.0	42.60	NA	NA	NA	NA	NA	m
Centrochelys	Centrochelys sulcata	ZMB 63203	215.0	21.50	29.5	16.5	27.0	214.0	14.8	m
Malacochersus	Malacochersus tornieri	ZMB 63174	153.0	15.30	17.0	10.5	14.0	149.0	9.8	m
Astrochelys	Astrochelys radiata	-	395.0	39.50	NA	NA	NA	NA	NA	m
Pyxis	Pyxis arachnoides	ZMB 37616	110.0	11.00	15.0	8.0	14.0	75.0	7.6	m
Kinixys	Kinixys homeana	ZMB 17747	193.0	19.30	25.0	14.0	21.0	175.0	11.8	m
Aldabrachelys	Aldabrachelys gigantea	ZMB 47494	870.0	87.00	116.0	57.0	110.0	NA	NA	m
Psammobates	Psammobates tentorius	ZMB 28782	111.0	11.10	15.0	8.5	14.0	95.0	7.9	m
Psammobates	Psammobates oculifer	ZMB 25439	119.0	11.90	17.0	9.0	14.5	99.0	8.4	m
Psammobates	Psammobates oculifer	ZMB 37472	107.0	10.70	15.0	8.4	13.5	106.0	8	m
Astrochelys	Astrochelys yniphora	-	307.0	30.70	NA	NA	NA	NA	NA	m
Homopus	Homopus aerolatus	ZMB 229	88.0	8.80	10.5	6.9	9.0	78.0	6.1	m
Homopus	Homopus signatus	ZMB 63173	94.0	9.40	12.5	7.7	11.0	82.0	5.6	m
Kinixys	Kinixys belliana	ZMB 63191	194.0	19.40	25.5	12.5	19.0	173.0	12	m
Astrochelys	Astrochelys radiata	-	285.0	28.50	NA	NA	NA	NA	NA	m
Kinixys	Kinixys belliana	ZMB 63192	174.0	17.40	24.5	11.5	20.5	143.0	11.1	m
Kinixys	Kinixys belliana	ZMB 63193	157.0	15.70	21.0	9.9	16.5	141.0	9.4	m
Aldabrachelys	Aldabrachelys gigantea	ZMB 37545	810.0	81.00	110.0	52.0	NA	NA	NA	m
Chersina	Chersina angulata	ZMB 49400	162.0	16.20	21.5	10.9	17.5	170.0	9.2	m
Chersina	Chersina angulata	ZMB 63181	170.0	17.00	23.0	11.4	19.0	169.0	10	m
Chersina	Chersina angulata	ZMB 63183	120.0	12.00	17.0	8.6	15.5	118.0	7.3	m
Chersina	Chersina angulata	ZMB 63182	136.0	13.60	18.0	9.9	16.0	138.0	8	m
Kinixys	Kinixys erosa	ZMB 63190	164.0	16.40	21.0	11.2	16.5	163.0	10.6	m
Centrochelys	Centrochelys sulcata	ZMB 37387	435.0	43.50	54.0	29.9	53.0	405.0	29.1	m
Indotestudo	Indotestudo travancorica	ZMB 37717	224.0	22.40	28.0	15.2	23.0	200.0	15.4	m
Stigmochelys	Stigmochelys pardalis	ZMB 37344	405.0	40.50	55.0	27.0	50.5	350.0	24.3	m
Stigmochelys	Stigmochelys pardalis	ZMB 63235	315.0	31.50	43.5	23.4	39.0	298.0	22.1	m

Genus	Taxon	CollNr	SCL	CCL	SCW	CCW	CH	PL	PW	es
Stigmochelys	Stigmochelys pardalis	ZMB 37495	297.0	29.70	41.5	21.4	36.0	271.0	19.2	m
Stigmochelys	Stigmochelys pardalis	ZMB 42400	345.0	34.50	46.5	24.0	40.0	285.0	21.3	m
Stigmochelys	Stigmochelys pardalis	ZMB 63232	350.0	35.00	46.0	23.9	45.0	303.0	21.1	m
Psammobates	Psammobates geometricus	ZMB 192	92.0	9.20	13.5	7.1	13.0	68.0	6.3	m
Chersina	Chersina angulata	-	181.9	18.19	NA	NA	NA	NA	NA	m
Aldabrachelys	Aldabrachelys gigantea	ZMB 47443	800.0	80.00	105.0	51.5	105.0	NA	NA	m
Astrochelys	Astrochelys yniphora	-	415.0	41.50	NA	NA	NA	NA	NA	m
Astrochelys	Astrochelys yniphora	-	370.0	37.00	NA	NA	NA	NA	NA	m
Aldabrachelys	Aldabrachelys gigantea	ZMB 51995	1030.0	103.00	138.0	NA	NA	NA	NA	m
Aldabrachelys	Aldabrachelys gigantea	ZMB ???	720.0	72.00	105.5	55.0	117.0	NA	NA	m
Cylindraspis	Cylindraspis triserrata	-	1100.0	110.00	NA	NA	NA	NA	NA	m
Cylindraspis	Cylindraspis vosmaeri	-	500.0	50.00	NA	NA	NA	NA	NA	m
Astrochelys	Astrochelys radiata	-	334.0	33.40	NA	NA	NA	NA	NA	m
Astrochelys	Astrochelys radiata	-	305.0	30.50	NA	NA	NA	NA	NA	m
Centrochelys	Centrochelys sulcata	-	830.0	83.00	NA	NA	NA	NA	NA	m
Psammobates	Psammobates geometricus	ZMB 186	105.0	10.50	13.5	7.4	13.0	90.0	6.9	m
Astrochelys	Astrochelys radiata	-	242.0	24.20	NA	NA	NA	NA	NA	m
Psammobates	Psammobates tentorius	ZMB 37627	116.0	11.60	15.0	9.4	14.5	117.0	8.9	m
Psammobates	Psammobates tentorius	ZMB 50571	95.0	9.50	12.0	7.3	12.0	79.0	7	m
Psammobates	Psammobates tentorius	ZMB 14766	81.0	8.10	10.5	6.8	10.0	67.0	5.9	m
Pyxis	Pyxis planicauda	-	114.0	11.40	NA	NA	NA	NA	NA	m
Pyxis	Pyxis planicauda	-	134.0	13.40	NA	NA	NA	NA	NA	m
Pyxis	Pyxis planicauda	-	120.0	12.00	NA	NA	NA	NA	NA	m
Psammobates	Psammobates oculifer	ZMB 16399	111.0	11.10	16.0	8.8	14.0	108.0	7.9	m
Psammobates	Psammobates oculifer	ZMB 14772	101.0	10.10	15.0	8.0	14.0	98.0	7.3	m
Psammobates	Psammobates oculifer	ZMB 24261	103.0	10.30	14.0	8.2	13.5	100.0	7.8	m
Psammobates	Psammobates oculifer	ZMB 37623	105.0	10.50	14.5	7.9	13.5	93.0	7.4	m
Kinixys	Kinixys belliana	ZMB 37489	180.0	18.00	24.0	12.0	20.5	176.0	11.8	m
Pyxis	Pyxis planicauda	-	160.0	16.00	NA	NA	NA	NA	NA	m
Psammobates	Psammobates geometricus	ZMB 50568	107.0	10.70	15.0	7.9	14.5	79.0	7.3	m
Aldabrachelys	Aldabrachelys gigantea	-	875.0	87.50	NA	NA	NA	NA	NA	m

Genus	Taxon	CollNr	SCL	CCL	SCW	CCW	CH	PL	PW	es
Aldabrachelys	Aldabrachelys gigantea	-	1190.0	119.00	NA	NA	NA	NA	NA	m
Chersina	Chersina angulata	-	202.0	20.20	NA	NA	NA	NA	NA	m
Chersina	Chersina angulata	-	351.0	35.10	NA	NA	NA	NA	NA	m
Astrochelys	Astrochelys yniphora	-	446.0	44.60	NA	NA	NA	NA	NA	m
Chersina	Chersina angulata	ZMB 37393	160.0	16.00	20.0	10.0	17.5	158.0	9.2	m
Kinixys	Kinixys erosa	ZMB 50198	271.0	27.10	31.5	18.5	26.0	231.0	15.9	m
Chersina	Chersina angulata	ZMB 37392	181.0	18.10	22.5	11.6	19.0	177.0	9.7	m
Psammobates	Psammobates oculifer	-	147.0	14.70	NA	NA	NA	NA	NA	m
Psammobates	Psammobates tentorius	-	145.0	14.50	NA	NA	NA	NA	NA	m
Pyxis	Pyxis arachnoides	-	150.0	15.00	NA	NA	NA	NA	NA	m
Psammobates	Psammobates geometricus	ZMB 185	118.0	11.80	18.0	9.1	16.5	112.0	8.2	m
Stigmochelys	Stigmochelys pardalis	-	720.0	72.00	NA	NA	NA	NA	NA	m
Chersina	Chersina angulata	-	179.3	17.93	NA	NA	NA	NA	NA	m
Astrochelys	Astrochelys radiata	-	355.0	35.50	NA	NA	NA	NA	NA	m
Pyxis	Pyxis planicauda	-	126.0	12.60	NA	NA	NA	NA	NA	m
Testudo	Testudo kleinmanni	-	144.0	14.40	NA	NA	NA	NA	NA	m
Cylindraspis	Cylindraspis indica	-	600.0	60.00	NA	NA	NA	NA	NA	m
Astrochelys	Astrochelys yniphora	-	361.0	36.10	NA	NA	NA	NA	NA	m
Astrochelys	Astrochelys yniphora	-	486.0	48.60	NA	NA	NA	NA	NA	m
Pyxis	Pyxis planicauda	-	148.0	14.80	NA	NA	NA	NA	NA	m
Pyxis	Pyxis arachnoides	-	111.0	11.10	NA	NA	NA	NA	NA	m
Pyxis	Pyxis arachnoides	-	110.0	11.00	NA	NA	NA	NA	NA	m
Pyxis	Pyxis arachnoides	-	80.0	8.00	NA	NA	NA	NA	NA	m
Kinixys	Kinixys lobatsiana	-	200.0	20.00	NA	NA	NA	NA	NA	m
Pyxis	Pyxis arachnoides	-	86.0	8.60	NA	NA	NA	NA	NA	m
Pyxis	Pyxis arachnoides	-	154.0	15.40	NA	NA	NA	NA	NA	m
Kinixys	Kinixys homeana	-	223.0	22.30	NA	NA	NA	NA	NA	m
Homopus	Homopus femoralis	-	168.0	16.80	NA	NA	NA	NA	NA	m
Pyxis	Pyxis planicauda	-	132.0	13.20	NA	NA	NA	NA	NA	m
Homopus	Homopus aerolatus	-	300.0	30.00	NA	NA	NA	NA	NA	m
Homopus	Homopus boulengeri	-	110.0	11.00	NA	NA	NA	NA	NA	m

Genus	Taxon	CollNr	SCL	CCL	SCW	CCW	CH	PL	PW	es
Kinixys	Kinixys erosa	-	400.0	40.00	NA	NA	NA	NA	NA	m
Chersina	Chersina angulata	ZMB 37479	148.0	14.80	20.0	10.1	17.0	142.0	9.5	m
Psammobates	Psammobates geometricus	-	165.0	16.50	NA	NA	NA	NA	NA	m
Homopus	Homopus solus	-	109.0	10.90	NA	NA	NA	NA	NA	m
Malacochersus	Malacochersus tornieri	-	180.0	18.00	NA	NA	NA	NA	NA	m
Chersina	Chersina angulata	-	153.5	15.35	NA	NA	NA	NA	NA	m
Pyxis	Pyxis arachnoides	-	144.0	14.40	NA	NA	NA	NA	NA	m
Kinixys	Kinixys belliana	-	230.0	23.00	NA	NA	NA	NA	NA	m
Aldabrachelys	Aldabrachelys gigantea	-	1140.0	114.00	NA	NA	NA	NA	NA	m
Astrochelys	Astrochelys radiata	-	400.0	40.00	NA	NA	NA	NA	NA	m
Chersina	Chersina angulata	-	166.4	16.64	NA	NA	NA	NA	NA	m
Chersina	Chersina angulata	-	171.6	17.16	NA	NA	NA	NA	NA	m
Cylindraspis	Cylindraspis peltastes	-	420.0	42.00	NA	NA	NA	NA	NA	m
Chersina	Chersina angulata	-	161.3	16.13	NA	NA	NA	NA	NA	m
Homopus	Homopus signatus	-	106.0	10.60	NA	NA	NA	NA	NA	m
Kinixys	Kinixys spekii	-	220.0	22.00	NA	NA	NA	NA	NA	m
Cylindraspis	Cylindraspis inepta	-	1000.0	100.00	NA	NA	NA	NA	NA	m
Kinixys	Kinixys natalensis	-	160.0	16.00	NA	NA	NA	NA	NA	m
Geochelone	Geochelone elegans	ZMB 63222	208.0	20.80	29.5	14.6	28.5	199.0	13.3	m
Geochelone	Geochelone elegans	ZMB 37523	245.0	24.50	32.0	16.6	32.0	228.0	14.6	m
Geochelone	Geochelone elegans	ZMB 63220	221.0	22.10	32.0	16.0	31.0	179.0	13.5	m
Geochelone	Geochelone elegans	ZMB 63221	220.0	22.00	31.0	15.4	27.0	209.0	14	m
Geochelone	Geochelone elegans	ZMB 63218	221.0	22.10	31.5	15.1	30.0	203.0	13.7	m
Geochelone	Geochelone platynota	ZMB 6096	222.0	22.20	29.5	15.1	27.0	NA	MA	m
Manouria	Manouria emys	-	600.0	60.00	NA	NA	NA	NA	NA	m
Indotestudo	Indotestudo forstenii	-	202.0	20.20	NA	NA	NA	NA	NA	m
Indotestudo	Indotestudo travancorica	-	249.7	24.97	NA	NA	NA	NA	NA	m
Indotestudo	Indotestudo forstenii	-	309.0	30.90	NA	NA	NA	NA	NA	m
Indotestudo	Indotestudo elongata	-	360.0	36.00	NA	NA	NA	NA	NA	m
Indotestudo	Indotestudo forstenii	-	199.0	19.90	NA	NA	NA	NA	NA	m
Indotestudo	Indotestudo elongata	-	244.2	24.42	NA	NA	NA	NA	NA	m

Genus	Taxon	CollNr	SCL	CCL	SCW	CCW	CH	PL	PW	es
Indotestudo	Indotestudo travancorica	-	244.2	24.42	NA	NA	NA	NA	NA	m
Manouria	Manouria impressa	ZMB 63172	165.0	16.50	20.0	12.9	18.0	157.0	10.5	m
Indotestudo	Indotestudo elongata	ZMB 50492	276.0	27.60	33.0	19.4	28.5	246.0	17.1	m
Indotestudo	Indotestudo elongata	ZMB 63175	235.0	23.50	30.5	16.0	29.5	202.0	14.4	m
Indotestudo	Indotestudo elongata	ZMB 4174	208.0	20.80	26.0	13.4	20.0	180.0	11.6	m
Indotestudo	Indotestudo elongata	ZMB 6106	166.0	16.60	21.0	11.3	18.0	151.0	11.3	m
Manouria	Manouria emys	-	600.0	60.00	NA	NA	NA	NA	NA	m
Testudo	Testudo graeca	-	250.0	25.00	NA	NA	NA	NA	NA	m
Testudo	Testudo graeca	-	280.0	28.00	NA	NA	NA	NA	NA	m
Manouria	Manouria emys	ZMB 49049	212.0	21.20	26.5	16.5	25.0	NA	NA	m
Manouria	Manouria emys	ZMB 37350	445.0	44.50	52.0	32.0	50.0	455.0	29.8	m
Manouria	Manouria emys	ZMB 37342	330.0	33.00	40.5	26.7	37.0	330.0	23.4	m
Indotestudo	Indotestudo travancorica	-	331.0	33.10	NA	NA	NA	NA	NA	m
Indotestudo	Indotestudo travancorica	-	219.6	21.96	NA	NA	NA	NA	NA	m
Indotestudo	Indotestudo forstenii	-	200.5	20.05	NA	NA	NA	NA	NA	m
Testudo	Testudo horsfieldii	-	280.0	28.00	NA	NA	NA	NA	NA	m
Manouria	Manouria impressa	-	350.0	35.00	NA	NA	NA	NA	NA	m
Geochelone	Geochelone elegans	-	380.0	38.00	NA	NA	NA	NA	NA	m
Manouria	Manouria impressa	-	275.0	27.50	NA	NA	NA	NA	NA	m
Indotestudo	Indotestudo elongata	-	219.6	21.96	NA	NA	NA	NA	NA	m
Geochelone	Geochelone platynota	-	300.0	30.00	NA	NA	NA	NA	NA	m
Testudo	Testudo graeca	-	300.0	30.00	NA	NA	NA	NA	NA	m
Gopherus	Gopherus flavomarginatus	-	400.0	40.00	NA	NA	NA	NA	NA	m
Gopherus	Gopherus morafkai	-	299.0	29.90	NA	NA	NA	NA	NA	m
Gopherus	Gopherus berlandieri	-	240.0	24.00	NA	NA	NA	NA	NA	m
Testudo	Testudo horsfieldii	ZMB 63259	111.0	11.10	14.0	10.0	15.0	108.0	9.5	m
Pyxis	Pyxis arachnoides	ZMB 37615	108.0	10.80	15.0	7.9	13.0	96.0	7.1	m
Testudo	Testudo marginata	-	241.7	24.17	NA	NA	NA	NA	NA	m
Testudo	Testudo horsfieldii	ZMB 63258	123.0	12.30	14.5	10.9	15.0	121.0	9.8	m
Testudo	Testudo hermanni	-	183.3	18.33	NA	NA	NA	NA	NA	m
Testudo	Testudo hermanni	-	176.9	17.69	NA	NA	NA	NA	NA	m

Genus	Taxon	CollNr	SCL	CCL	SCW	CCW	CH	PL	PW	es
Testudo	Testudo horsfieldii	ZMB 63257	114.0	11.40	14.5	10.2	14.0	110.0	9.9	m
Testudo	Testudo marginata	-	246.7	24.67	NA	NA	NA	NA	NA	m
Testudo	Testudo hermanni	-	196.0	19.60	NA	NA	NA	NA	NA	m
Testudo	Testudo hermanni	-	143.5	14.35	NA	NA	NA	NA	NA	m
Testudo	Testudo graeca	-	194.6	19.46	NA	NA	NA	NA	NA	m
Testudo	Testudo hermanni	-	200.0	20.00	NA	NA	NA	NA	NA	m
Testudo	Testudo hermanni	-	250.0	25.00	NA	NA	NA	NA	NA	m
Testudo	Testudo marginata	-	246.0	24.60	NA	NA	NA	NA	NA	m
Testudo	Testudo marginata	-	242.5	24.25	NA	NA	NA	NA	NA	m
Testudo	Testudo marginata	-	246.0	24.60	NA	NA	NA	NA	NA	m
Testudo	Testudo hermanni	-	147.0	14.70	NA	NA	NA	NA	NA	m
Testudo	Testudo marginata	-	290.0	29.00	NA	NA	NA	NA	NA	m
Testudo	Testudo marginata	-	250.0	25.00	NA	NA	NA	NA	NA	m
Testudo	Testudo hermanni	-	145.9	14.59	NA	NA	NA	NA	NA	m
Testudo	Testudo graeca	-	178.2	17.82	NA	NA	NA	NA	NA	m
Testudo	Testudo marginata	-	400.0	40.00	NA	NA	NA	NA	NA	m
Testudo	Testudo horsfieldii	ZMB 63255	136.0	13.60	18.0	13.0	16.5	129.0	12.2	m
Testudo	Testudo horsfieldii	ZMB 63256	132.0	13.20	17.0	12.4	17.0	133.0	11.3	m
Testudo	Testudo hermanni	-	168.3	16.83	NA	NA	NA	NA	NA	m
Testudo	Testudo hermanni	-	160.0	16.00	NA	NA	NA	NA	NA	m
Testudo	Testudo hermanni	-	154.0	15.40	NA	NA	NA	NA	NA	m
Testudo	Testudo hermanni	-	138.5	13.85	NA	NA	NA	NA	NA	m
Testudo	Testudo hermanni	-	173.0	17.30	NA	NA	NA	NA	NA	m
Testudo	Testudo marginata	-	242.5	24.25	NA	NA	NA	NA	NA	m
Testudo	Testudo hermanni	-	195.0	19.50	NA	NA	NA	NA	NA	m
Testudo	Testudo hermanni	-	157.0	15.70	NA	NA	NA	NA	NA	m
Testudo	Testudo hermanni	-	176.6	17.66	NA	NA	NA	NA	NA	m
Testudo	Testudo hermanni	-	130.0	13.00	NA	NA	NA	NA	NA	m
Testudo	Testudo hermanni	-	161.0	16.10	NA	NA	NA	NA	NA	m
Gopherus	Gopherus polyphemus	-	300.0	30.00	NA	NA	NA	NA	NA	m
Gopherus	Gopherus sp.	MVZ 210020	NA	NA	NA	NA	NA	219.6	NA	m

Genus	Taxon	CollNr	SCL	CCL	SCW	CCW	CH	PL	PW	es
Gopherus	Gopherus sp.	MVZ 210003	NA	NA	NA	NA	NA	192.1	NA	m
Gopherus	Gopherus polyphemus	-	268.8	26.88	NA	NA	NA	NA	NA	m
Gopherus	Gopherus sp.	MVZ 120004	NA	NA	NA	NA	NA	196.7	NA	m
Gopherus	Gopherus sp.	MVZ 210009	NA	NA	NA	NA	NA	232.8	NA	m
Gopherus	Gopherus sp.	MVZ 210010	NA	NA	NA	NA	NA	240.1	NA	m
Gopherus	Gopherus agassizii	-	400.0	40.00	NA	NA	NA	NA	NA	m
Gopherus	Gopherus flavomarginatus	KU 39415	303.0	30.30	NA	23.2	NA	NA	NA	m
Gopherus	Gopherus polyphemus	-	308.0	30.80	NA	NA	NA	NA	NA	m
Gopherus	Gopherus polyphemus	-	303.0	30.30	NA	NA	NA	NA	NA	m
Gopherus	Gopherus polyphemus	-	387.0	38.70	NA	NA	NA	NA	NA	m
Gopherus	Gopherus polyphemus	-	342.0	34.20	NA	NA	NA	NA	NA	m
Gopherus	Gopherus flavomarginatus	USNM 61253	222.0	22.20	NA	16.6	NA	212.0	NA	m
Gopherus	Gopherus flavomarginatus	USNM 61254	371.0	37.10	NA	29.2	NA	358.0	NA	m
Gopherus	Gopherus polyphemus	-	238.9	23.89	NA	NA	NA	NA	NA	m
Gopherus	Gopherus flavomarginatus	USNM 60976	246.0	24.60	NA	21.2	NA	252.0	NA	m
Gopherus	Gopherus flavomarginatus	IU 42953	281.0	28.10	NA	22.0	NA	NA	NA	m
Gopherus	Gopherus flavomarginatus	IU 42954	278.0	27.80	NA	21.4	NA	NA	NA	m
Chelonoidis	Chelonoidis nigra	USNM 51069	588.0	58.80	68.3	44.5	NA	506.0	NA	m
Chelonoidis	Chelonoidis nigra	USNM1 102904	610.0	61.00	67.5	44.4	NA	515.0	NA	m
Chelonoidis	Chelonoidis carbonaria	-	593.0	59.30	NA	NA	NA	NA	NA	m
Chelonoidis	Chelonoidis abingdonii	-	980.0	98.00	NA	NA	NA	NA	NA	m
Chelonoidis	Chelonoidis denticulata	-	333.4	33.34	NA	NA	NA	NA	NA	m
Chelonoidis	Chelonoidis chilensis	UF33604	169.0	16.90	21.5	13.2	NA	161.0	NA	m
Chelonoidis	Chelonoidis chilensis	UF33618	186.0	18.60	25.0	14.7	NA	169.0	NA	m
Chelonoidis	Chelonoidis nigra	-	717.0	71.70	NA	NA	NA	NA	NA	m
Chelonoidis	Chelonoidis chilensis	UF33617	169.0	16.90	22.8	14.6	NA	162.0	NA	m
Chelonoidis	Chelonoidis carbonaria	UF27384	242.0	24.20	31.7	15.5	NA	219.0	NA	m
Chelonoidis	Chelonoidis carbonaria	UF33597	253.0	25.30	31.7	15.3	NA	215.0	NA	m
Chelonoidis	Chelonoidis nigra	USNM1 222494	595.0	59.50	68.0	43.6	NA	533.0	NA	m
Chelonoidis	Chelonoidis carbonaria	-	333.4	33.34	NA	NA	NA	NA	NA	m
Chelonoidis	Chelonoidis carbonaria	UF5259	226.0	22.60	28.7	12.9	NA	198.0	NA	m

Genus	Taxon	CollNr	SCL	CCL	SCW	CCW	CH	PL	PW	es
Chelonoidis	Chelonoidis becki	-	1050.0	105.00	NA	NA	NA	NA	NA	m
Chelonoidis	Chelonoidis denticulata	UF33661	333.0	33.30	38.0	21.4	NA	305.0	NA	m
Chelonoidis	Chelonoidis denticulata	UF61931	317.0	31.70	41.2	18.5	NA	291.0	NA	m
Chelonoidis	Chelonoidis denticulata	UF33670	365.0	36.50	47.0	22.0	NA	326.0	NA	m
Chelonoidis	Chelonoidis chilensis	UF33603	183.0	18.30	23.4	14.5	NA	166.0	NA	m
Chelonoidis	Chelonoidis nigra	-	731.3	73.13	NA	NA	NA	NA	NA	m
Chelonoidis	Chelonoidis chilensis	-	200.0	20.00	NA	NA	NA	NA	NA	m
Chelonoidis	Chelonoidis carbonaria	UF48278	247.0	24.70	33.9	15.5	NA	214.0	NA	m
Chelonoidis	Chelonoidis carbonaria	-	296.5	29.65	NA	NA	NA	NA	NA	m
Chelonoidis	Chelonoidis carbonaria	-	290.0	29.00	NA	NA	NA	NA	NA	m
Chelonoidis	Chelonoidis carbonaria	UF33596	189.0	18.90	24.7	12.1	NA	174.0	NA	m
Chelonoidis	Chelonoidis nigra	-	745.7	74.57	NA	NA	NA	NA	NA	m
Chelonoidis	Chelonoidis chathamensis	-	890.0	89.00	NA	NA	NA	NA	NA	m
Chelonoidis	Chelonoidis denticulata	UF19242	466.0	46.60	59.7	26.5	NA	410.0	NA	m
Chelonoidis	Chelonoidis denticulata	UF23231	377.0	37.70	47.1	23.8	NA	334.0	NA	m
Chelonoidis	Chelonoidis denticulata	-	820.0	82.00	NA	NA	NA	NA	NA	m
Chelonoidis	Chelonoidis duncanensis	-	840.0	84.00	NA	NA	NA	NA	NA	m
Chelonoidis	Chelonoidis chilensis	-	222.0	22.20	NA	NA	NA	NA	NA	m
Chelonoidis	Chelonoidis chilensis	UF33600	157.0	15.70	20.8	11.9	NA	145.0	NA	m
Chelonoidis	Chelonoidis phantastica	-	860.0	86.00	NA	NA	NA	NA	NA	m
Chelonoidis	Chelonoidis vicina	-	1250.0	125.00	NA	NA	NA	NA	NA	m
Chelonoidis	Chelonoidis hoodensis	-	813.0	81.30	NA	NA	NA	NA	NA	m
Chelonoidis	Chelonoidis nigra	-	1300.0	130.00	NA	NA	NA	NA	NA	m
Chelonoidis	Chelonoidis darwini	-	965.0	96.50	NA	NA	NA	NA	NA	m
Chelonoidis	Chelonoidis chilensis	-	450.0	45.00	NA	NA	NA	NA	NA	m

```
length(unique(tidyCL$Locality))
```

```
## [1] 193
```

```
length(unique(tidyCL$Locality[which(tidyCL$Age < 23.000)]))
```

```
## [1] 186
```

```
length(unique(FossilOccurrences$Locality))
```

```
## [1] 647
```

```
length(unique(FossilOccurrences$Locality[which(FossilOccurrences$Clavailability=="yes")]))
```

```
## [1] 112
```

```
FossilOcMiocene <- FossilOccurrences %>%
  mutate(Age=(MA.min+Ma.max)/2) %>%
  filter(Age < 23.000)


length(unique(FossilOcMiocene$Locality))
```

```
## [1] 534
```

```
length(unique(FossilOcMiocene$Locality[which(FossilOccurrences$Clavailability=="yes")]))
```

```
## [1] 108
```

number of all fossil localities with body size data (body size data set) 193

number of fossil localities that match the relevant age 186

number of localities according to FosFarBase 647

number of FosFarBase localities for which body size was available 112

number of FosFarBase localities of relevant age 534

number of FosFarBase localities of relevant age for which body size data was available 106

Body size data set: number of data records 384

number of data records of relevant age 376

number of Countries where data records occurred54

number of measured SCLs 97

number of measured SCLs 33

number of estimated SCLs 254

number of SCLs measured from figure 38

number of SCLs estimated from PL 61

number of SCLs that were estimared by original authors 158

Occurrences: number of data records 770

number of data records of relevant age 641

number of data available body sizes 132

number of available body sizes of relevant age 126

Extant:

number of extant data records 240

number of specimens from MFN collection 67

number of specimens from literature 173

```
## [1] 384
```

```
## [1] 119
```

```
## [1] 384
```

```
## [1] 26
```

```
## [1] 144
```

```
## [1] 11
```

```
##  [1] Ergilemys    Testudo      Cheirogaster Titanochelon Paleotestudo
##  [6] Geochelone   Centrochelys gen.         "Hadrianus"  Eurotestudo
## [11] Taraschelon
## 26 Levels: "Hadrianus" Aldabrachelys Caudochelys ... Titanochelon
```

```
## [1] 7
```

```
## [1] 2
```

```
## [1] Geochelone  Chelonoidis
## 26 Levels: "Hadrianus" Aldabrachelys Caudochelys ... Titanochelon
```

```
## [1] 167
```

```
## [1] 15
```

```
##  [1] Testudo       Geochelone    Ergilemys     Aldabrachelys Megalochelys
##  [6] Manouria      Indotestudo   gen.          Cheirogaster  Titanochelon
## [11] Paleotestudo  Centrochelys  "Hadrianus"   Eurotestudo   Taraschelon
## 26 Levels: "Hadrianus" Aldabrachelys Caudochelys ... Titanochelon
```

Table 29: Relative abundances of individuals per genera across the continents. Basis for sampling accumulation curves.

Genus	Africa.x	America	N-America	S-America	Asia.x	Europe.x	n
“Hadrianus”	-	-	-	-	-	1	1
Aldabrachelys	4	-	-	-	2	-	2
Caudochelys	-	4	4	-	-	-	-
Centrochelys	2	-	-	-	-	12	12
Cheirogaster	-	-	-	-	-	9	9
Chelonoidis	-	28	-	6	-	-	-
Ergilemys	-	-	-	-	2	3	4
Eurotestudo	-	-	-	-	-	10	10
gen.	-	-	-	-	1	7	8
Geochelone	4	10	8	1	1	2	3
Gopherus	-	92	88	-	-	-	-
Hesperotestudo	-	46	43	-	-	-	-
Homopus	1	-	-	-	-	-	-
Impregnochelys	1	-	-	-	-	-	-
Indotestudo	-	-	-	-	1	-	1
Kinixys	1	-	-	-	-	-	-
Manouria	-	-	-	-	2	-	2
Megalochelys	-	-	-	-	12	-	12
Mesocherus	5	-	-	-	-	-	-
Namibchersus	9	-	-	-	-	-	-
Paleotestudo	-	-	-	-	-	26	26

Genus	Africa.x	America	N-America	S-America	Asia.x	Europe.x	n
Psammobates	1	-	-	-	-	-	-
Stylemys	-	1	1	-	-	-	-
Taraschelon	-	-	-	-	-	1	1
Testudo	5	1	1	-	4	51	54
Titanochelon	-	-	-	-	-	22	22