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

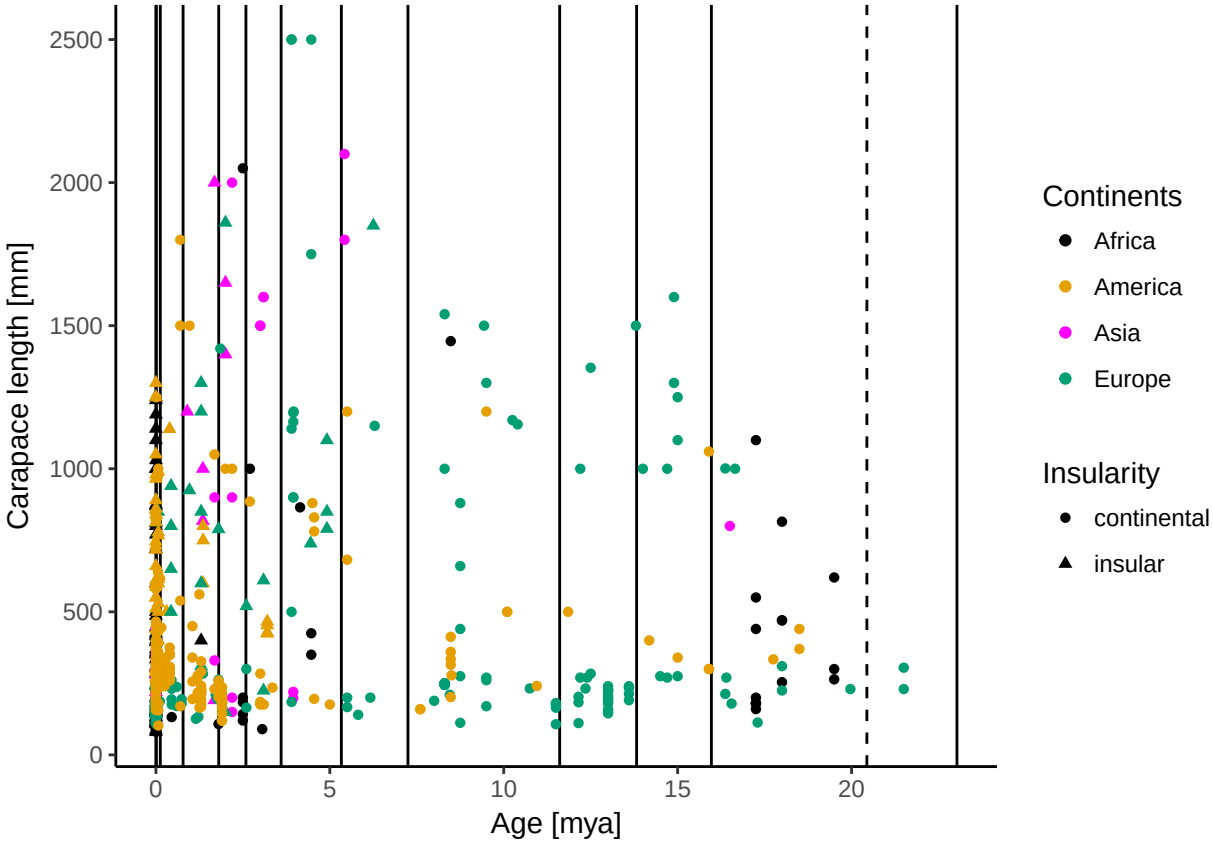

Figure 1: Scatterplot of carapace length over time, indicating insular (triangle) and continental (circles) and colour indicating continents. Lines indicate stratigraphic stages which were used as time bins, the dashed line is the border between the two stages of the Lower Miocene, which were consideres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

Maps

fossil occurences of testudinidae

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

	Locality	Country
26	U-Bar Cave Mid Wiskonsin, Hidalgo County, New Mexico	USA
27	Gorham's cave IV, Gibraltar Peninsula	England
28	Room of the Vanishing Floor, Dry Cave (UTEP 26, 27), Eddy County, New Mexico	USA
29	Pendejo Cave, Rough Canyon on Fort Bliss land, 21 km east of Orogrande, Otero County, New Mexico	USA
30	Megenity Peccary Cave, Crawford County, Indiana	USA
31	Easley Ranch Local Fauna, Foard County, Texas	USA
32	Easley Ranch Local Fauna, Foard County, Texas	USA
33	Vero Beach, Indian River County, Florida	USA
34	Vero Beach, Indian River County, Florida	USA
35	Ingleside Local Fauna, San Patricio County, Texas	USA
36	Ingleside Local Fauna, San Patricio County, Texas	USA
37	Zebbug and Gahr Dalam Cave deposits	Malta
38	Šandalja near Pula	Croatia
39	Bate Cave, Rethymnon	Greece
40	Süttö Upper Pleistocene strata, Gerecse Mountains	Hungary
41	Sternatia, Lecce	Italy
42	Torre del Pagliaccetto, Rome	Italy
43	Crevene Stijena Cave, Petrovica	Serbia
44	Crevene Stijena Cave, Petrovica	Serbia
45	Crevene Stijena Cave, Petrovica	Serbia
46	Cueva del Boquete de Zafarraya, Sierra de Alhama, Málaga	Spain
47	Cueva Horá (Darro, Granada)	Spain
48	Hortus Cave, Valflaunès, Herault	France
49	Arredondo IIA, Alachua County, Florida	USA
50	Orange Lake 2 miles south, Marion County, Florida	USA
51	Reddick IA+B, Marion County, Florida	USA
52	Reddick IA+B, Marion County, Florida	USA
53	Sabertooth Cave, Lecanto 2A, Citrus County, Florida	USA
54	Arredondo IIA, Alachua County, Florida	USA
55	Melbourne, Brevard County, Florida	USA
56	Cueva del Camino Secteur Central, Pinilla del Valle, Madrid	Spain

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

	Locality	Country
88	Marjan	Croatia
89	Spinagallo Cave, Siracusa, Sicily	Italy
90	Abime de la Fage, Correze	France
91	Caverna de Gràcia, Güell park, Barcelona	Spain
92	Caverna de Gràcia, Güell park, Barcelona	Spain
93	Caverna de Gràcia, Güell park, Barcelona	Spain
94	Riparo di Visogliano (TS)	Italy
95	Kénitra, Guilloux quarry, near Rabat	Morocco
96	Cova de Gràcia, Park Güell, Barcelona	Spain
97	Raebia, Atambua area, Timor	Indonesia
98	Alcamo travertini (TP)	Italy
99	Grotta Marasà (PA)	Italy
100	Saint-Estève-Janson, l'Escale Cave (Bouches du Rhône)	France
101	Arkalon Local Fauna, Seward County, Kansas	USA
102	Arkalon Local Fauna, Seward County, Kansas	USA
103	Valdemino Cave, 20-24 (Borgio Verezzi, Liguria)	Italy
104	Gilliland local fauna, Burnett Ranch, 7 miles W of Vera, Knox County, Texas	USA
105	Soave, Zoppega 2 cave, Verona	Italy
106	Valle de Fontechevade, Charente	France
107	Monsummano	Italy
108	Loreto di Venosa, Potenza	Italy
109	Rock-Cavities, Gibraltar Peninsula	England
110	Wolo Sege, Flores	Indonesia
111	Cedazo local fauna, Aguascalientes, Mexico	Mexico
112	Cueva de la Victoria-1 (CV-1), Carthagène, Murcia	Spain
113	Cava Dell'Erba Apricena, Foggia	Italy
114	Cava Pirro Apricena, Foggia	Italy
115	Sima del Elefante TE14, Sierra de Atapuerca, Burgos	Spain
116	Sima del Elefante TE11, Sierra de Atapuerca, Burgos	Spain
117	Sima del Elefante TE12, Sierra de Atapuerca, Burgos	Spain
118	Sima del Elefante TE13, Sierra de Atapuerca, Burgos	Spain

	Locality	Country
119	Sima del Elefante TE9, Sierra de Atapuerca, Burgos	Spain
120	Leisey Shell Pit 1A, Hillsborough County, Florida	USA
121	Leisey Shell Pit 1A, Hillsborough County, Florida	USA
122	Leisey Shell Pit 2, Hillsborough County, Florida	USA
123	Leisey Shell Pit 1A, Hillsborough County, Florida	USA
124	Leisey Shell Pit 2, Hillsborough County, Florida	USA
125	Leisey Shell Pit 3, Hillsborough County, Florida	USA
126	Leisey Shell Pit 3A, Hillsborough County, Florida	USA
127	Casimba de Jatibonica, Santa Clara Province	Cuba
128	Tangi Talo, Dhozo Dhalu, Flores	Indonesia
129	Barranco León 5 (BL-5=Capa D), Dépression de Guadix-Baza, Grenade	Spain
130	Chapepote spring at Banos de Ciego Montero, Santa Clara Province	Cuba
131	Hato Nuevo, Matanzas Province	Cuba
132	Mesilla Basin Fauna C, Doña Ana County, New Mexico	USA
133	Mesilla Basin Fauna C, Doña Ana County, New Mexico	USA
134	Sierra de Quibas, Abanilla, Murcia	Spain
135	Gervasio 5 (FG)	Italy
136	El Paso, eastern side of the Franklin Mountains and along the Rio Grande, El Paso County, Texas	USA
137	Tijeras Arroyo, Bernalillo County, New Mexico	USA
138	Pirro Nord (Cava dell'Erba, Cava Pirro); Apricena, Apulia Italy	Italy
139	La Union, Doña Ana County, New Mexico	USA
140	La Union, Doña Ana County, New Mexico	USA
141	Pearson Mesa near Virden, Hidalgo County, New Mexico	USA
142	Lakonia	Greece
143	Dmanisi	Georgia
144	Figline, Upper Valdarno	Italy
145	Il Tasso, S. Giovanni (AR), Upper Valdarno	Italy
146	Le Mignaie, Upper Valdarno	Italy
147	Le Ville, Upper Valdarno	Italy
148	L'Inferno, Upper Valdarno	Italy
149	Montecarlo, Upper Valdarno	Italy

	Locality	Country
150	Kisláng, Fejer	Hungary
151	Montoussé 5, Hautes Pyrenees	France
152	Monte Tuttavista VII mustelide, Sardinia	Italy
153	White Rock local fauna, Republic County, Kansas	USA
154	Lesbos Island, F-Site	Greece
155	Big Springs Gravel Pit (UNSM Ap-103), Antelope County, Nebraska	USA
156	Caballo Local Fauna, Palomas Basin, Sierra County, New Mexico	USA
157	Caballo Local Fauna, Palomas Basin, Sierra County, New Mexico	USA
158	Capo Mannu near San Vero Milis, base of D4 dune, Sardinia	Italy
159	Kelatchay (Dushak)	Turkmenist
160	Varshets 6 km NNE, Michajlovrad Province	Bulgaria
161	MacAsphalt Shell Pit, Sarasota County, Florida	USA
162	St. Petersburg Times Site, Pinellas County, Florida	USA
163	Ahl al Oughlam (near Casablanca)	Morocco
164	Ahl al Oughlam (near Casablanca)	Morocco
165	Ahl al Oughlam (near Casablanca)	Morocco
166	Cova de Ca Na Reia, Eivissa, Ibiza	Spain
167	Es Pujol d´es Fum, Formentera	Spain
168	Kryshanovka 1	Ukraine
169	Milia, Grevena, W Macedonia	Greece
170	Milia, Grevena, W Macedonia	Greece
171	North Cita Canyon (Middle Stratum), Randall County, Texas	USA
172	Novaya Etulia 2	Moldova
173	Palomas Creek Fauna, Palomas Basin, Sierra County, New Mexico	USA
174	Tha Chang area, Chaloem Pra Kiat district, Nakhon Ratchasima Province	Thailand
175	Sand Draw local fauna, Brown County, Nebraska	USA
176	Sawrock Canyon local fauna, Seward County, Kansas	USA
177	Sand Draw local fauna, Brown County, Nebraska	USA
178	Sand Draw local fauna, Brown County, Nebraska	USA
179	UCMP V6327, La Porteria, Kettleman Hills, Kings County, California	USA
180	Cuchillo Negro Creek Local Fauna, Engle Basin, Sierra County, New Mexico	USA

	Locality	Country
181	Elephant Butte Lake Fauna, Engle Basin, Sierra County, New Mexico	USA
182	Las Higueruelas, Alcolea de Calatrava, Ciudad Real	Spain
183	Las Higueruelas, Alcolea de Calatrava, Ciudad Real	Spain
184	Las Tunas, Baja California Sur	Mexico
185	Laetoli	Tanzania
186	Laetoli	Tanzania
187	Dikika (DIK-1)	Ethiopia
188	Cita Canyon, UCMP V-3721, Harrell Ranch, Randall County, Texas	USA
189	Cita Canyon, UCMP V-3721, Harrell Ranch, Randall County, Texas	USA
190	Liventsovka horizon 5, near Rostov-on-Don	Russia
191	Serrat-d´en-Vacquer near Perpignan, Pyrénées-Orientales	France
192	Megalo Emvolon 1 (MEV), 20 km SW Thessaloniki	Greece
193	Megalo Emvolon 1 (MEV), 20 km SW Thessaloniki	Greece
194	W??e 1	Poland
195	W??e 1	Poland
196	W??e 1	Poland
197	Perpignan et sa région, Pyrénées-Orientales	France
198	Perpignan et sa région, Pyrénées-Orientales	France
199	Serrat-d´en-Vacquer near Perpignan, Pyrénées-Orientales	France
200	Musaid right bank of Big Salcha River, Vulkaneshty Region	Moldova
201	Novo-Savitzkaya	Moldova
202	Ptolemais 6A = Notio 1 (NO 1)	Greece
203	Ptolemais 6B = Notio 1	Greece
204	Ptolemais 6C = Notio 1 (NO 1)	Greece
205	Epanomi (EPN I), western Chalkidiki Peninsula, Thessaloniki area	Greece
206	Epanomi (EPN II), western Chalkidiki Peninsula, Thessaloniki area	Greece
207	Altan-Teli main fossiliferous bed (Dzereg valley)	Mongolia
208	Nea Kallikratia, western Chalkidiki Peninsula, Thessaloniki area	Greece
209	Nea Michaniona, western Chalkidiki Peninsula, Thessaloniki area	Greece
210	Farola Monte Hermoso, 12 km SW Pehuen Có Beach, Buenos Aires Province	Argentina
211	Çalta	Turkey

	Locality	Country
212	El Arquillo 3 (ARQ3)	Spain
213	Kanapoi	Kenya
214	Kanapoi	Kenya
215	Kanapoi	Kenya
216	Aramis, ARA-VP-6/500, Middle Awash Valley	Ethiopia
217	Cala Es Pous near Ciutadella, Minorca	Spain
218	Punta Nati near Ciutadella, Minorca	Spain
219	Jambol, Tenovo or General Insovo sandstone quarries	Bulgaria
220	Montpellier, Hérault	France
221	Novopetrovka	Ukraine
222	Lee Creek Mine, Yorktown Sample, Beaufort County, North Carolina	USA
223	Rexroad local fauna (Fox Canyon locality 3), Meade County, Kansas	USA
224	Rexroad local fauna (Fox Canyon locality 3), Meade County, Kansas	USA
225	Tchelopetchene 1 (sand facies)	Bulgaria
226	Nikolskoe	Moldova
227	Yepómera, Chihuahua	Mexico
228	Santee, Knox County, Nebraska	USA
229	Devil´s Nest Airstrip, Knox County, Nebraska	USA
230	Devil´s Nest Airstrip, Knox County, Nebraska	USA
231	Santee, Knox County, Nebraska	USA
232	Devil´s Nest Airstrip, Knox County, Nebraska	USA
233	Kuchurgan	Ukraine
234	Kuchurgan	Ukraine
235	Osztramos 1C	Hungary
236	Polenzo section along Tanaro River, Verduno, Piedmont Italy	Italy
237	UCMP V71137, Turlock Lake 10, Stanislaus County, California	USA
238	UCMP V81248, Turlock Lake 11, Stanislaus County, California	USA
239	Allatini, eastern part of Thessaloniki, western Chalkidiki peninsula	Greece
240	Pylea, eastern part of Thessaloniki, western Chalkidiki peninsula	Greece
241	As Sahabi	Libya
242	UCMP V65711, Turlock Lake General, Stanislaus County, California	USA

	Locality	Country
243	UCMP V6878, Turlock Lake, Stanislaus County, California	USA
244	UCMP V71138, Dallas-Warner Reservoir 1, Stanislaus County, California	USA
245	UCMP V90007, Turlock Lake 13, Stanislaus County, California	USA
246	UCMP V90008, Turlock Lake 14, Stanislaus County, California	USA
247	Withlacoochee River Site 4A, Marion County, Florida	USA
248	Chiquimil, Catamarca	Argentina
249	Brisghella Cava Monticino	Italy
250	Polgárdi 2	Hungary
251	Venta del Moro (Cabriel Basin)	Spain
252	Torrente Melacce, Cinigiano (GR)	Italy
253	Gretoni, Stazione Monte Amiata (SI)	Italy
254	Shkodova Gora	Ukraine
255	Santa-Vittoria d'Alba	Italy
256	Stanianzi	Bulgaria
257	Samos 1	Greece
258	Tudorovo	Moldova
259	Kuyalnik	Ukraine
260	Lukeino	Kenya
261	Autovía A-30, Murcia	Spain
262	Casa Castillo near Jumilla, Murcia	Spain
263	Megalo Rema near Paleomilos	Greece
264	Lothagam 1	Kenya
265	Lothagam 2	Kenya
266	Barranco del Cigarrón (B-Cg1), S El Palmar, Murcia	Spain
267	Hamra	United Arab
268	Jebel Dhannah	United Arab
269	Kihal	United Arab
270	Shuwaihat	United Arab
271	Azmaka quarry 2.5 km NNE Chirpan	Bulgaria
272	Toros-Menalla, Djurab desert (TM 266)	Chad
273	Chimishlia	Moldova

	Locality	Country
274	Taraklia	Moldova
275	Tardosbánya 3	Hungary
276	Morskaya 2 locality of the Sea of Azov region	Russia
277	Novoelizavetovka	Ukraine
278	Fosso della Fittaia 2013, Baccinello-Cinigiano Basin, Tuscany	Italy
279	Chobruchi	Moldova
280	Cliffs in the Paraná eastern riverside near Paraná, Entre Ríos	Argentina
281	Montagne du Lubéron à Cucuron, Vaucluse et Alpes-de-Haute-Provence	France
282	Montagne du Lubéron à Cucuron, Vaucluse et Alpes-de-Haute-Provence	France
283	Kalimantsi 2-4	Bulgaria
284	Kalimantsi 2-4	Bulgaria
285	Buis Ranch Local Fauna, Beaver County, Oklahoma	USA
286	Salinas Grandes de Hidalgo, Atreucó, La Pampa	Argentina
287	Bajo Giuliani, La Pampa	Argentina
288	Quehué, La Pampa	Argentina
289	Belka	Ukraine
290	Rooilepel D. laini level	Namibia
291	Aubignas 1+2, Ardèche	France
292	Yurievka	Ukraine
293	Novoukrainka 1 (= Budenovka)	Ukraine
294	Grebeniki 1	Ukraine
295	Csákvár, Esterh?y Cave, Fejér Province	Hungary
296	Prottes	Austria
297	Prottes	Austria
298	Prottes	Austria
299	Crevillente 2	Spain
300	Crevillente 2	Spain
301	Prottes	Austria
302	Crevillente 2	Spain
303	Dorn-Dürkheim, Giloth Quarry, about 25 km S Mainz	Germany
304	Altan-Teli Oshi horizon (Dzereg valley)	Mongolia

	Locality	Country
305	Kainary	Moldova
306	San Nicolas, UCMP locality V4536	Colombia
307	Cava Monticino, near Brisigella, Emilia-Romana	Italy
308	Ambérieu-en-Bugey, Ain	France
309	Saint-Bauzile, Ardèche	France
310	Dove Spring Fauna, Mojave Desert, Kern County, California	USA
311	Dove Spring Fauna, Mojave Desert, Kern County, California	USA
312	Kohfidisch	Austria
313	Kohfidisch	Austria
314	Kohfidisch	Austria
315	El Hatillo, 1.5 km north of, Falcón State	Venezuela
316	Montredon, Aude	France
317	Udabno	Georgia
318	Krivoj Rog	Ukraine
319	Love Bone Bed along State Road 241 near Archer, Alachua County, Florida	USA
320	Patos (= Acre 6, LACM Locality 4611), Assisbrasil County, Acre	Brazil
321	UCMP V-3952, Ingram Creek site 8, Stanislaus County, California	USA
322	Kamenica nad Hronom	Slovakia
323	Poc?e?ti right side Ikel River valley	Moldova
324	Cerro de los Batallones, Madrid	Spain
325	Cerro de los Batallones, Madrid	Spain
326	Varnitza	Moldova
327	Borský Svätý Jur	Slovakia
328	Bushor 1	Moldova
329	Kalfa	Moldova
330	Lapushna	Moldova
331	Götzendorf	Austria
332	Jebel Semama	Tunisia
333	Sabadell	Spain
334	Saint-Fons, Rhône	France
335	WaKeeney Local Fauna (UM-K6-59 on the Lowell Hillman Ranch), Trego County, Kansas	USA

	Locality	Country
336	WaKeeney Local Fauna (UM-K6-59 on the Lowell Hillman Ranch), Trego County, Kansas	USA
337	Ricardo Fauna, Mojave Desert, Kern County, California	USA
338	Ricardo Fauna, Mojave Desert, Kern County, California	USA
339	Rudabanya (grey green marl 5C)	Hungary
340	Rudabánya, Borsod-Abaúj-Zemplén Province (all)	Hungary
341	El Lugarejo (Arévalo), Ávilla, Castilla	Spain
342	Autovía A6, Arévola, Ávila	Spain
343	Tataru?-Brusturi	Romania
344	Arevalillo River (Arévola), Ávila	Spain
345	Arévalo, Ávila, Castilla	Spain
346	Höwenegg	Germany
347	Höwenegg	Germany
348	Autovía Orbital de Barcelona B-40 (B40OV/S4K), Vallés-Penedés basin, Cataluña	Spain
349	Autovía Orbital de Barcelona B-40 (B40OV/S4K), Vallés-Penedés basin, Cataluña	Spain
350	Can Filuà, Santa Perpétua, Vallès Occidental, Barcelona	Spain
351	Can Gavarra, Polinyá, Vallès Occidental, Barcelona	Spain
352	Can Vinyalets, Barcelona	Spain
353	Djebel Krechem el Artsouma	Tunisia
354	Vösendorf-Brunn, near Wien	Austria
355	Hostalets de Piérola, Barcelone province, Cataluña, Vallés-Penedés basin	Spain
356	Valles de Fuentidueña, Segovia Province	Spain
357	Valles de Fuentidueña, Segovia Province	Spain
358	Valles de Fuentidueña, Segovia Province	Spain
359	Benavente, Zamora	Spain
360	Estació Depuradora d´Aigües Residuals Sabadell Riu-Ripoll, Cataluña, Vallés-Penedés basin	Spain
361	Hostalets de Piérola Superior, Barcelone province, Cataluña, Vallés-Penedés basin	Spain
362	Küçükçekmece	Turkey
363	Ecoparc de Can Mata (els Hostalets de Pierola), Vallés-Penedés basin, Cataluña	Spain
364	Holzmannsdorfberg bei St. Marein	Austria
365	McGehee Farm near Newberry, Alachua County, Florida	USA
366	Karingarab D. wardi level	Namibia

	Locality	Country
367	Rooilepel D. wardi level	Namibia
368	Hammerschmiede 3	Germany
369	Atzelsdorf, 35 km NE Vienna, Lower Austria	Austria
370	Hammerschmiede 1	Germany
371	Petersbuch 14	Germany
372	Sant Quirze de Terrassa/de Galliners (del Vallès), Barcelona	Spain
373	Wessington Springs local fauna, Jerauld County, South Dakota	USA
374	Gritsev (Khmelnitsk area, Shepetovski district)	Ukraine
375	Hammerschmiede 5 (HAM 5)	Germany
376	Nombrevilla 2. NOM 2	Spain
377	Iron Canyon Fauna, Mojave Desert, Kern County, California	USA
378	Can Mata (els Hostalets de Pierola), Vallés-Penedés basin, Cataluña	Spain
379	North of Gypsum Plate Pan D. wardi level	Namibia
380	Gratkorn, clay pit St. Stefan, Styria	Austria
381	Gratkorn, clay pit St. Stefan, Styria	Austria
382	Toril 3A. TOR 3A, near Daroca, Zaragoza province	Spain
383	Toril 3B. TOR 3B, near Daroca, Zaragoza province	Spain
384	Sofca (125) - F 434	Turkey
385	La Ciesma 1, Aragón	Spain
386	La Ciesma 1, Aragón	Spain
387	El Buste, Aragón	Spain
388	Cerro del Otero, Palencia	Spain
389	Fuensaldaña, Valladoid	Spain
390	Illescas, Toledo	Spain
391	Illescas, Toledo	Spain
392	La Cistérniga, Valladolid	Spain
393	Bois de Fabregues, Aups, Var	France
394	La-Grive-Saint-Alban (M+L7), Isère	France
395	Abocador de Can Mata (els Hostalets de Pierola)(ACM/BDA), Vallés-Penedés basin, Cataluña	Spain
396	Coca cemetery, Segovia	Spain
397	Oehningen, oberer Bruch, Schienerberg N Oehningen-Wangen	Germany

	Locality	Country
398	Valentine Railway Quarry A, UNSM Cr 12, Cherry County, Nebraska	USA
399	Valentine Railway Quarry B, UNSM Cr 13, Cherry County, Nebraska	USA
400	Fort Niobrara, UCMP V-3218, Cherry County, Nebraska	USA
401	Steinheim a. Albuch	Germany
402	Hohenhöwen, Engen, Hegau, southwestern Germany	Germany
403	Steinheim a. Albuch	Germany
404	Myers Farm, Webster County, Nebraska	USA
405	Myers Farm, Webster County, Nebraska	USA
406	DISC Cluster Sites, conglomerate, Fort Polk, Louisiana	USA
407	Coca-Villeguillo, Segovia	Spain
408	Uitikon-Schlieren, quarry on road, near Zürich	Switzerland
409	Veltheim-Winterthur	Switzerland
410	Sansan, Gers (lake)	France
411	Petersbuch 31 - oben	Germany
412	Mynsualmas	Kazakhstan
413	Chañe, Segovia	Spain
414	Somosaguas Sur, Madrid Basin	Spain
415	Belomechetskaya	Russia
416	Puente de la Princessa, Madrid	Spain
417	Villalcón, Palencia	Spain
418	Goldberg near Pflaumloch, Nördlinger Ries (without number)	Germany
419	Kirrberg b. Balzhausen - Tongrube	Germany
420	Kirrberg b. Balzhausen - Tongrube	Germany
421	Ursberg (nördliche Sandgrube)	Germany
422	Bohlinger Schlucht 6	Germany
423	Wien-Kalksburg	Austria
424	Egelhoff Ranch Local Fauna, Keya Paha County, Nebraska	USA
425	La Barranca, Zaragoza	Spain
426	Stätzling	Germany
427	Bonlanden, Illertal	Germany
428	Bonlanden, Illertal	Germany

	Locality	Country
429	Unterzell 1a	Germany
430	Norden Bridge Local Fauna, Brown County, Nebraska	USA
431	Norden Bridge Local Fauna, Brown County, Nebraska	USA
432	Laimering 3	Germany
433	Ziemetshausen 1e	Germany
434	Tarazona de Aragón	Spain
435	Tarazona de Aragón	Spain
436	Hambach 6C	Germany
437	Georgensgmünd, Reznat-Altmühl-Stausee	Germany
438	Edelbeuren-Schlachtberg	Germany
439	Griesbeckerzell 1a	Germany
440	Griesbeckerzell 1a	Germany
441	Tobel Oelhalde Nord 1	Germany
442	Tobel Oelhalde Süd	Germany
443	Tobel Oelhalde Süd	Germany
444	Ziemetshausen 1b	Germany
445	Ziemetshausen 1b	Germany
446	Ziemetshausen 1g	Germany
447	Valdemoros 3B. VA 3B	Spain
448	Derching 1b (unten)	Germany
449	Edelbeuren-Maurerkopf	Germany
450	Edelbeuren-Maurerkopf	Germany
451	Alcalá de Henares, Cerro del Viso (Barranco de los Mártires y Santos de la Humosa), Madrid	Spain
452	Vallecas, Madrid	Spain
453	Burgerbachtobel 1 near Wippertsweiler	Germany
454	Przeworno I	Poland
455	Barajas, Madrid	Spain
456	Barajas, Madrid	Spain
457	Ciudad Universitaria, Madrid	Spain
458	Henares 1, Los Santos de la Humosa, Madrid	Spain
459	Puente de los Franceses, Madrid	Spain

	Locality	Country
460	Puente de los Franceses, Madrid	Spain
461	Vallecas, Madrid	Spain
462	Plum Point, Calvert County, Maryland	USA
463	Hottell Ranch rhino quarries, Banner County, Nebraska	USA
464	Lassé, Maine-et-Loire	France
465	Pontigné-les-Buisseneaux, Maine-et-Loire	France
466	Calle Moratines, Madrid	Spain
467	Calle Paseo de Moret, Madrid	Spain
468	Paracuellos de Jarama, Madrid	Spain
469	Benistobel (Kohltobel)	Germany
470	Burgerbachtobel 1 near Wippertsweiler	Germany
471	Burgerbachtobel 1 near Wippertsweiler	Germany
472	Ettishofener Ach between Inntobel and Berg-Ettishofen	Germany
473	Ettishofener Ach between Inntobel and Berg-Ettishofen	Germany
474	Griesbeckerzell 1b	Germany
475	Hotterloch-Tobel SW Ravensburg	Germany
476	Lattentobel	Germany
477	Ochsenhausen am Heselsberg, Baustelle Remmele	Germany
478	Schmalegger Tobel	Germany
479	Schmalegger Tobel	Germany
480	Ziemetshausen 1d	Germany
481	Ziemetshausen 1f	Germany
482	Grund near Hollabrunn (Collection Schaffer)	Austria
483	Petersbuch 41	Germany
484	Eibiswald	Austria
485	Furth 460m	Germany
486	Eberstetten 2 (unter Weg)	Germany
487	Untereichen-Altenstadt 565m	Germany
488	Untereichen-Altenstadt 565m	Germany
489	Randle Cliff, Calvert County, Maryland	USA
490	Pontlevoy-Thenay, Loir-et-Cher	France

	Locality	Country
491	Pontlevoy-Thenay, Loir-et-Cher	France
492	Biberach-Jordanbad	Germany
493	Heggbach am Buchhaldenberg, Maselheim, near Biberach	Germany
494	Heggbach am Buchhaldenberg, Maselheim, near Biberach	Germany
495	Coldspring Trinity River Local Fauna, San Jacinto County, Texas	USA
496	Chesapeak Beach RR Station, Maryland	USA
497	Oberbernbach a	Germany
498	Oggenhof near Häder	Germany
499	Vieux-Collonges, Saint-Cyr-au-Mont-d´Or, Rhône, France	France
500	Vieux-Collonges, Saint-Cyr-au-Mont-d´Or, Rhône, France	France
501	Moratilla 2. MOR 2	Spain
502	Gisseltshausen 1b	Germany
503	Castelnau d´Arbieu, Gers	France
504	Dénezé-sous-le-Lude, Maine-et-Loire	France
505	Noyant-sous-le-Lude, Maine-et-Loire	France
506	Savigné-sur-Lathan, Indre-et-Loire	France
507	Gisseltshausen 1a	Germany
508	Sainbach (bei Ichenhofen)	Germany
509	Häder	Germany
510	Unterempfenbach 1d	Germany
511	Walda 2 (oben)	Germany
512	Walda 2 (oben)	Germany
513	Altheim-Breitenlauh 2	Germany
514	Eggingen-Schleiche B	Germany
515	Eggingen-Schleiche B	Germany
516	Maßendorf	Germany
517	Maßendorf	Germany
518	Walda 1 (unten)	Germany
519	Walda 1 (unten)	Germany
520	San Roque 3. SR 3	Spain
521	Sandelzhausen	Germany

	Locality	Country
522	Sandelzhausen unterer Geröllmergel (B)	Germany
523	Sandelzhausen	Germany
524	Sandelzhausen oberer Geröllmergel (D2)	Germany
525	Sandelzhausen oberer Geröllmergel (E)	Germany
526	Sandelzhausen unterer Geröllmergel (B)	Germany
527	Sandelzhausen unterer Geröllmergel (C1)	Germany
528	Sandelzhausen unterer Geröllmergel (C2)	Germany
529	Sandelzhausen unterer Geröllmergel (C3/D1)	Germany
530	Monteagudo, Aragón	Spain
531	Puttenhausen 2	Germany
532	Puttenhausen E	Germany
533	Schießen	Germany
534	Schießen	Germany
535	Schönenberg near Jettingen	Germany
536	Schönenberg near Jettingen	Germany
537	Teiritzberg (T1 = 001/D/C), Korneuburg Basin, Lower Austria	Austria
538	Teiritzberg (T1 = 001/D/C), Korneuburg Basin, Lower Austria	Austria
539	Kleinebersdorf, Wolmuth-Sandgrube (010/G/Liegendes), Korneuburg Basin, Lower Austria	Austria
540	Obergänserndorf (OG2), Korneuburg Basin, Lower Austria	Austria
541	Teiritzberg (001/X/C), Korneuburg Basin, Lower Austria	Austria
542	Teiritzberg (001/X/C), Korneuburg Basin, Lower Austria	Austria
543	Weinsteig (107), Korneuburg Basin, Lower Austria	Austria
544	Weinsteig (107/S/B), Korneuburg Basin, Lower Austria	Austria
545	Kirchdorf an der Iller	Germany
546	Langenmosen	Germany
547	Puttenhausen B	Germany
548	Eitensheim	Germany
549	Eitensheim	Germany
550	Randecker Maar	Germany
551	Illerkirchberg 1	Germany
552	Illerkirchberg 1	Germany

	Locality	Country
553	Puttenhausen A	Germany
554	Wackersdorf Westfeld	Germany
555	Contres, Loir-et-Cher	France
556	Günzburg 2/1 Umgehungsstrasse Sande	Germany
557	Günzburg 2/2 Umgehungstr höhere Bereiche der Sande	Germany
558	Günzburg 2/5 Umgehung Sande im Süden Aufschluss	Germany
559	Günzburg 2/6 Umgehung Sande im Norden Aufschluss	Germany
560	La Romieu, Gers	France
561	Forsthart	Germany
562	Arrisdrift	Namibia
563	Arrisdrift	Namibia
564	Aerotrain a Chevilly pres d'Artenay (Loiret)	France
565	Baigneaux-en-Beauce (Eure-et-Loir)	France
566	Suèvres aux Imberts, Loir-et-Cher	France
567	Suèvres aux Imberts, Loir-et-Cher	France
568	Erkertshofen 1	Germany
569	Erkertshofen 2	Germany
570	Gerlenhofen	Germany
571	Can Mas near El Papiol, Barcelone province, Cataluña, Vallés-Penedés basin	Spain
572	Ba?a Dolina in Ve?ký Krtíš	Slovakia
573	Reisensburg near Günzburg	Germany
574	Reisensburg near Günzburg	Germany
575	Culebra Reach, Station 1998 + 00, 600 feet W of center line of Panama Canal	Panama
576	Freudenegg 2 Baggersee	Germany
577	Freudenegg 3 Baggersee	Germany
578	Freudenegg 3 Baggersee	Germany
579	Petersbuch 4	Germany
580	Djebel Zelten	Libya
581	Béon 1 (Montréal-du-Gers)	France
582	Béon 1 (Montréal-du-Gers)	France
583	Petersbuch 7	Germany

	Locality	Country
584	Pamunkey River, between King William and New Kent Counties, Virginia	USA
585	Pollack Farm Site near Cheswold, Kent County, Delaware	USA
586	Rauscheröd near Passau, Bavaria	Germany
587	Langenau 1	Germany
588	Langenau 1	Germany
589	Langenau 2	Germany
590	Langenau 2	Germany
591	Hiwegi loc. R 1	Kenya
592	Hiwegi loc. R 106	Kenya
593	Hiwegi loc. R 3	Kenya
594	Hiwegi loc. R 5	Kenya
595	Mfangano	Kenya
596	Nira and Kachuku near Karungu	Kenya
597	Rangoye, Uyoma peninsula lake Victoria	Kenya
598	Eggingen-Mittelhart	Germany
599	Eggingen-Mittelhart	Germany
600	Walangani	Kenya
601	Auchas	Namibia
602	Leithagebirge between Au and Loretto	Austria
603	Marsolan, Gers	France
604	Neuville-aux-Bois, Loiret	France
605	Grimmelfingen	Germany
606	Kiahera loc. R 120	Kenya
607	Thomas Farm Local Fauna, Gilchrist County, Florida	USA
608	Chitenay, Loir-et-Cher	France
609	Mauvieres, Marcilly-sur-Maulne, Indre-et-Loire	France
610	Thomas Farm Local Fauna, Gilchrist County, Florida	USA
611	Torralba de Ribota (Zaragoza)	Spain
612	Baltringen	Germany
613	Baltringen	Germany
614	Chilleurs-aux-Bois, Loiret (Burdigalian)	France

	Locality	Country
615	La Brosse, Maine-et-Loire	France
616	Stubersheim 3	Germany
617	Glastal	Namibia
618	Langental, nothern Sperrgebiet	Namibia
619	Elisabethfeld (= Elisabeth Bay) area, northern Sperrgebiet	Namibia
620	Chubut Valley south side between Gaiman and Dolavon, Patagonia	Argentina
621	Fiskus	Namibia
622	Grillental, northern Sperrgebiet	Namibia
623	Marsland Quadrangle, Box Butte County, Nebraska	USA
624	Eggenburg-Schindergraben, Lower Austria	Austria
625	Auterive, Haute-Garonne	France
626	Grépiac, Haute-Garonne	France
627	Grépiac, Haute-Garonne	France
628	Landes-le-Gaulois, Loir-et-Cher	France
629	Barbotan-les-Thermes (Gers)	France
630	Aresing (shallow lake)	Germany
631	Tréteau, Allier	France
632	Marcoin, Volvic, Puy-de-Dôme	France
633	Saint-Gérand-le-Puy, Allier	France
634	Saint-Gérand-le-Puy, Allier	France
635	Saint-Gérand-le-Puy, Allier	France
636	Wallenried Channel, 10 km N Fribourg	Switzerland
637	Montaigu-le-Blin, La Chacotte, Allier	France
638	Langy, Allier	France
639	Saulcet, Allier	France
640	Pechbonnieu, Haute-Garonne	France
641	Pechbonnieu, Haute-Garonne	France
642	Toledo Bend Dam, Newton County, Texas	USA
643	Paulhiac, Lot-et-Garonne	France
644	Peublanc, Sorbier, Allier	France
645	Créchy, Allier	France

	Locality	Country
646	Venelles 35 km N Marseille	France
647	Toulouse Puits Borderouge niveau inférieur, Haute-Garonne	France
648	Hautesvignes, Lot-et-Garonne	France
649	Moissac 2, Tarn-et-Garonne	France
650	Moissac 2, Tarn-et-Garonne	France
651	La Milloque, Hautefage, Lot-et-Garonne	France
652	Mine des Rois, Dallet et Pont-du-Château, Puy-de-Dôme	France
653	Saint-Thomas, Hautefage, Lot-et-Garonne	France
654	Dieupentale, Tarn-et-Garonne	France
655	Oberleichtersbach	Germany
656	Oberleichtersbach	Germany
657	Coderet, Bransat, Allier	France
658	Gannat, Allier (shallow lake)	France
659	Prairéal, Vaumas, Allier	France
660	Pech-Desse, Moulliac, Tarn-et-Garonne, Phosphorite du Quercy	France
661	Pech-Desse, Moulliac, Tarn-et-Garonne, Phosphorite du Quercy	France
662	Paali Nala level 1, Balochistan	Pakistan
663	Pech-du-Fraysse, Saint-Projet, Tarn-et-Garonne, Phosporites du Quercy	France
664	Pech-du-Fraysse, Saint-Projet, Tarn-et-Garonne, Phosporites du Quercy	France
665	Pech-du-Fraysse, Saint-Projet, Tarn-et-Garonne, Phosporites du Quercy	France
666	Veauche, Loire	France
667	Paali Nala level C2, Balochistan	Pakistan
668	Aktau Chul´adyr Formatioon Lower Member	Kazakhstan
669	Marseille, Saint-André, Bouches-du-Rhône	France
670	Marseille, Saint-André, Bouches-du-Rhône	France
671	Le Crozatier, Brons, Cantal	France
672	Le Crozatier, Brons, Cantal	France
673	Le Garouillas, Phosphorites du Quercy	France
674	Rigal-Jouet, Phosphorites du Quercy	France
675	Neschers à La Sauvetat, Puy-de-Dôme	France
676	Saint-Germain-Lembron, Puy-de-Dôme	France

	Locality	Country
677	Vaumas, Allier	France
678	Puylaurens, Tarn	France
679	Pichovet, Vachères, Lubéron, Provence-Alpes-Côte d´Azur	France
680	Espenhain near Leipzig	Germany
681	Talagay (Tayzhuzgen section)	Kazakhstan
682	Saint-Vivien-de-Monségur, Gironde	France
683	Itardies (Caylus, Tarn-et-Garonne)	France
684	Mounayne, Phosphorites du Quercy	France
685	Roqueprune, Mouillac, Tarn-et-Garonne, Phosphorites du Quercy	France
686	Pech-Crabit, Bach, Lot, Phosphorites du Quercy	France
687	Pech-Crabit, Bach, Lot, Phosphorites du Quercy	France
688	North Mesa, Shara Murun region, Inner Mongolia	China
689	Twin Oboes, Shara Murun region, Inner Mongolia	China
690	Ardyn Obo basin, Chinese Postroad	Mongolia
691	Ardyn Obo basin, Chinese Postroad	Mongolia
692	Ardyn Obo basin, Chinese Postroad	Mongolia
693	Promontory Bluff (Sair Usu 150- Kalgan 350 miles)	Mongolia
694	Bournoncle-Saint-Pierre, Auvergne, Haute-Loire	France
695	Los Barros quarry, 4 km SE Àvila	Spain
696	La Plante 2, Concots, Lot, Phosporite du Quercy	France
697	Mas de Got A, Phosphorites du Quercy	France
698	Mas de Got B, Phosphorites du Quercy	France
699	Quercy (Phosphorites du Quercy)	France
700	Quercy (Phosphorites du Quercy)	France
701	Thaytiniti, Dhofar	Oman
702	Kalgan area	China
703	Gua Teg	Mongolia
704	AMNH quarries A, B, C, Fayyum	Egypt
705	Neumühle near Weinheim/Alzey	Germany
706	Ruch, Gironde	France
707	Sainte-Marthe, Eymet, Dordogne	France

	Locality	Country
708	Ravet-Lupo, Caylus, Lot, Phosphorites du Quercy	France
709	Soumaille, Pardaillan, Lot-et-Garonne	France
710	Aubrelong 1, Phosphorites du Quercy, Lot	France
711	Baby 2, Saint-André-et-Appelles, Gironde	France
712	Saint-Capraise-d´Eymet, Dordogne	France
713	Korablik Kiinkerish	Kazakhstan
714	Ardyn Obo (Ergelyeen Dzo), SE Gobi	Mongolia
715	Escamps, Phosphorites du Quercy	France
716	Lostange, Beduer, Lot	France
717	Lostange, Beduer, Lot	France
718	Rosières, Escamps, Lot, Phosporites du Quercy	France
719	Sainte-Croix-de-Brignon, Gard	France
720	Sindou D, Phosphorites du Quercy	France
721	Paris Montmartre	France
722	Côja, Cerâmica da Carriça	Portugal
723	La Débruge = Butte de Sainte Radegonde (pres d´Apt, Gargas, Vaucluse)	France
724	La Grave, Bonsac, Gironde	France
725	Langlès, Saint-Martin-de-Villeréal, Lot-et-Garonne	France
726	Sainte-Néboule, Béduer, Lot	France
727	Santiago Yolomécatl, Oaxaca	Mexico
728	Santiago Yolomécatl, Oaxaca	Mexico
729	Calf Creek near Eastend, Saskatchewan	Canada
730	Chéry-Chartreuve (Aisne)	France
731	Grisolles, Est du Basin de Paris, Aisne	France
732	Rocourt-Saint-Martin, Aisne	France
733	Rocourt-Saint-Martin, Aisne	France
734	Myaing UCMP locality V6204	Myanmar
735	Thandaung kyitchaung, UCMP locality V78090	Myanmar
736	Naia, Tondela, Viseu	Portugal
737	Castres, Bassin de l´Agout, Tarn	France
738	Lautrec, Tarn	France

	Locality	Country
739	Robiac, Saint-Mamert, Gard	France
740	Robiac, Saint-Mamert, Gard	France
741	Mazaterón, Soria Province, Castilla y León	Spain
742	Issel, Department Aude	France
743	Le Guépelle, Saint-Witz, Val d´Oise	France
744	Aigues-Vives 2, Hérault	France
745	Jumencourt, Aisne	France
746	La Défense, Hauts-de-Seine	France
747	Swift Current Creek, southern Saskatchewan	Canada
748	Geiseltal near Halle (Mücheln), Sachsen-Anhalt	Germany
749	Bouxwiller, Bas-Rhin	France
750	Stena	Kazakhstan
751	UCMP V98009, Uinta County, Wyoming	USA
752	North Fork, Wapiti Valley north Shoshone River (NF-5 Wapiti III), Park County, Wyoming	USA
753	Cuis (Marne)	France
754	Grauves (Marne)	France
755	Mancy, Marne	France
756	Monthelon, Marne	France
757	Haunsberg near St. Pankraz, Salzburg	Austria
758	Andarak 2, Osh Region	Kyrgyzstan
759	Andarak 1, Osh Region	Kyrgyzstan
760	Khayzhin-Ula 2	Mongolia
761	Saint-Papoul NE Carcasonne, Aude	France
762	North Fork, Wapiti Valley north Shoshone River (NF-16 Wapiti II), Park County, Wyoming	USA
763	North Fork, Wapiti Valley north Shoshone River (NF-17 Wapiti II), Park County, Wyoming	USA
764	North Fork, Wapiti Valley north Shoshone River (NF-3 Wapiti II), Park County, Wyoming	USA
765	North Fork, Wapiti Valley north Shoshone River (NF-8 Wapiti II), Park County, Wyoming	USA
766	UCMP V70251, Patrick Draw S, Sweetwater County, Wyoming	USA
767	UCMP V70251, Patrick Draw S, Sweetwater County, Wyoming	USA
768	UCMP V74024, Turtle Graveyard General, Sweetwater County, Wyoming	USA
769	Tsagan-Khushu (Naran member, layer 2)	Mongolia

	Locality	Country
770	Kaseki-Kabe near Shiramine, Kuwajima, Hakusan City, Ishikawa Prefecture, Honshu	Japan

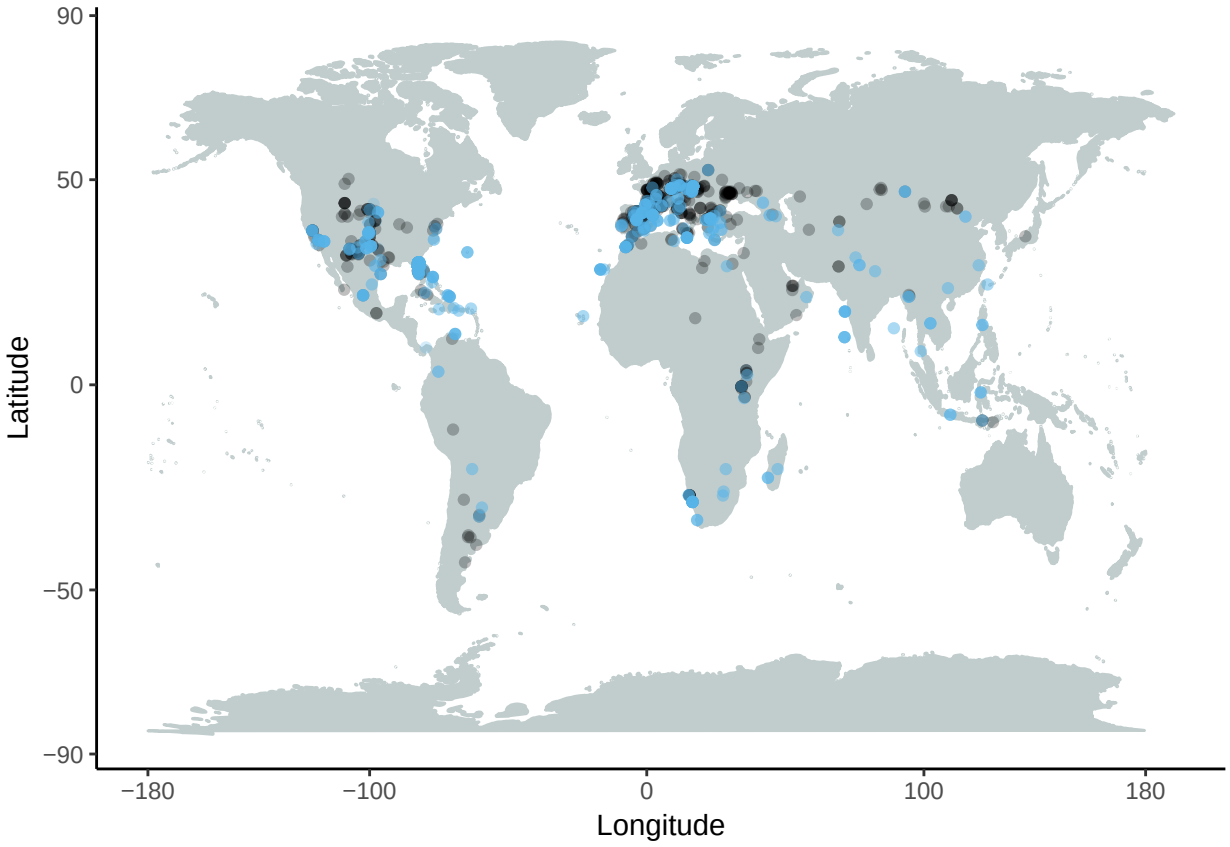


Figure 2: Map displaying all fossil occurrences of testudinids, with color indicating whether relevant literature was available (black if not) and if it was, whether body size data was available or not (yes and no, respectively).

body size of testudinidae

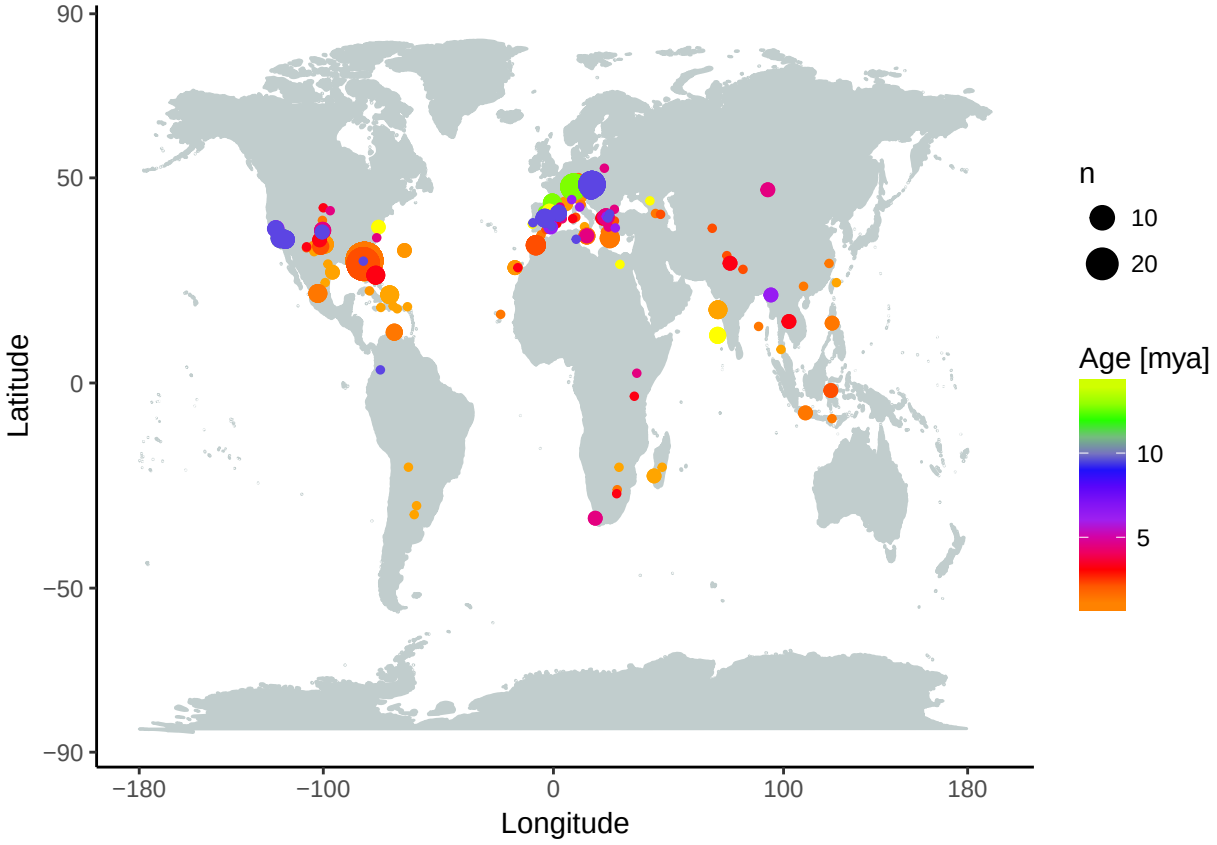


Figure 3: Map displaying all localities for which body size data for testudinids was available in the literature. Size of points denotes sample size, color denotes approximate age.

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

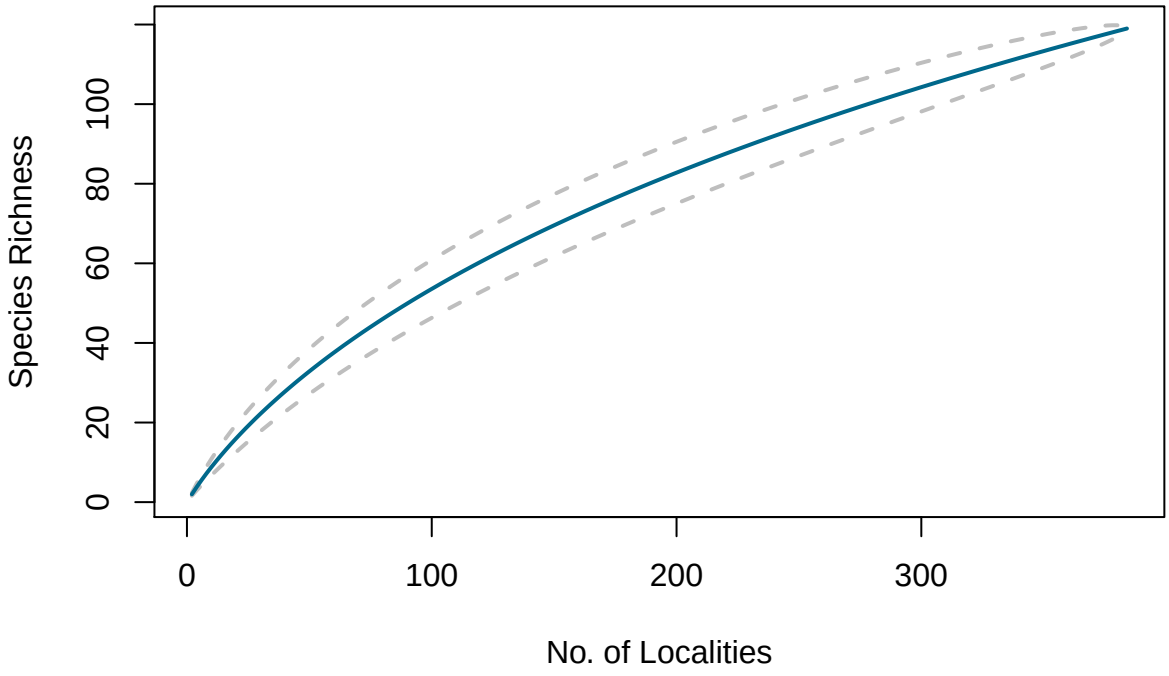
EpochBins	Genus	n	meanCL
Burdigalian/Aquitanian	Namibchersus	9	518.1111
Burdigalian/Aquitanian	Paleotestudo	2	146.1500
Burdigalian/Aquitanian	Testudo	6	252.1167
Burdigalian/Aquitanian	Titanochelon	1	1001.0000

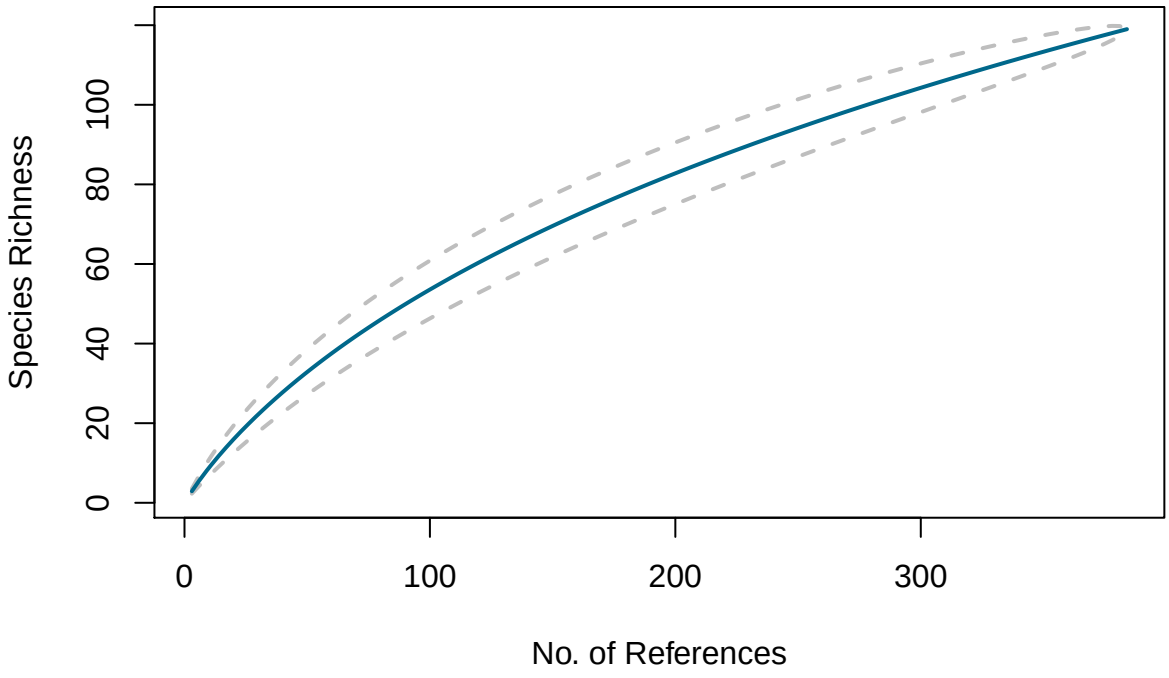
Table 6: General overview over genera, with sample sizes and mean CL.

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





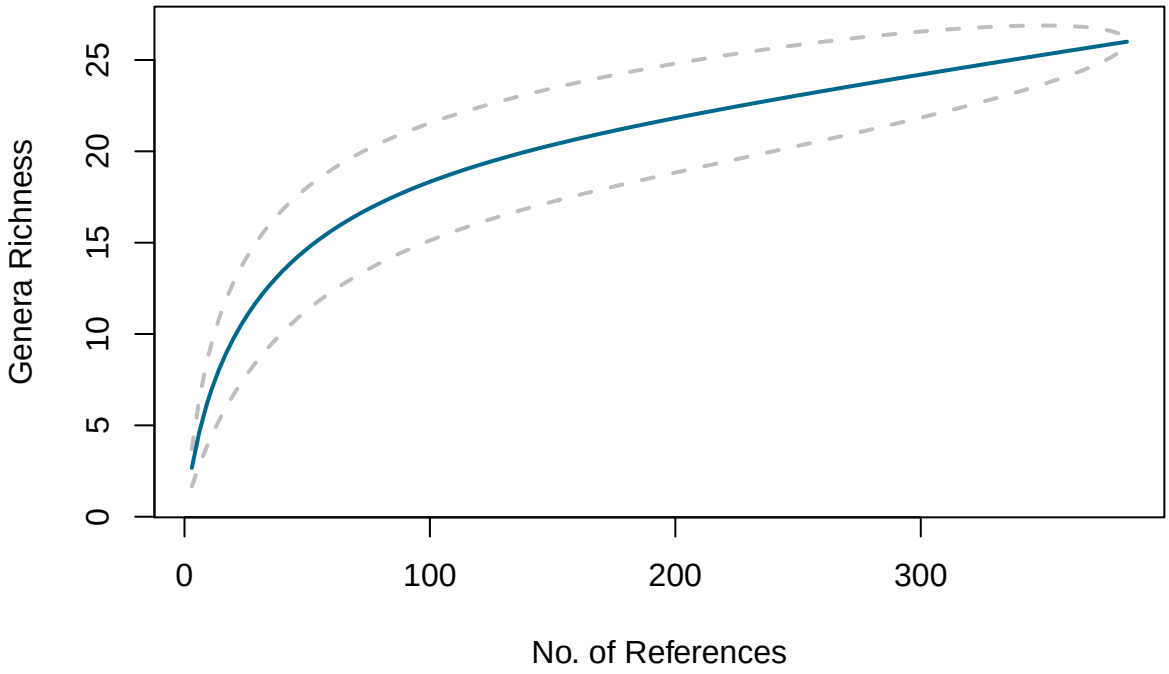


Figure 4: Sampling Accumulation Curve of fossil genera per reference

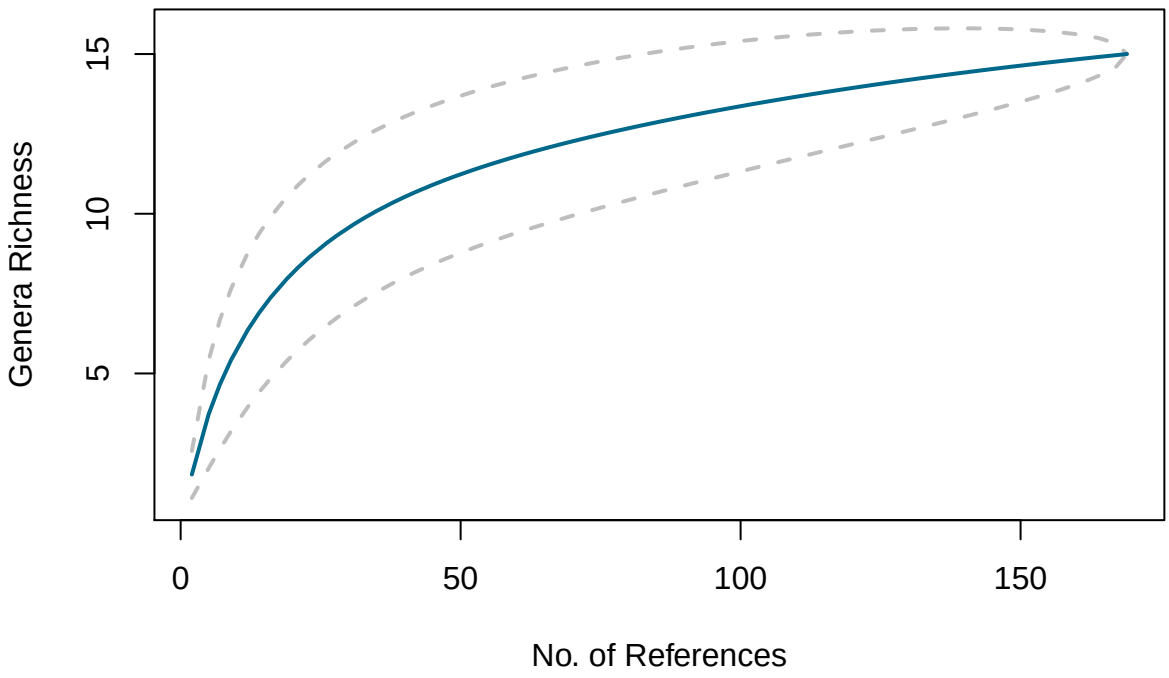


Figure 5: Sampling Accumulation Curve of fossil genera per reference, Eurasia

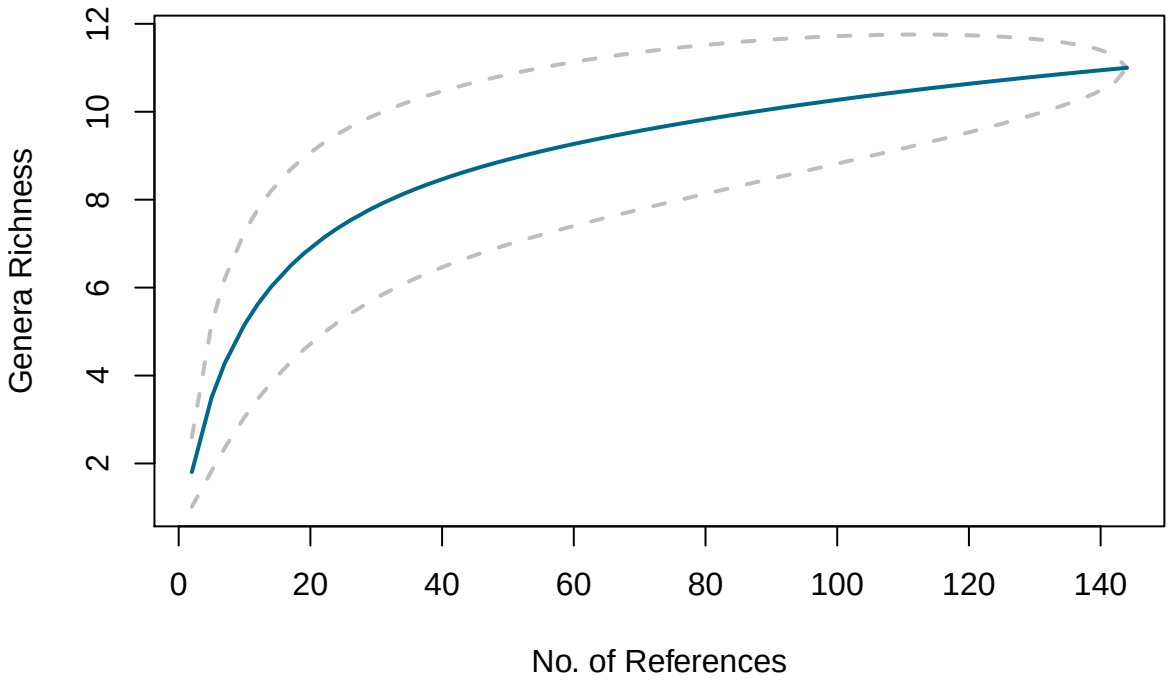


Figure 6: Sampling Accumulation Curve of fossil genera per reference, Europe

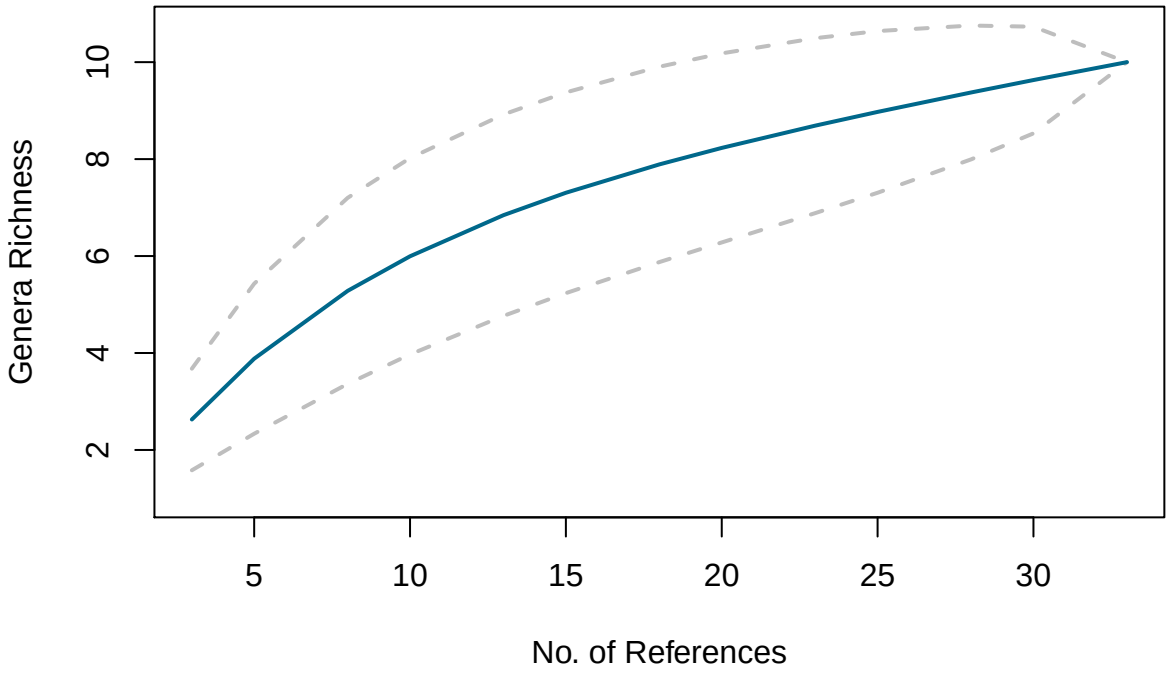


Figure 7: Sampling Accumulation Curve of fossil genera per reference, Africa

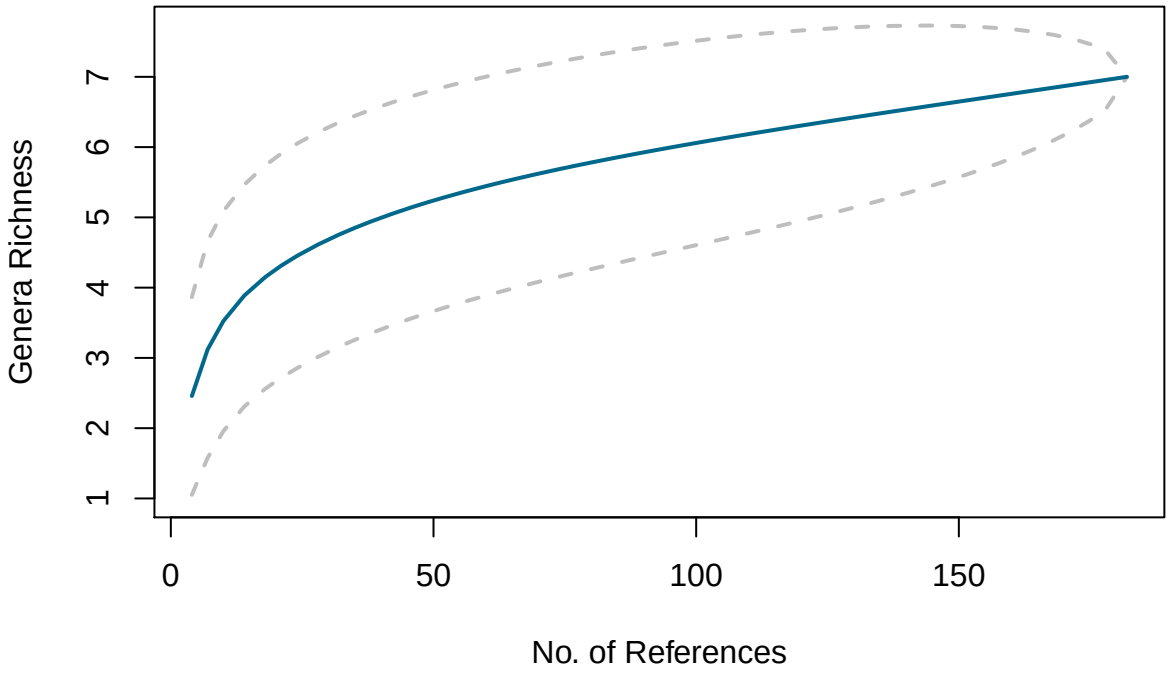


Figure 8: Sampling Accumulation Curve of fossil genera per reference, America

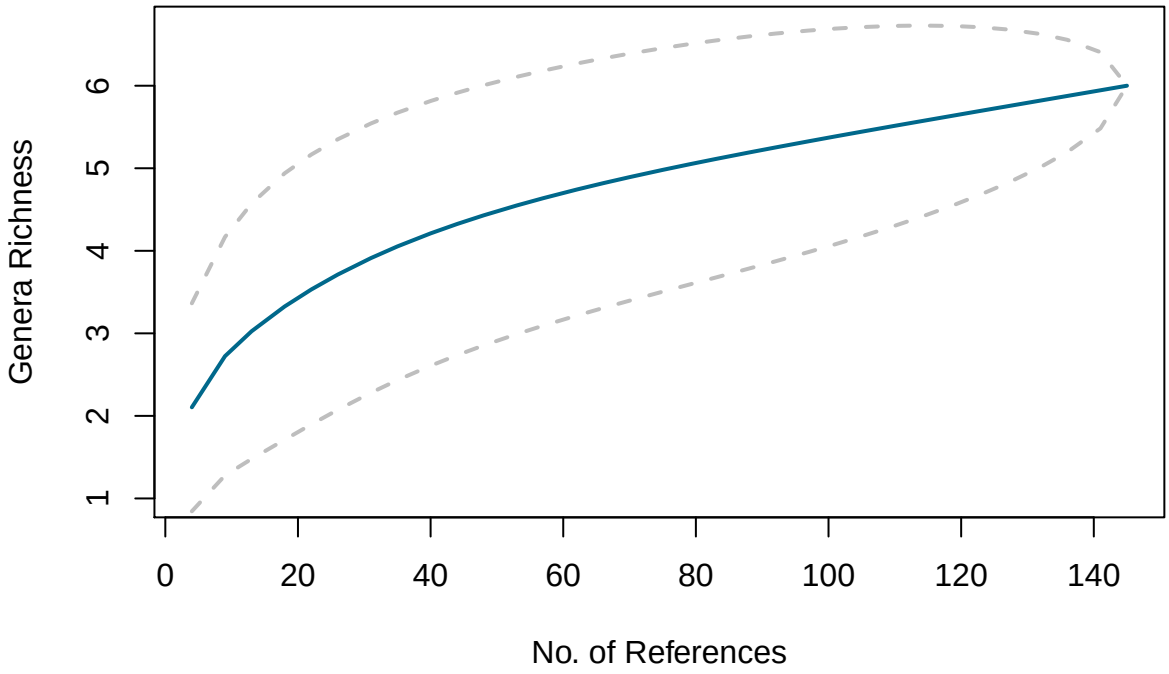


Figure 9: Sampling Accumulation Curve of fossil genera per reference, N-America

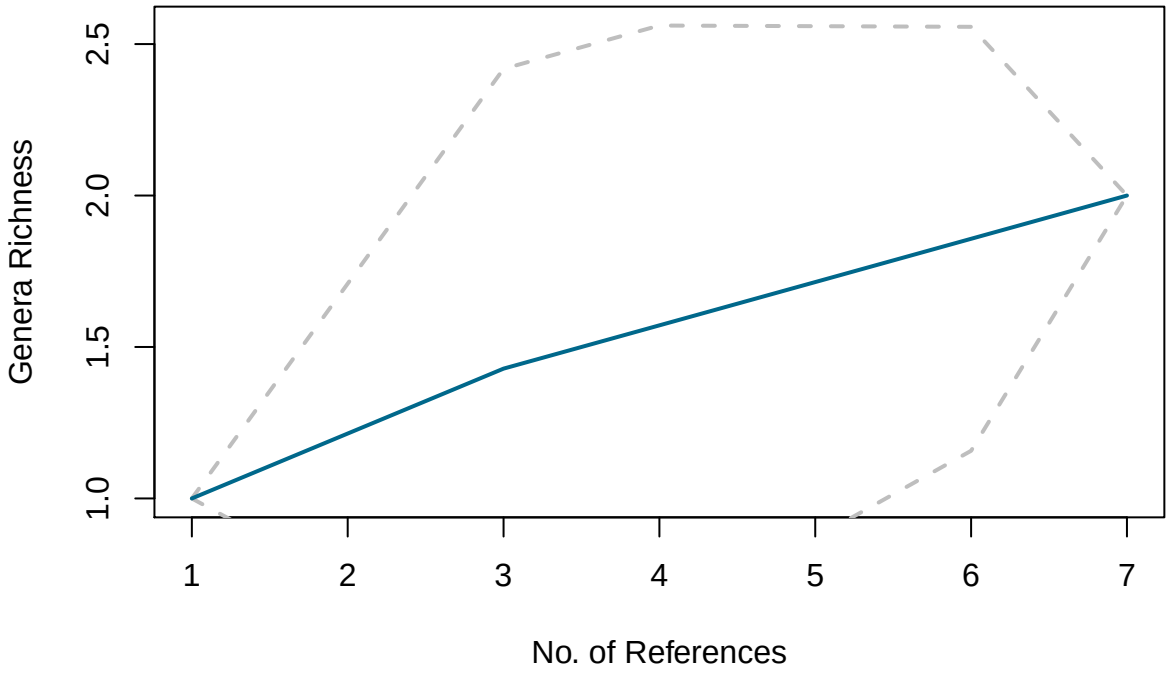


Figure 10: Sampling Accumulation Curve of fossil genera per reference, S-America

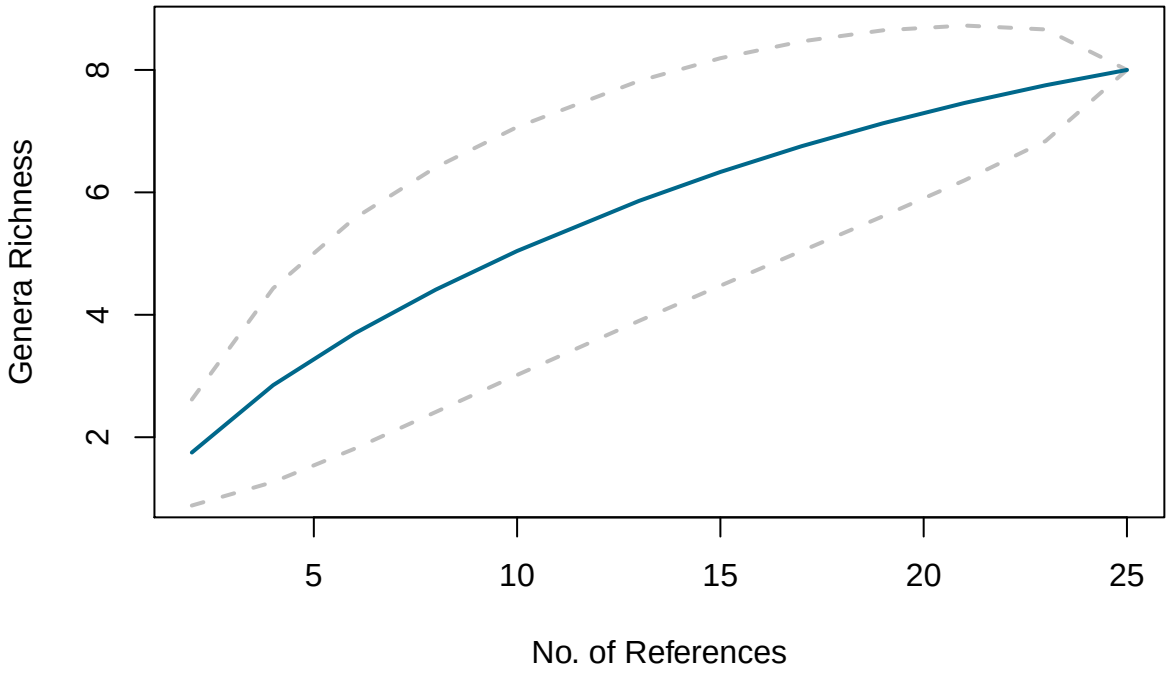
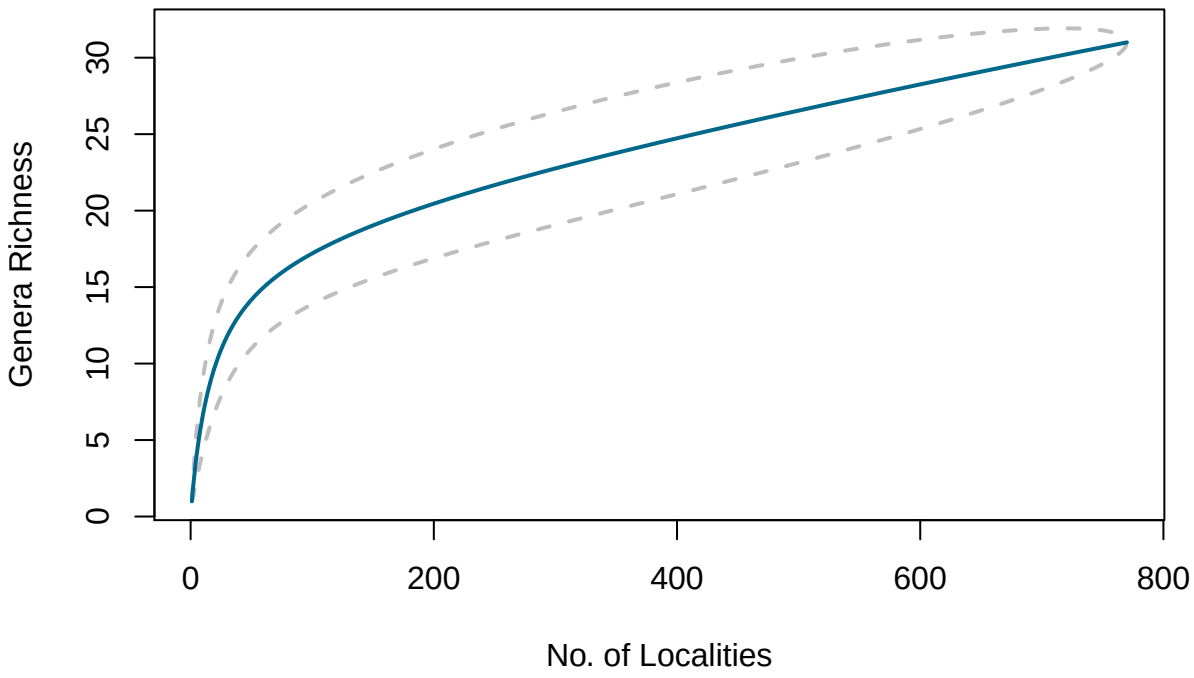


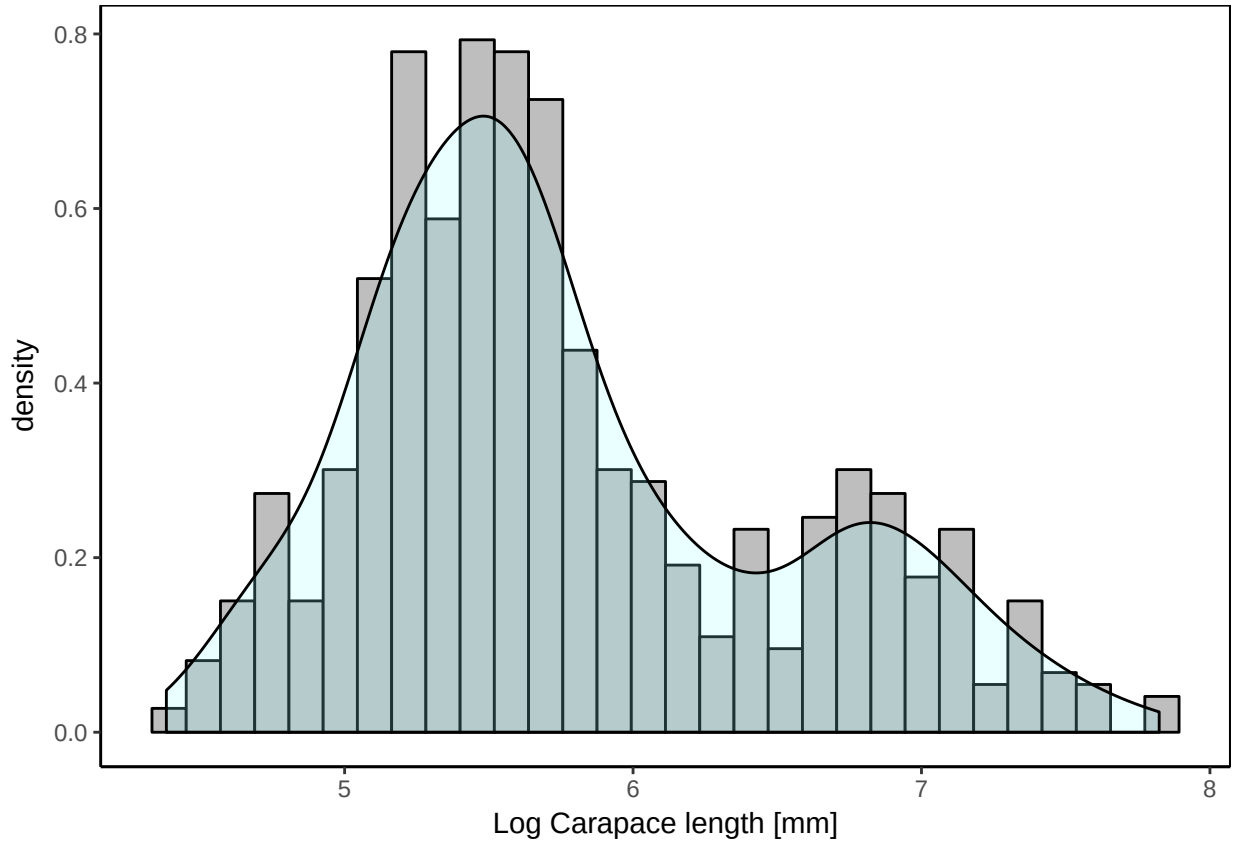
Figure 11: Sampling Accumulation Curve of fossil genera per reference, Asia

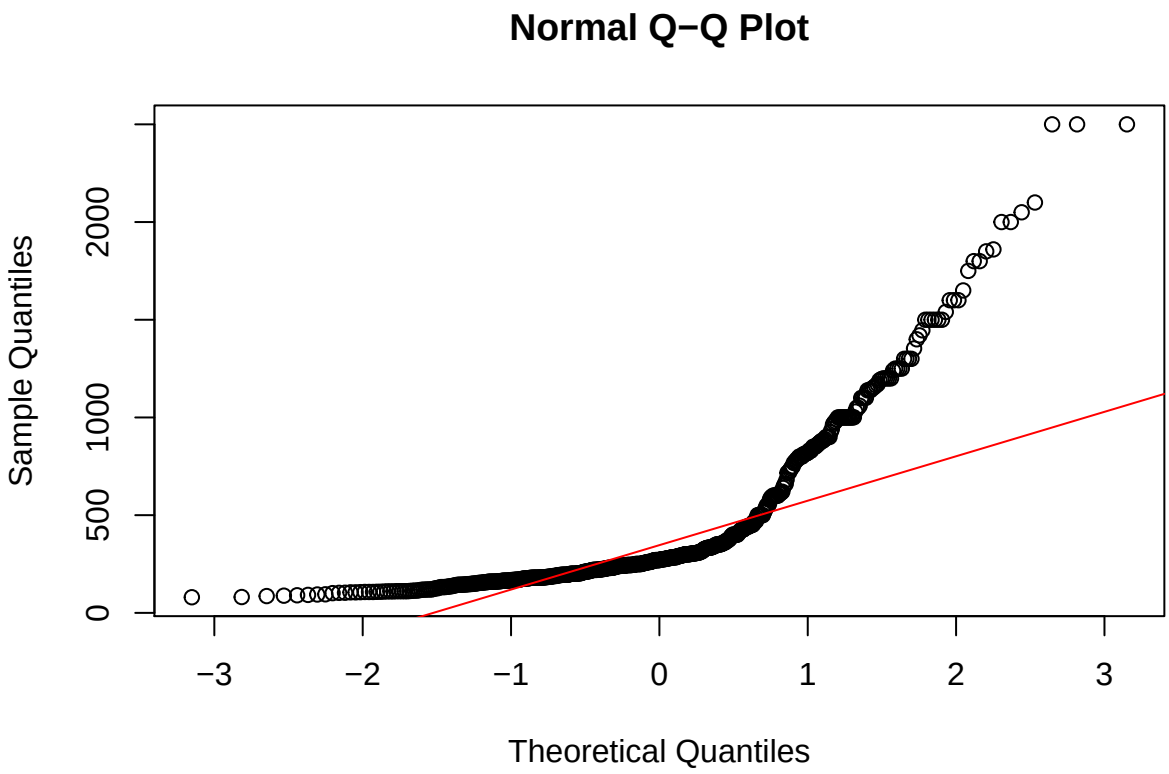

Genera Richness
0
5
10
15
20
25
30
0
200
400
600
800
No. of Localities

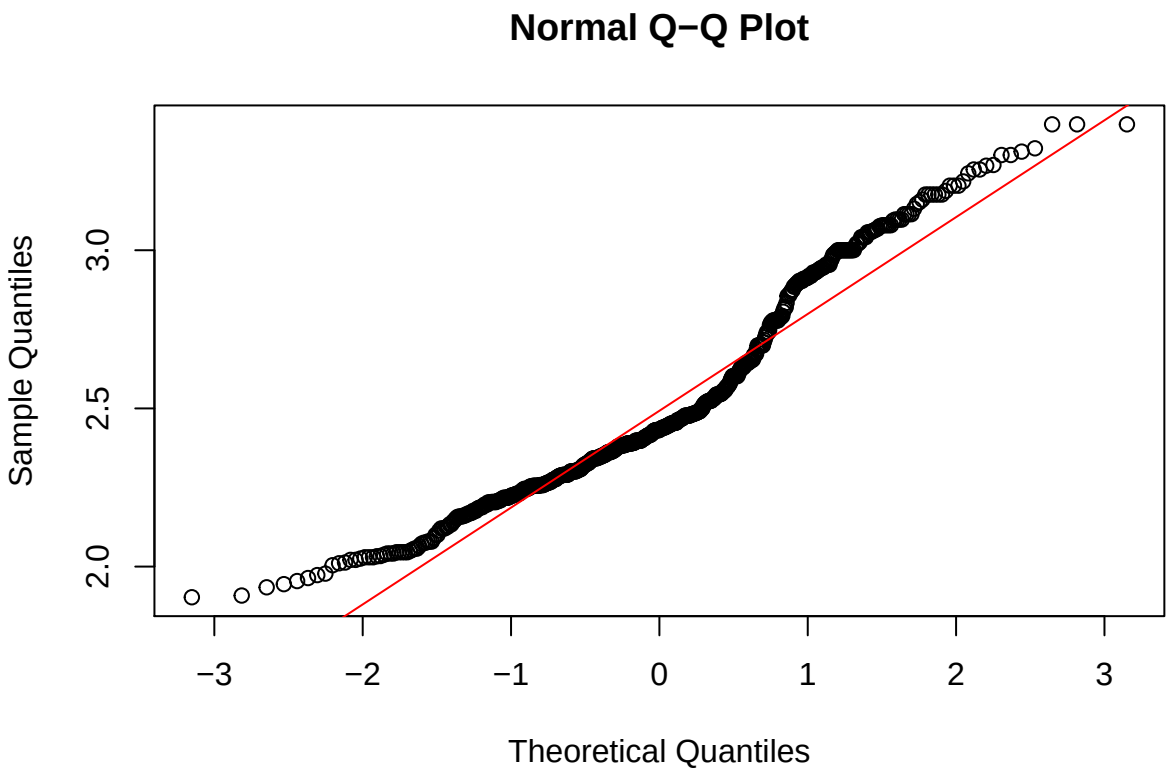
Histograms

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`.
```

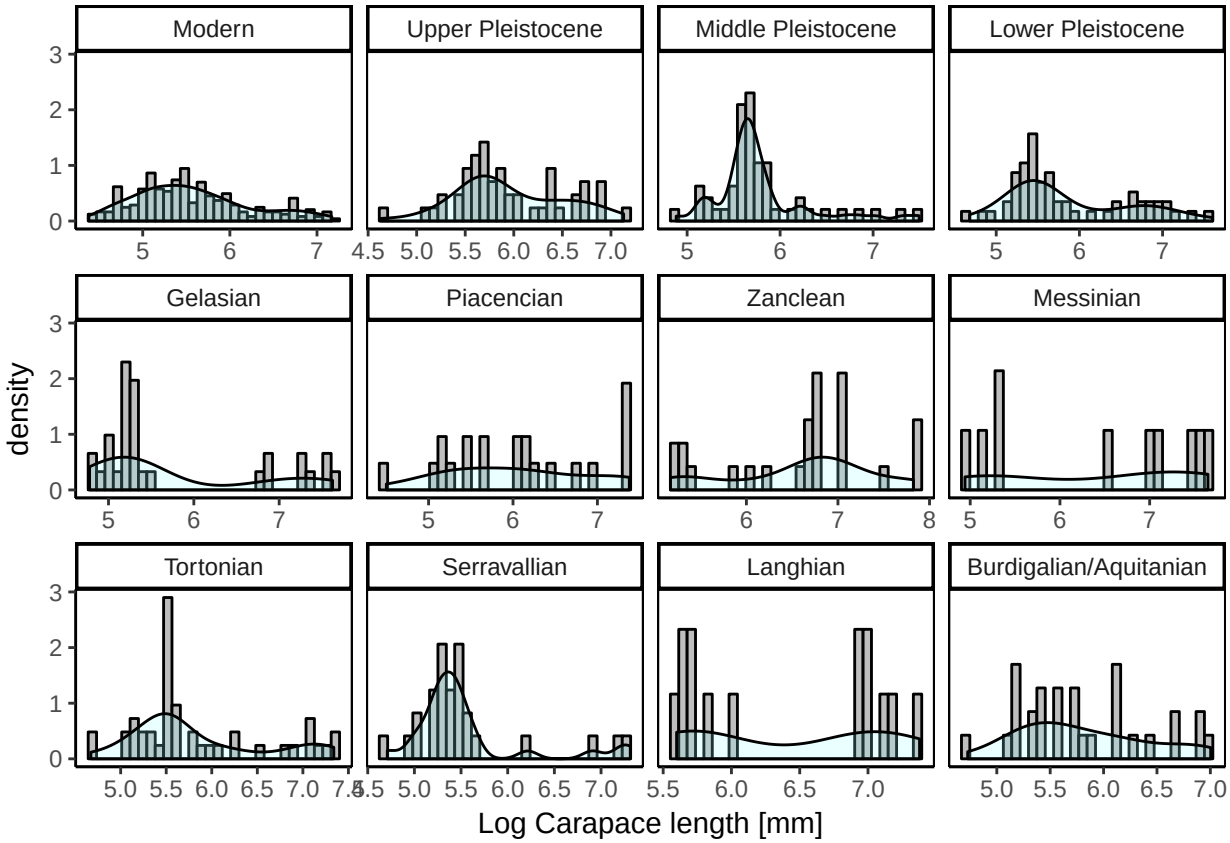


Figure 12: Distribution of body size data per time bin, logtransformed.

modern vs. fossil

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

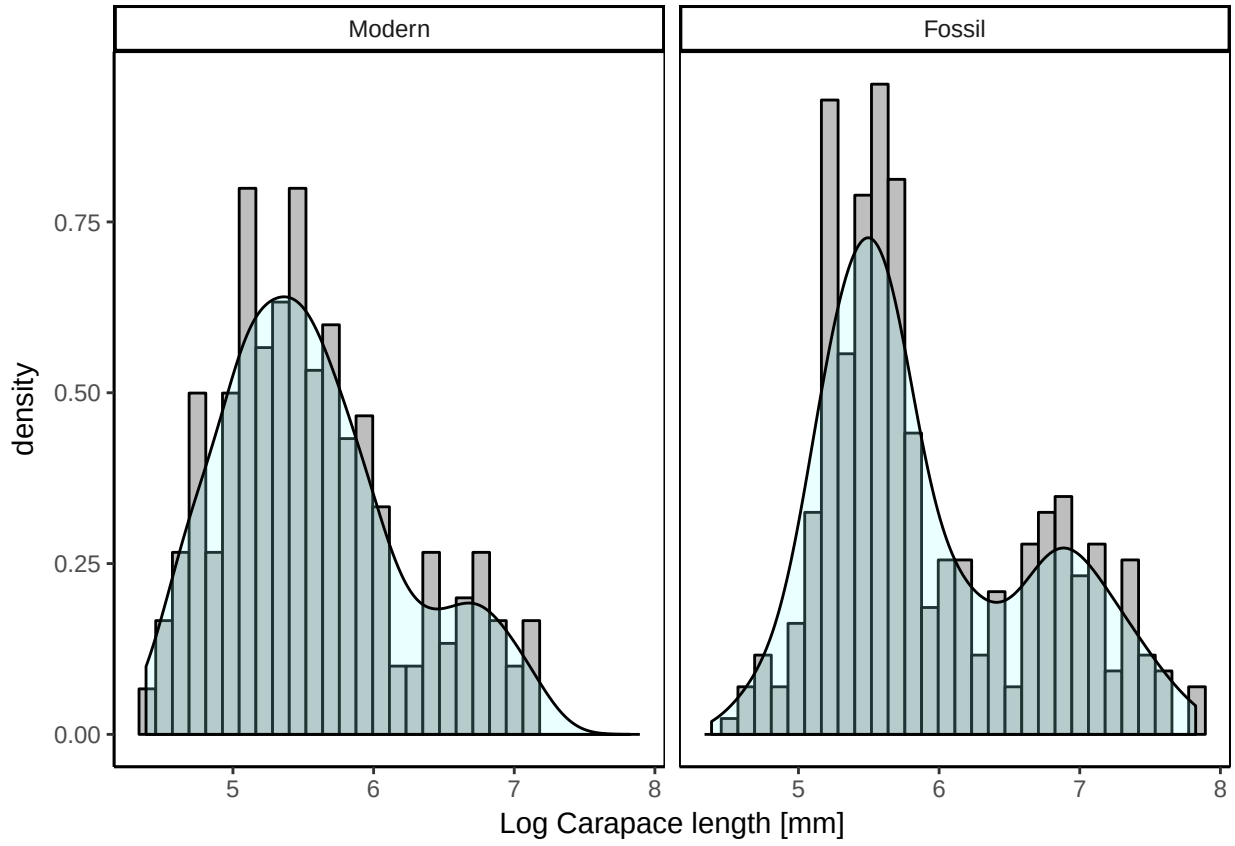


Figure 13: Distribution of body size data modern vs. fossil, logtransformed.

modern vs. fossil, continental vs. insular

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

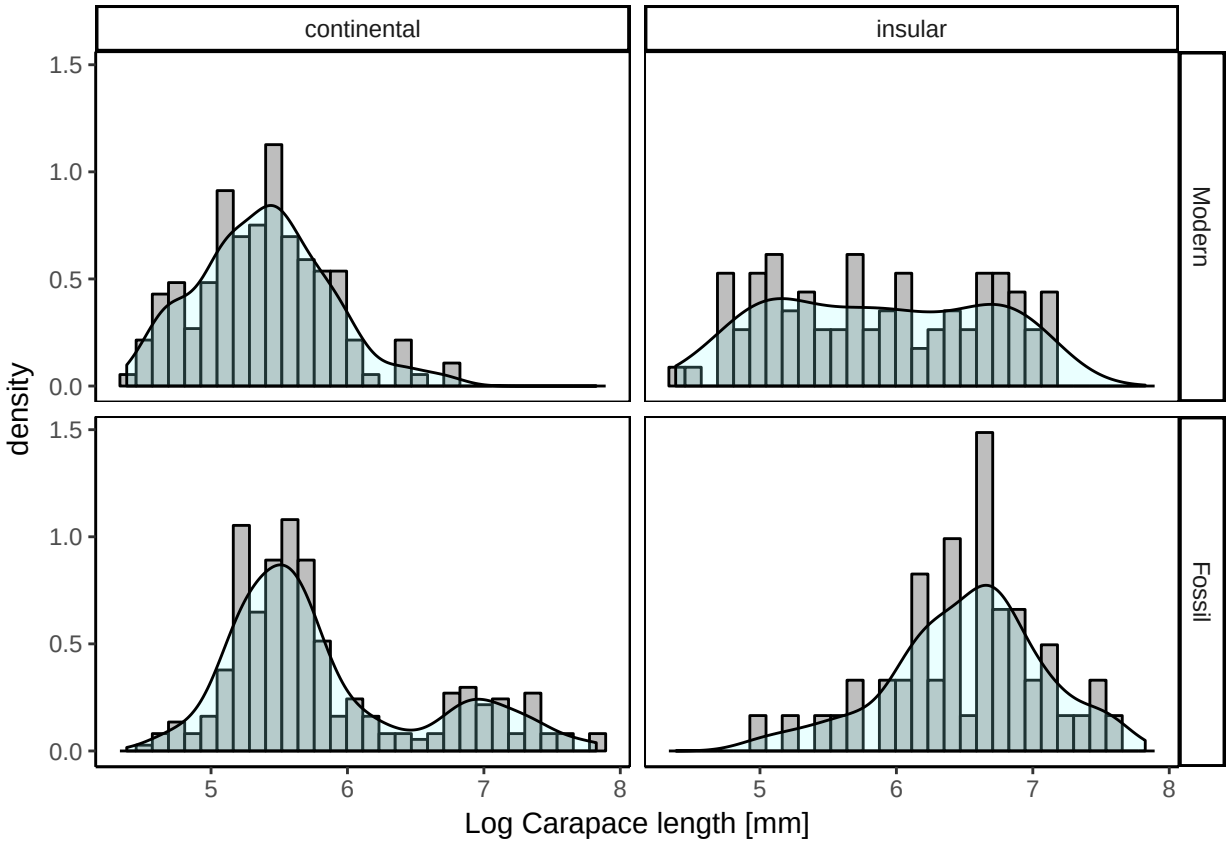


Figure 14: Distribution of body size data modern vs. fossil, continental vs. insular logtransformed.

continental vs. insular

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

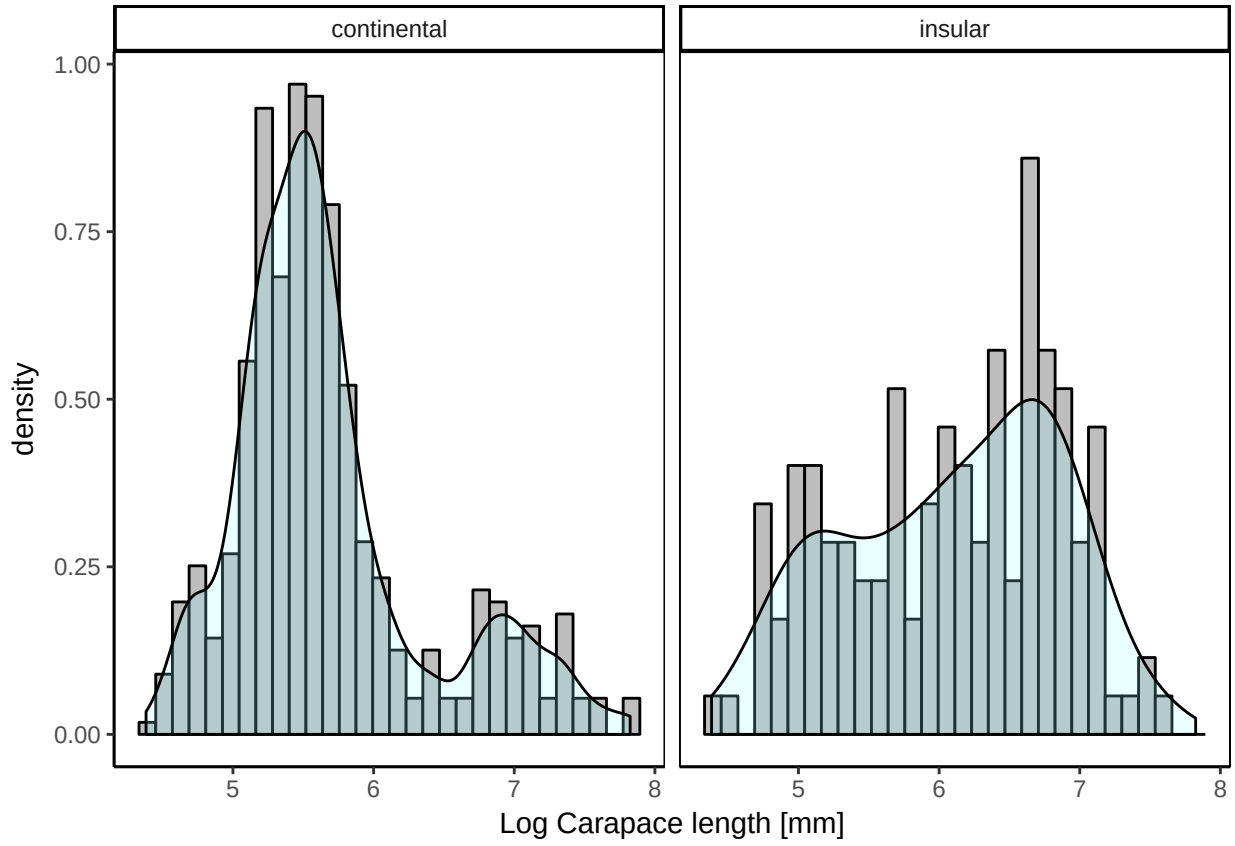


Figure 15: Distribution of body site data of continental (n) and insular(y) species, logtransformed.

continents

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

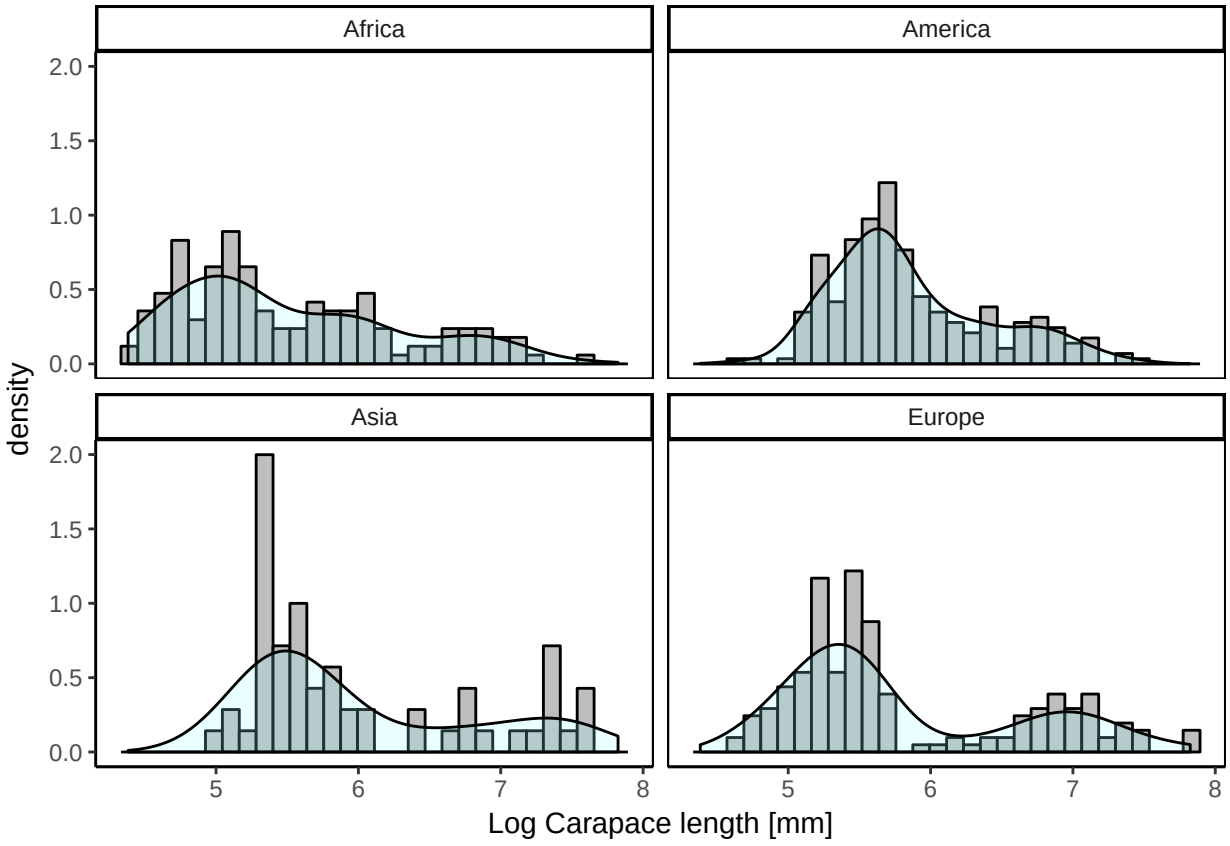


Figure 16: Distribution of body site data per continent, logtransformed.

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

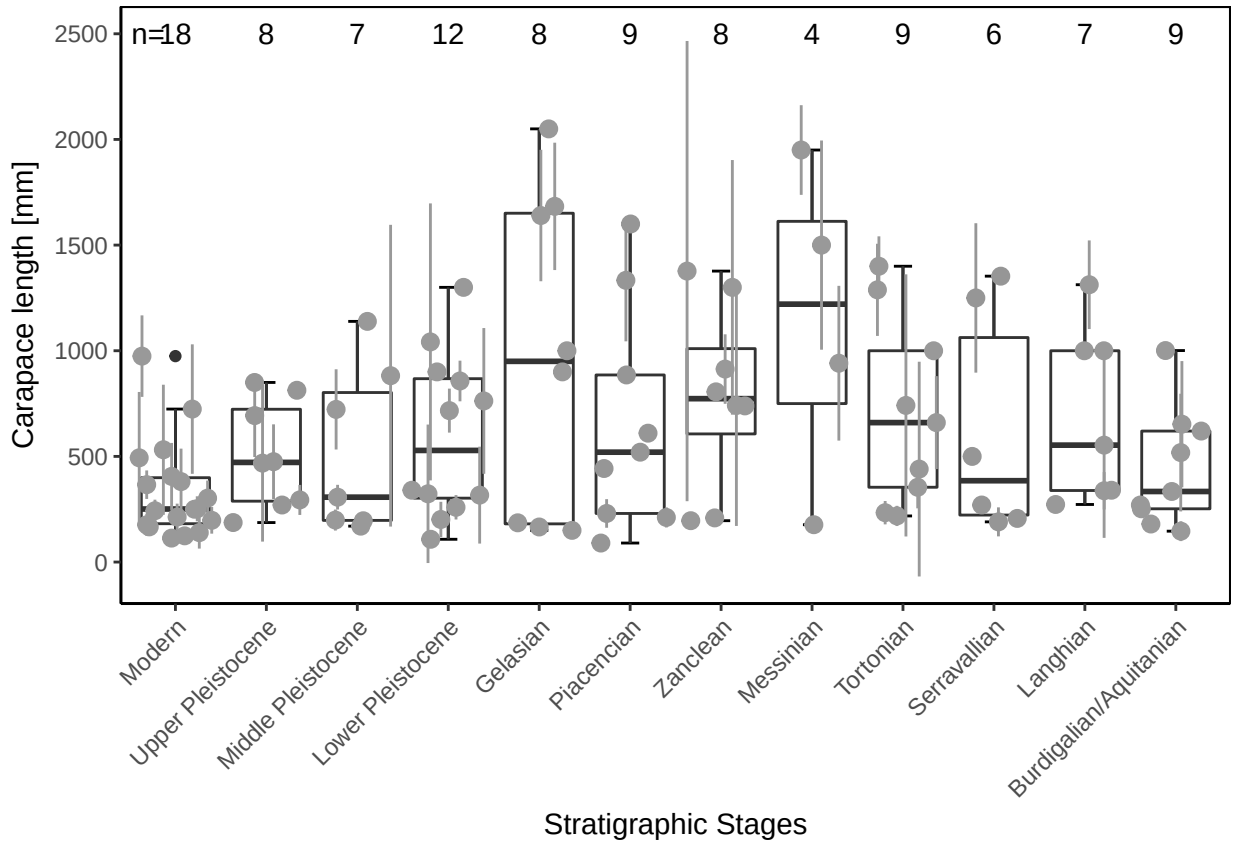


Figure 17: Boxplots of mean CL per time bin, including mean and sd CL for each genus (as pointrange).

```
## [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
```

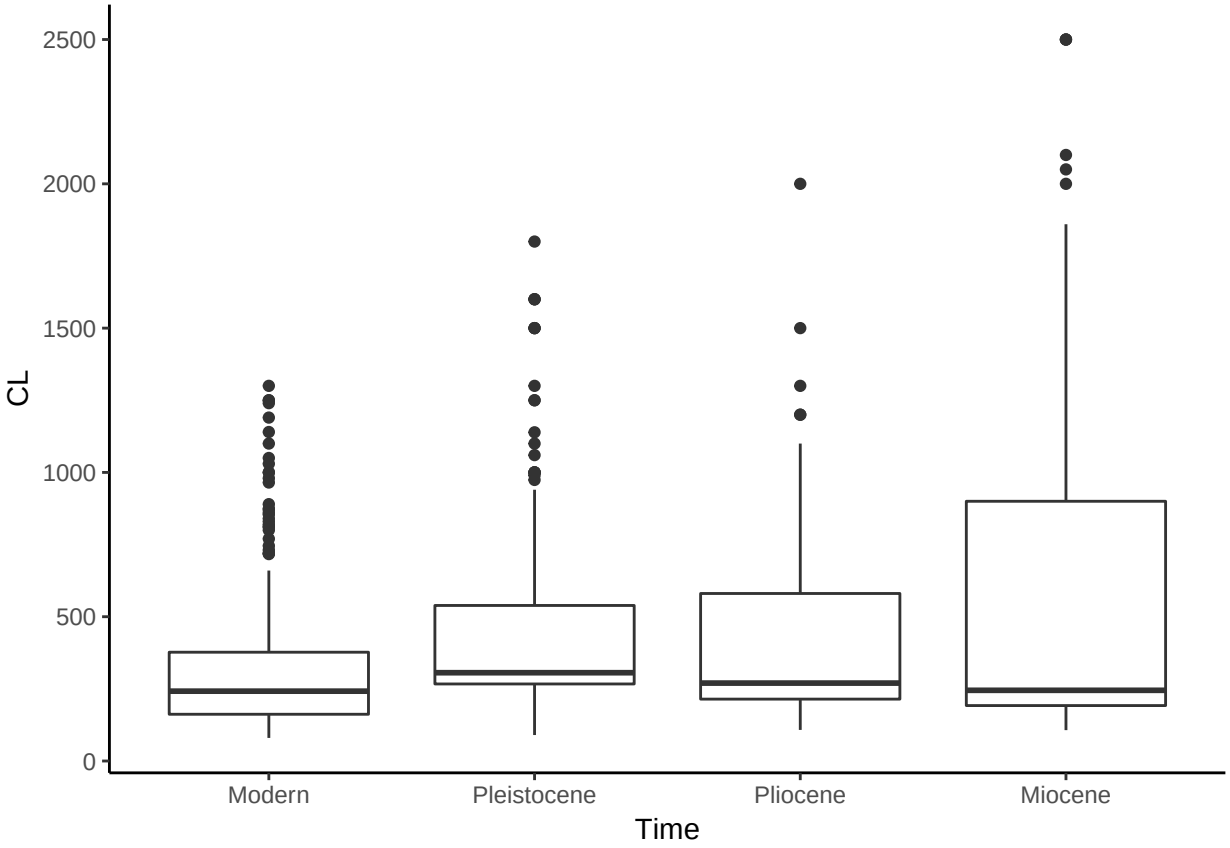
```
## Messinian-Langhian                              FALSE
## Messinian-Burdigalian/Aquitanian                FALSE
## Tortonian-Serravallian                          FALSE
## Tortonian-Langhian                              FALSE
## Tortonian-Burdigalian/Aquitanian                FALSE
## Serravallian-Langhian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

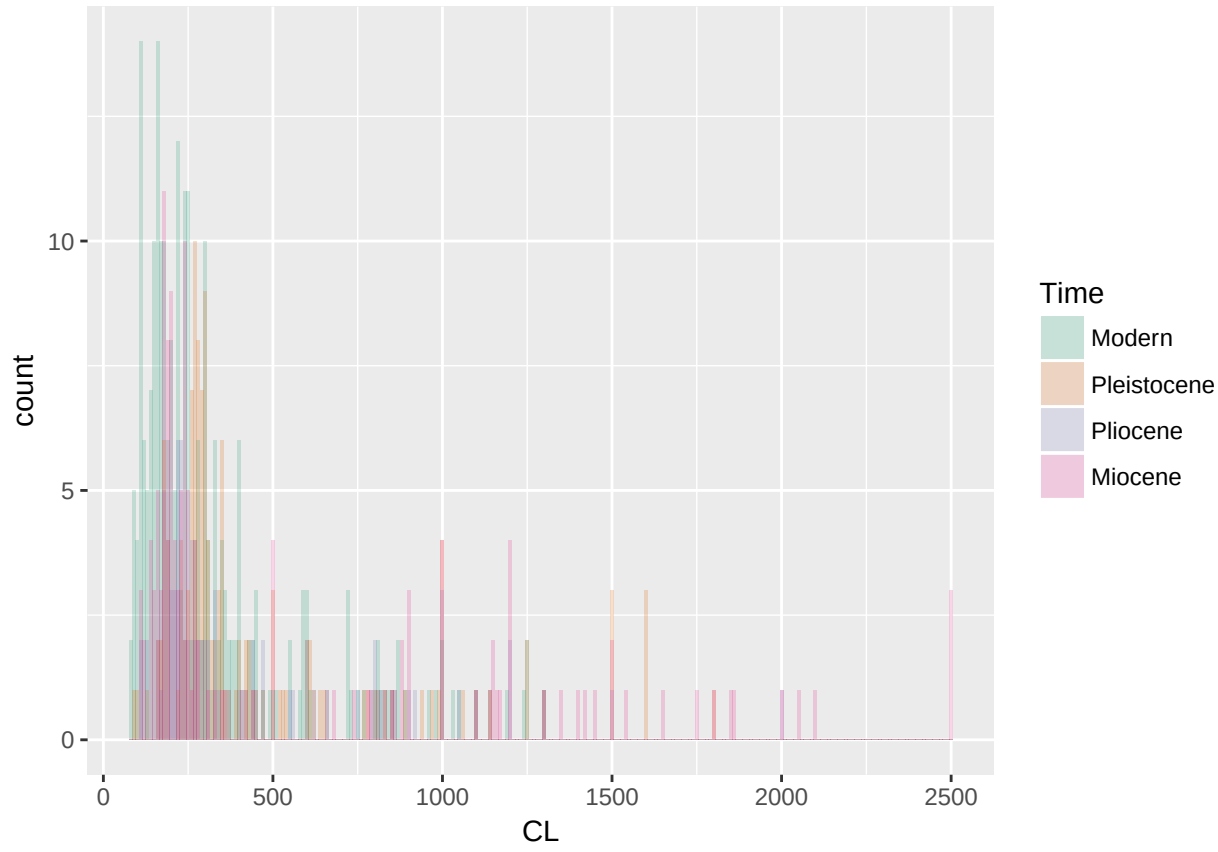
```
## W = 1643.5, p-value = 0.428
## alternative hypothesis: true location shift is not equal to 0
## [1] FALSE
##
##  Wilcoxon rank sum test with continuity correction
##
## data:  LPle and G
## W = 1124, p-value = 0.01802
## alternative hypothesis: true location shift is greater than 0
## [1] TRUE
## 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

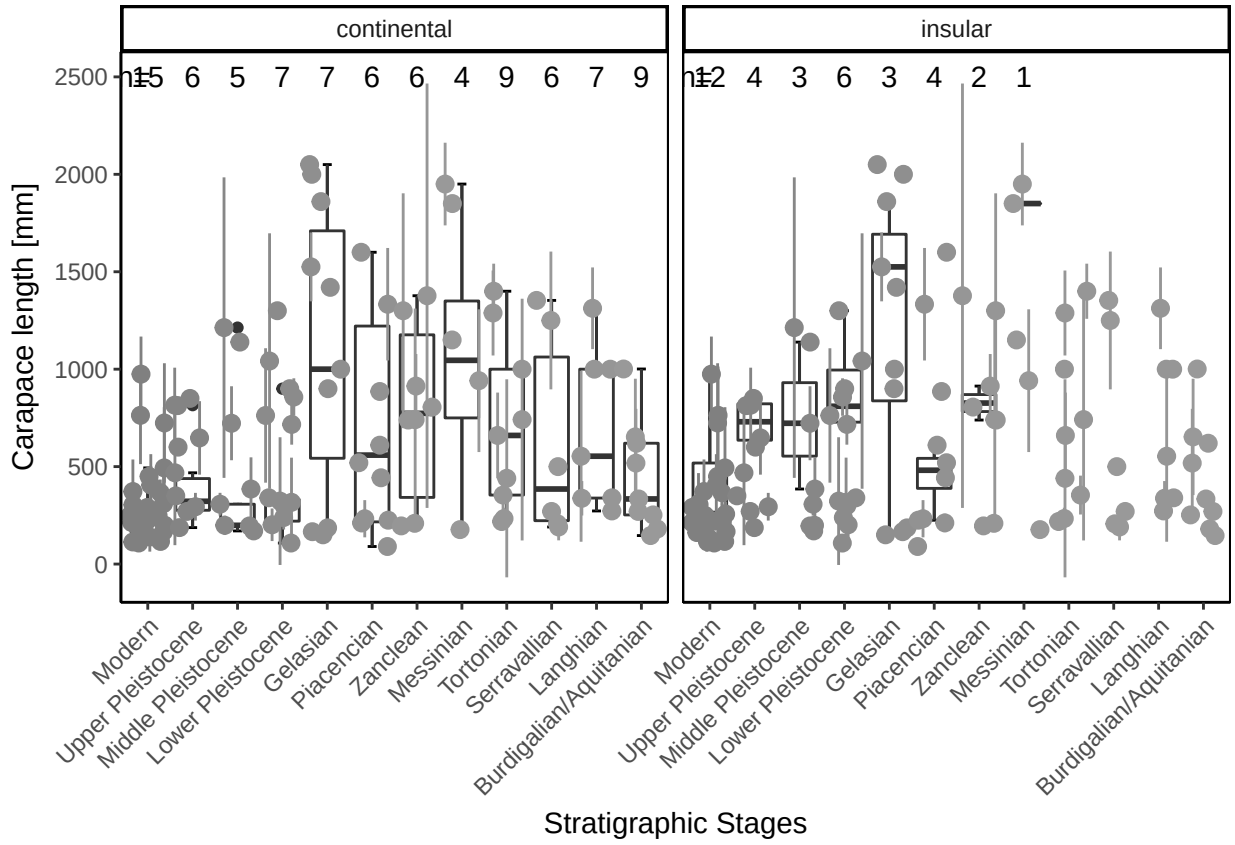


Figure 18: Boxplots of each genus per time bin, continental vs. insular species.

fossil vs. modern

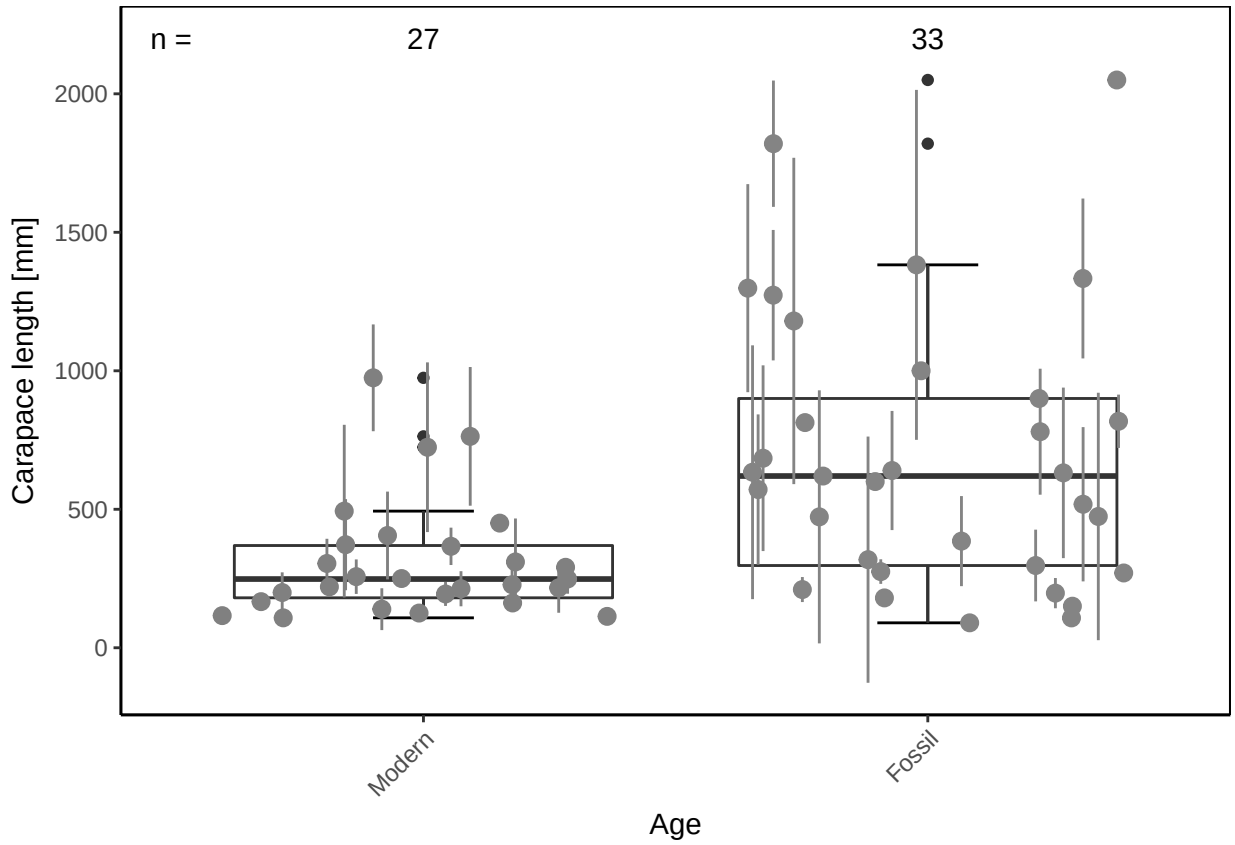
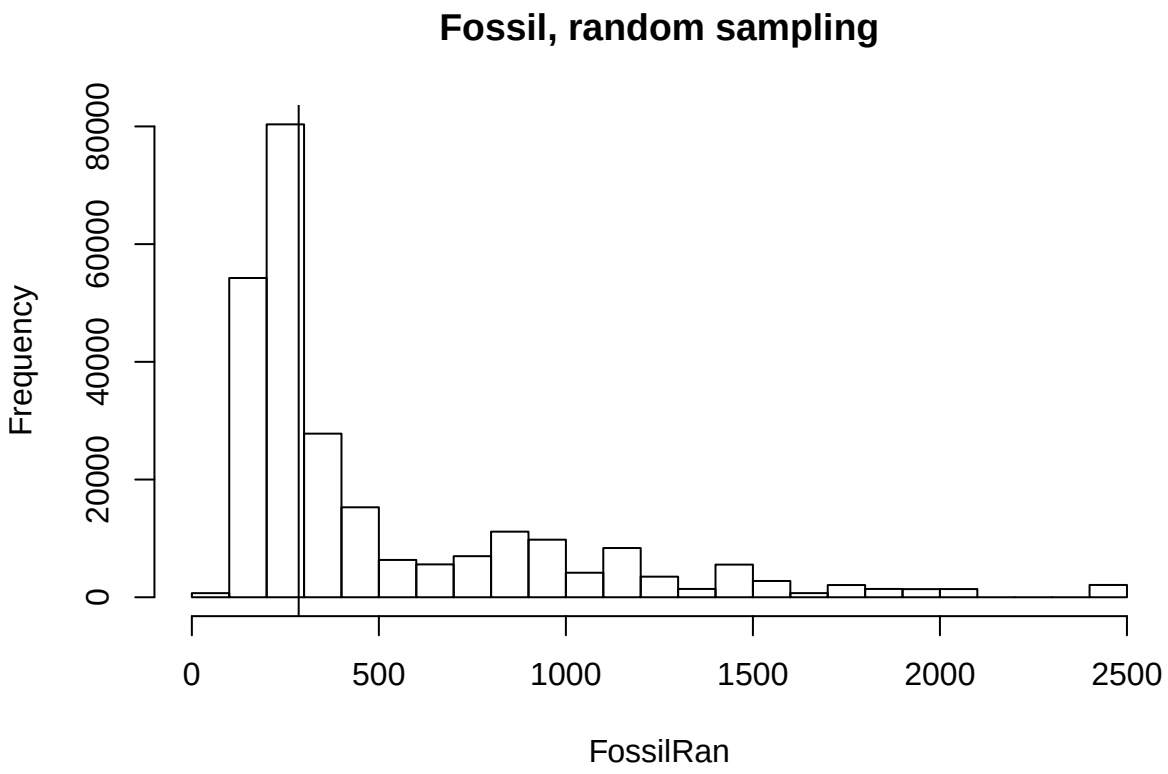


Figure 19: Boxplots fossil vs. modern.




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

```
## [1] 513.3366
```

```
##
```

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

```
##
```

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

```
## W = 22890, p-value = 2.967e-08
```

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

Wilcoxon Rank Sum Test (unpaired data):

modern $<$ fossil ($\mathrm{P} = 2.9668912 \times 10^{-8}$)

fossil vs. modern, continental vs. insular

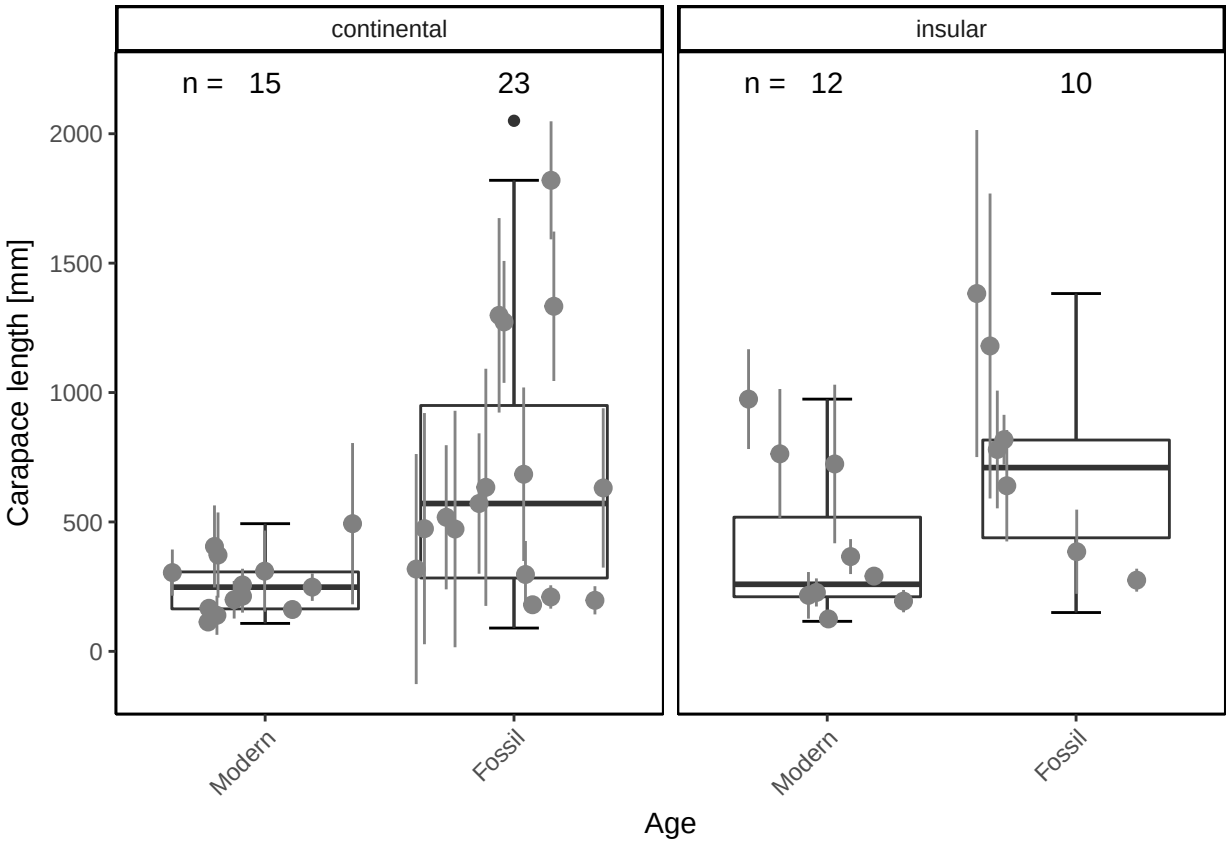
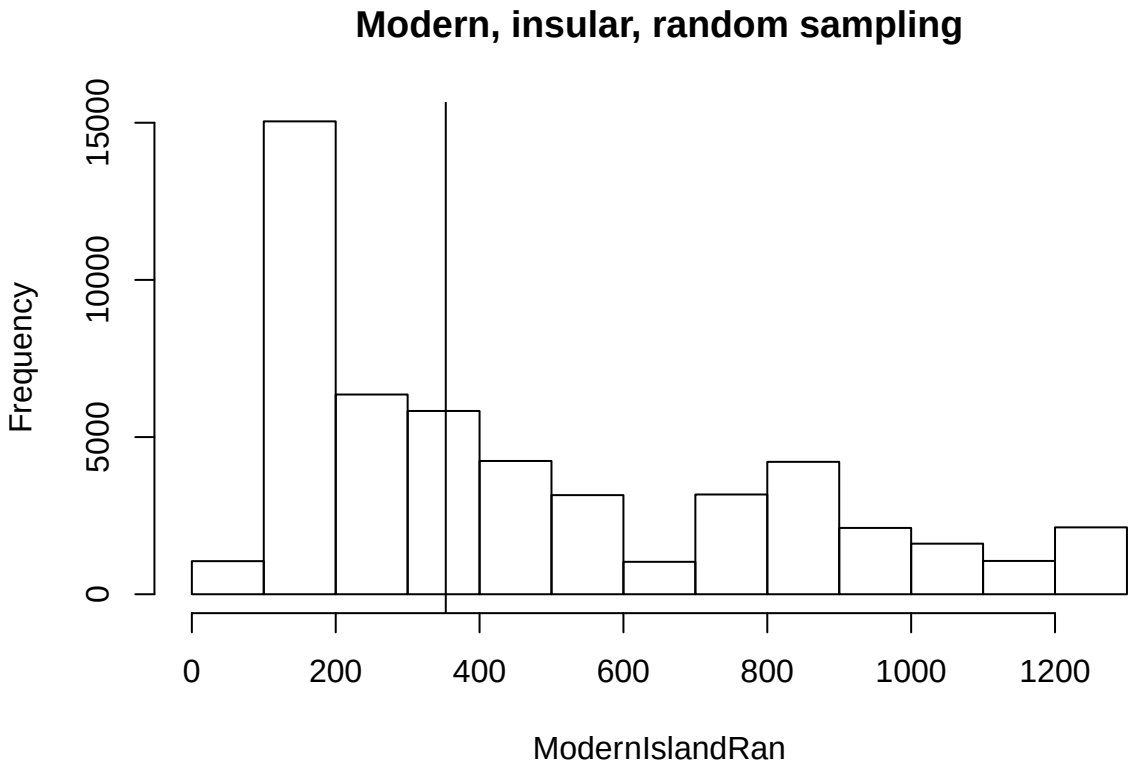


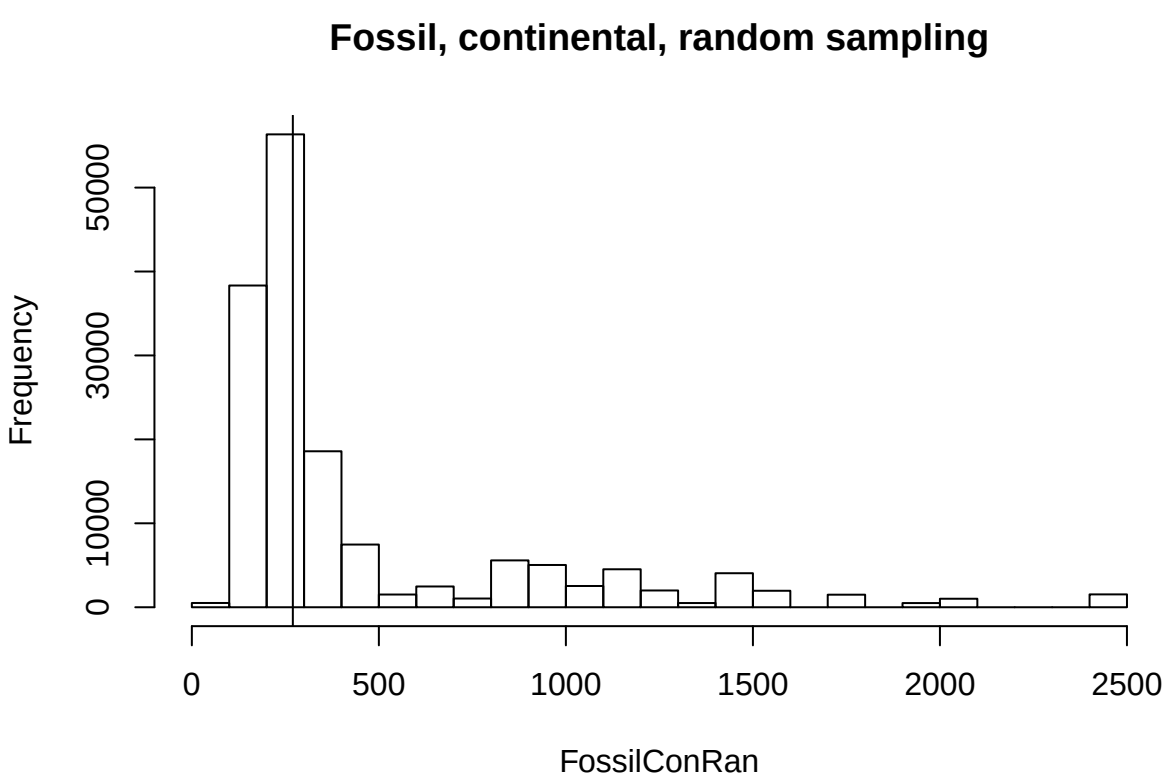
Figure 20: Boxplots fossil vs. modern, continental vs. insular species.

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

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




```
##
##  Wilcoxon rank sum test with continuity correction
##
## data:  ModernIsland and FossilIsland
## W = 715, p-value = 4.508e-05
## 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 = 7785.5, p-value = 8.387e-09
## alternative hypothesis: true location shift is less than 0
```

Wilcoxon Rank Sum Test (unpaired data):

modern continental < fossil continental ($P = 8.3872029 \times 10^{-9}$)

modern insular < fossil insular ($P = 4.5079643 \times 10^{-5}$)

continental vs. insular

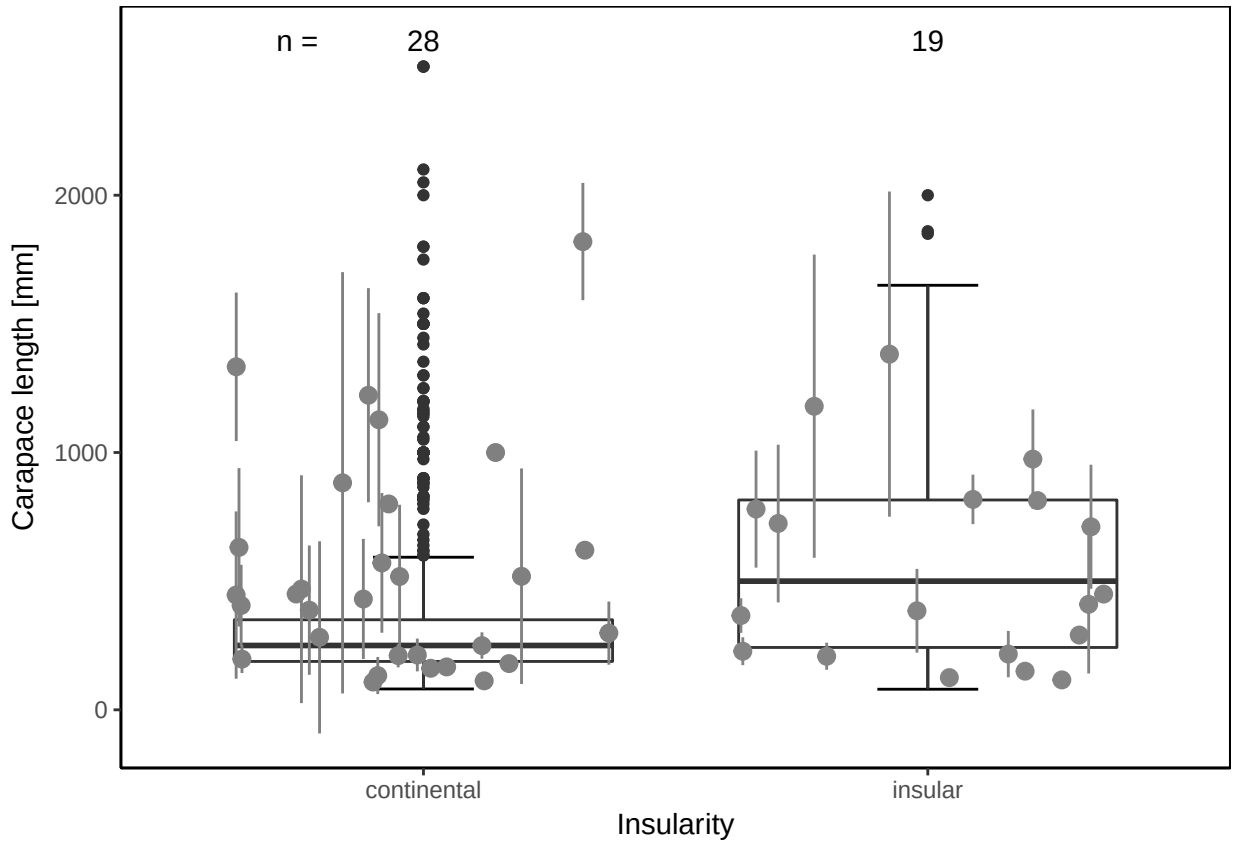
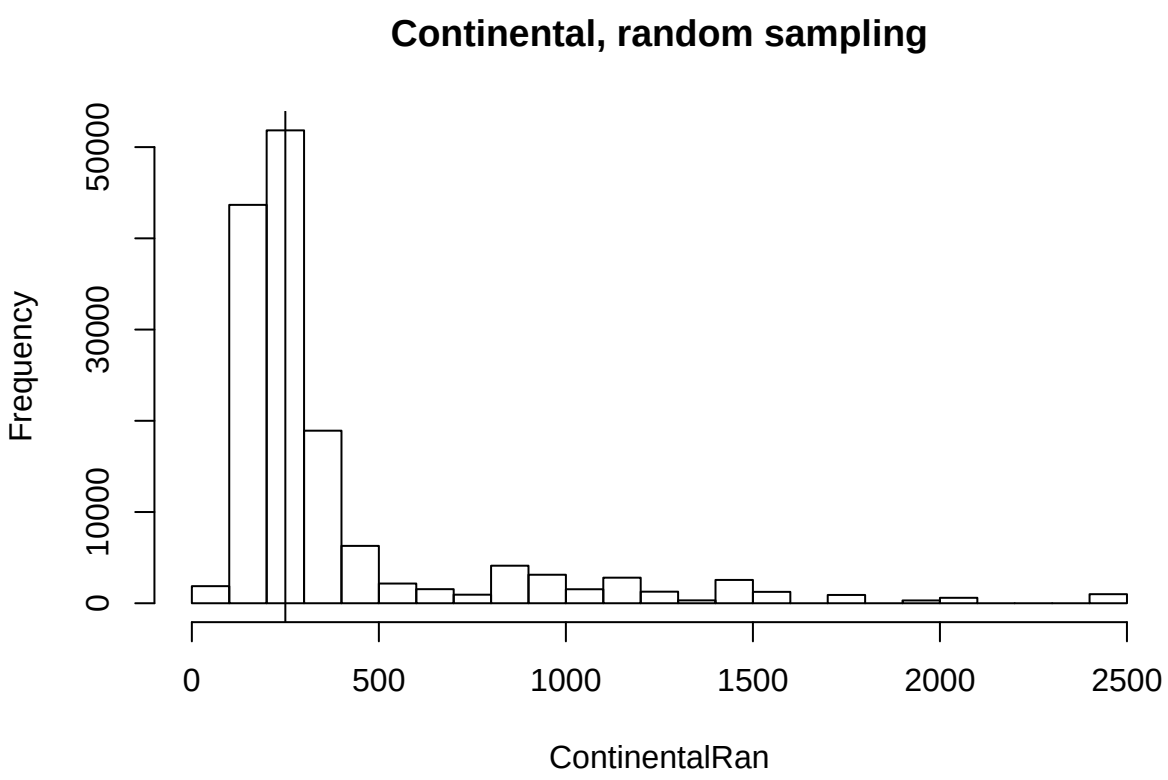


Figure 21: Boxplot continental vs. insular, genera summarised

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

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




```
##
##  Wilcoxon rank sum test with continuity correction
##
## data:  Insular and Continental
## W = 14206, p-value = 1.528e-06
## alternative hypothesis: true location shift is greater than 0
```

Wilcoxon Rank Sum Test (unpaired data):

continental $<$ insular ($\mathrm{P} = 1.5278944 \times 10^{-6}$)

continental vs. insular per time bin

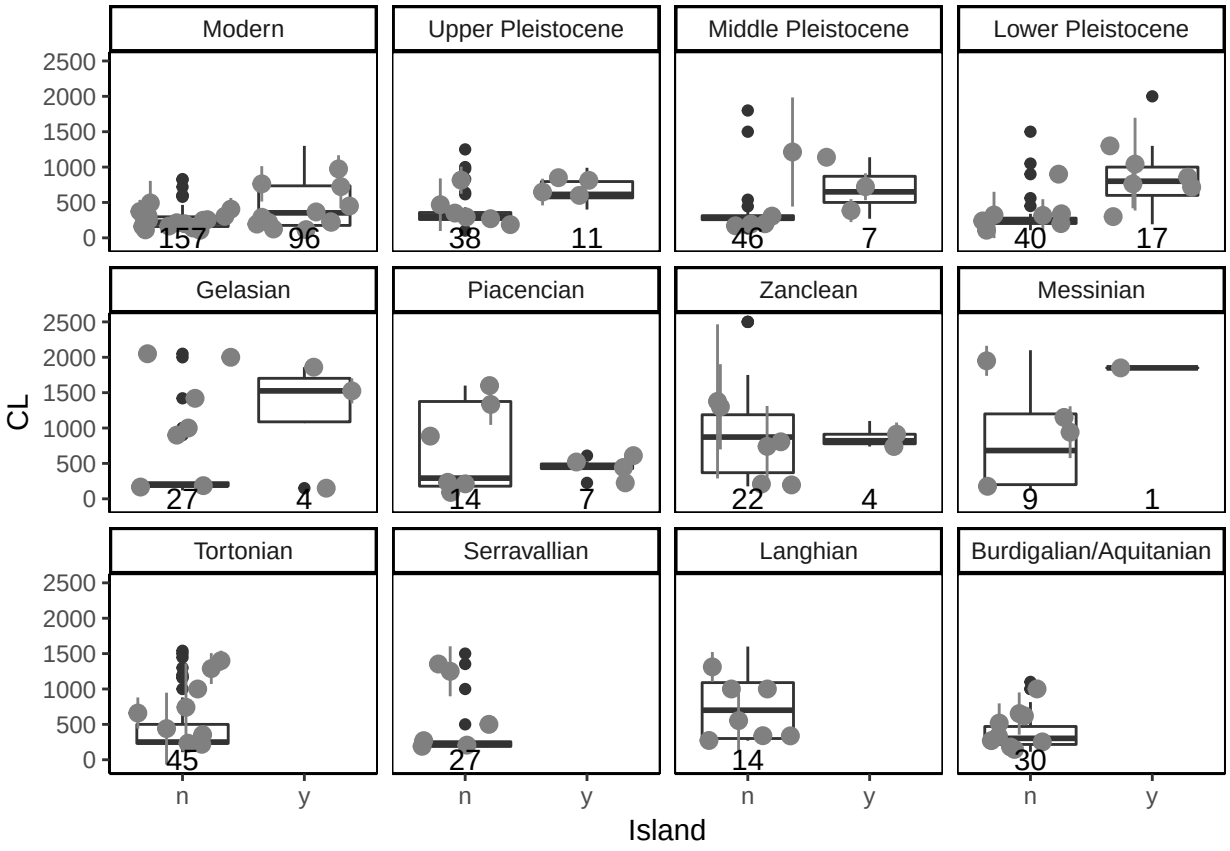


Figure 22: Boxplot continental vs. insular, genera summarised

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

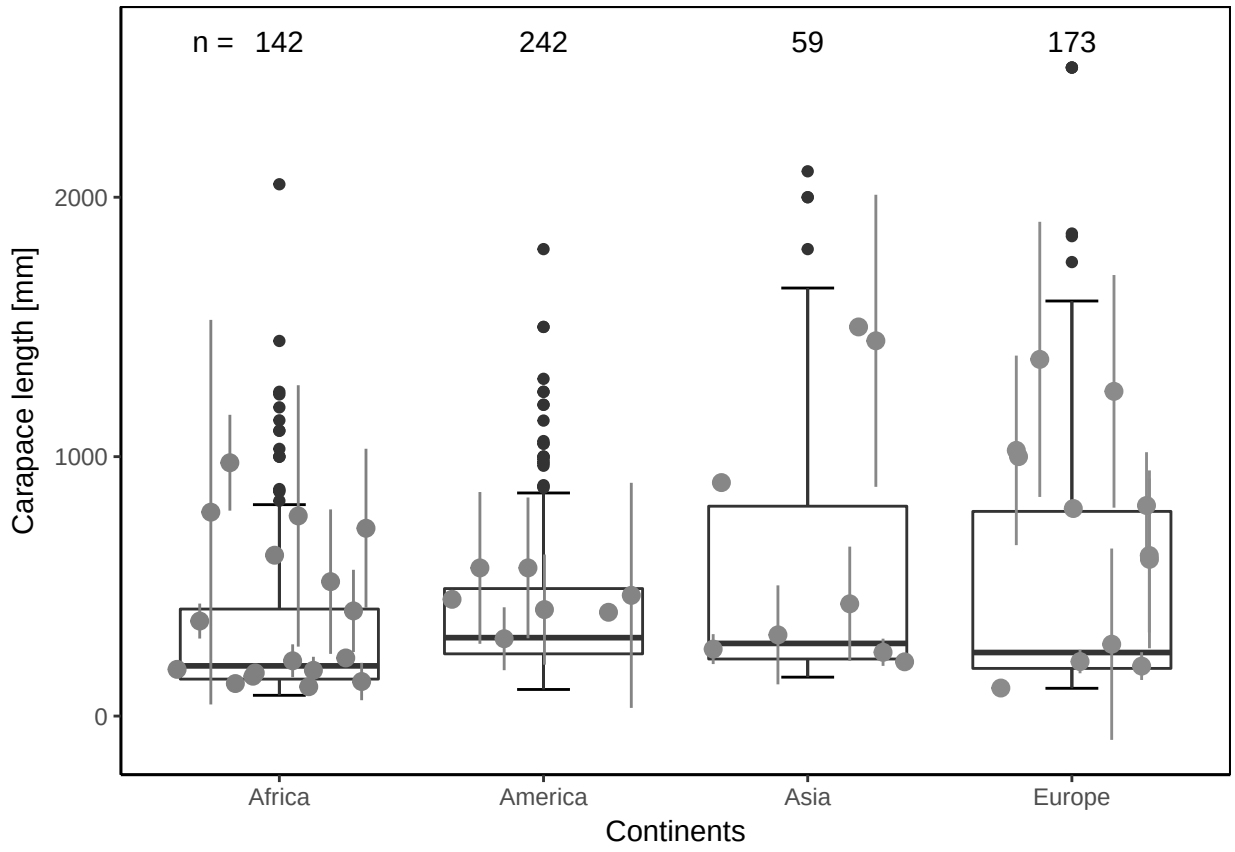


Figure 23: Boxplot: body size on different continents, genera summarised

```
##  [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
```

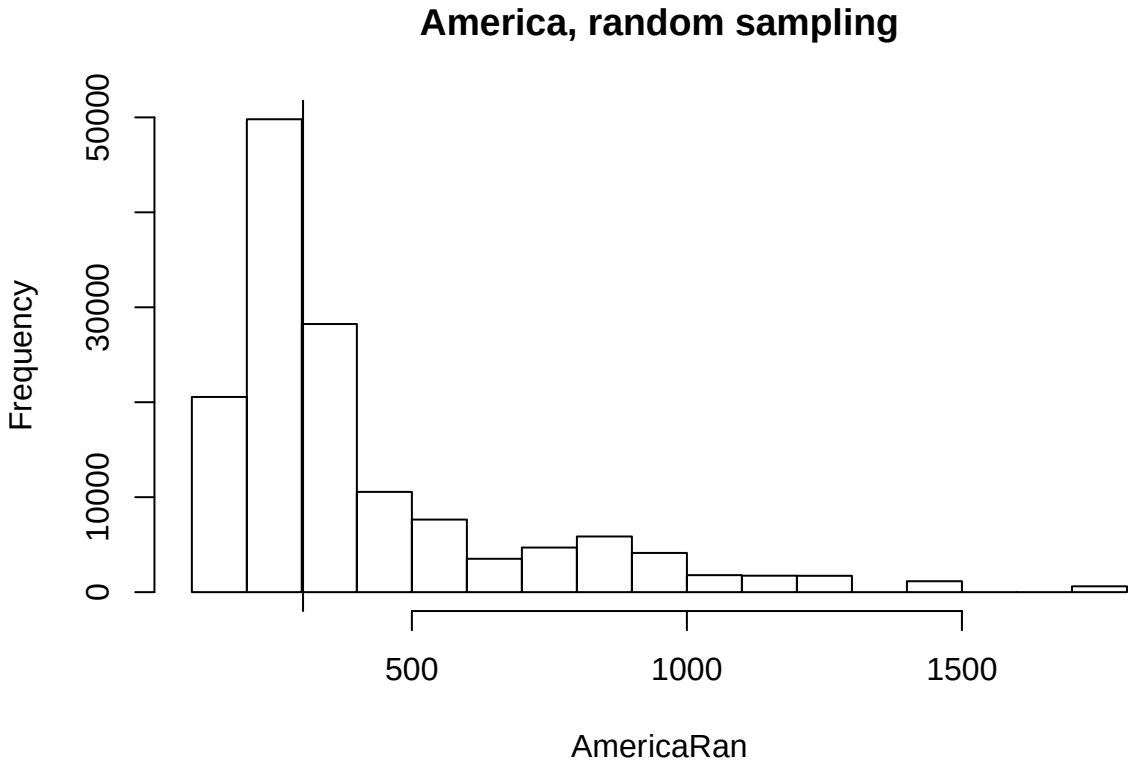
```
## [1] 434.2894
```

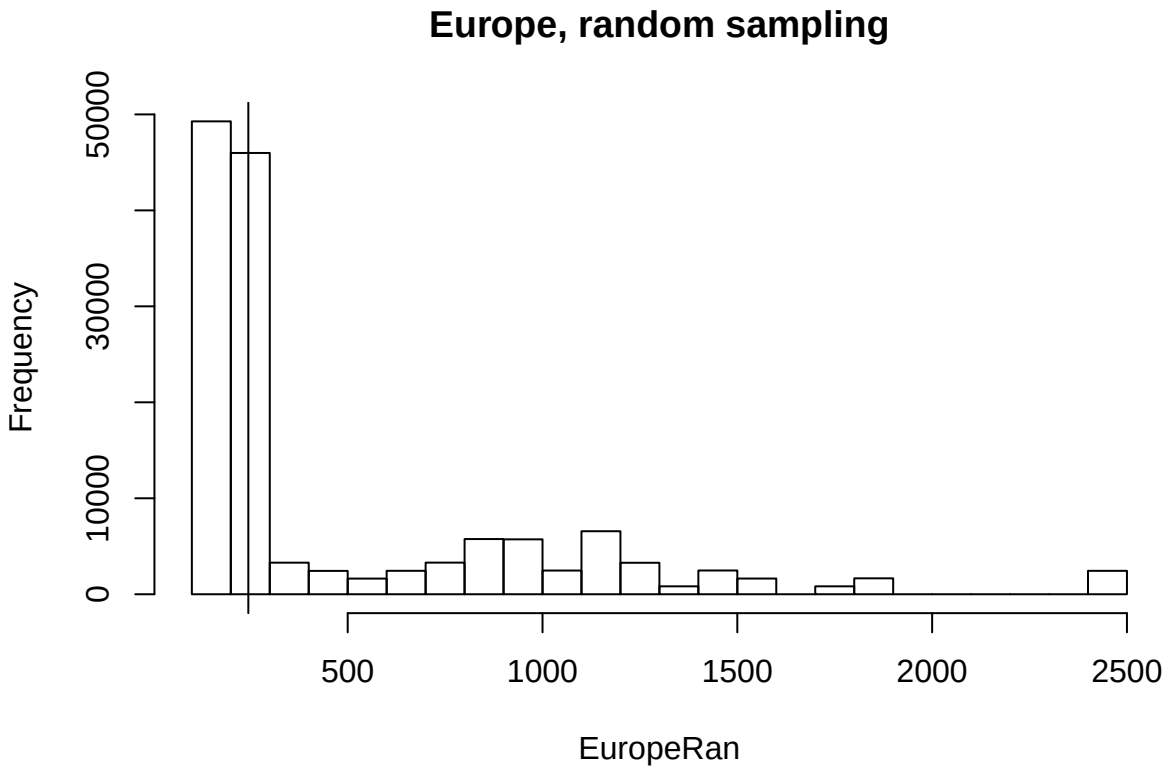
```
## [1] 59
```

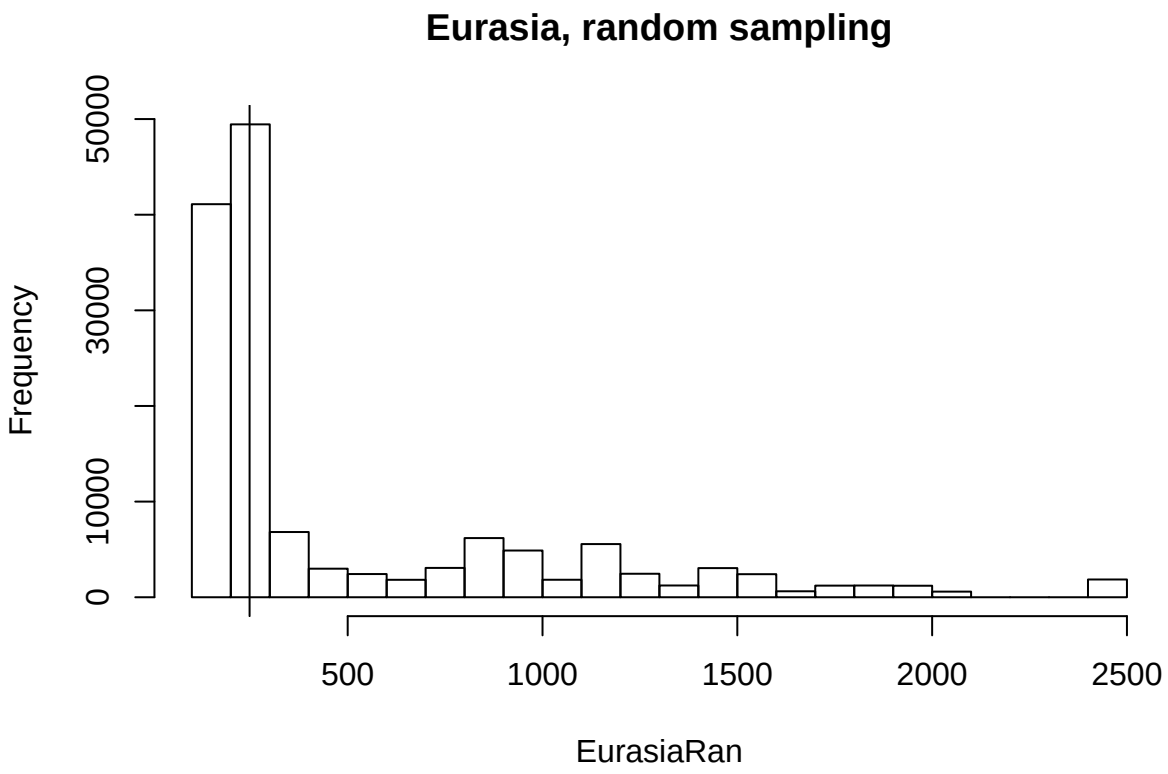
```
## [1] 173
```

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

```
## [1] 505.2204
```




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 = 31.544, df = 3, p-value = 6.53e-07
```

Kruskal-Wallis-Test:

Continent means differ ($P = 6.5297907 \times 10^{-7}$) (still have to look into the details...)

continents, continental vs. insular

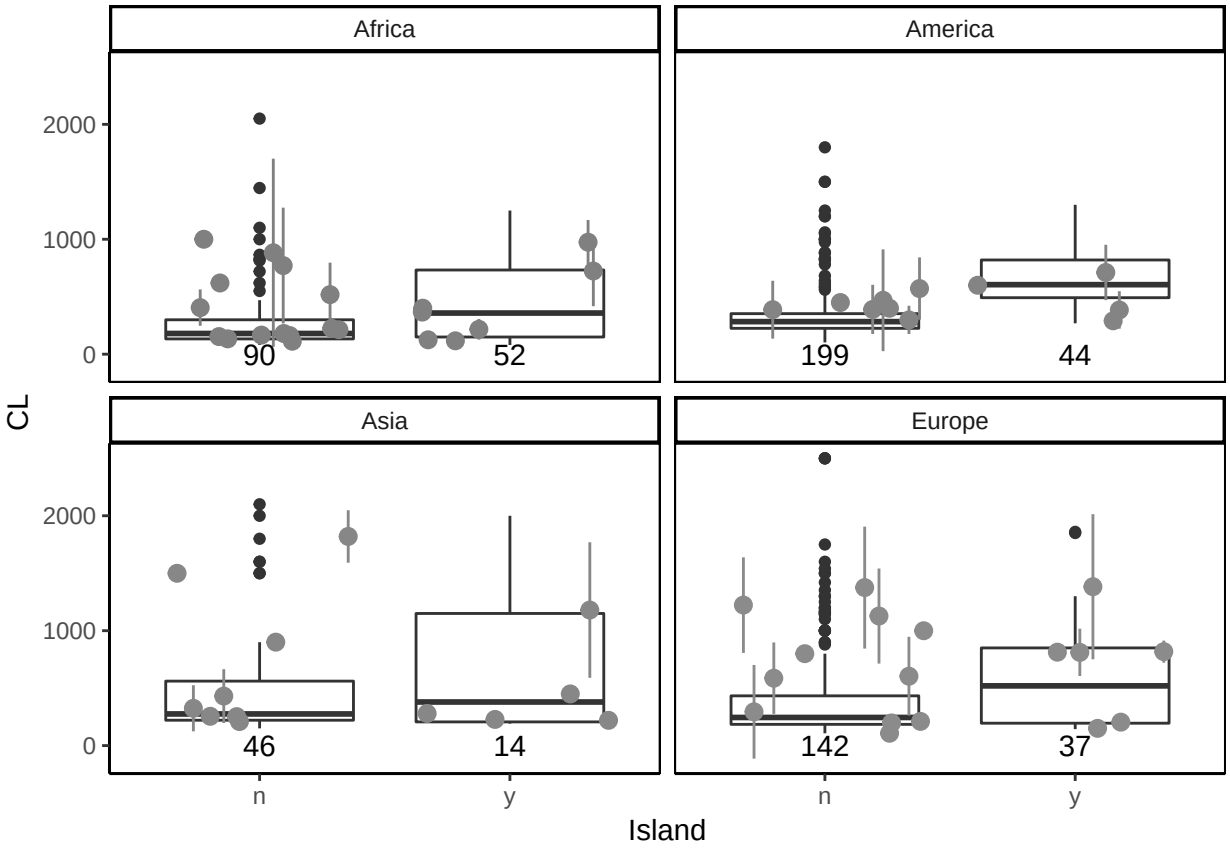


Figure 24: Boxplot: body size on different continents, genera summarised

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

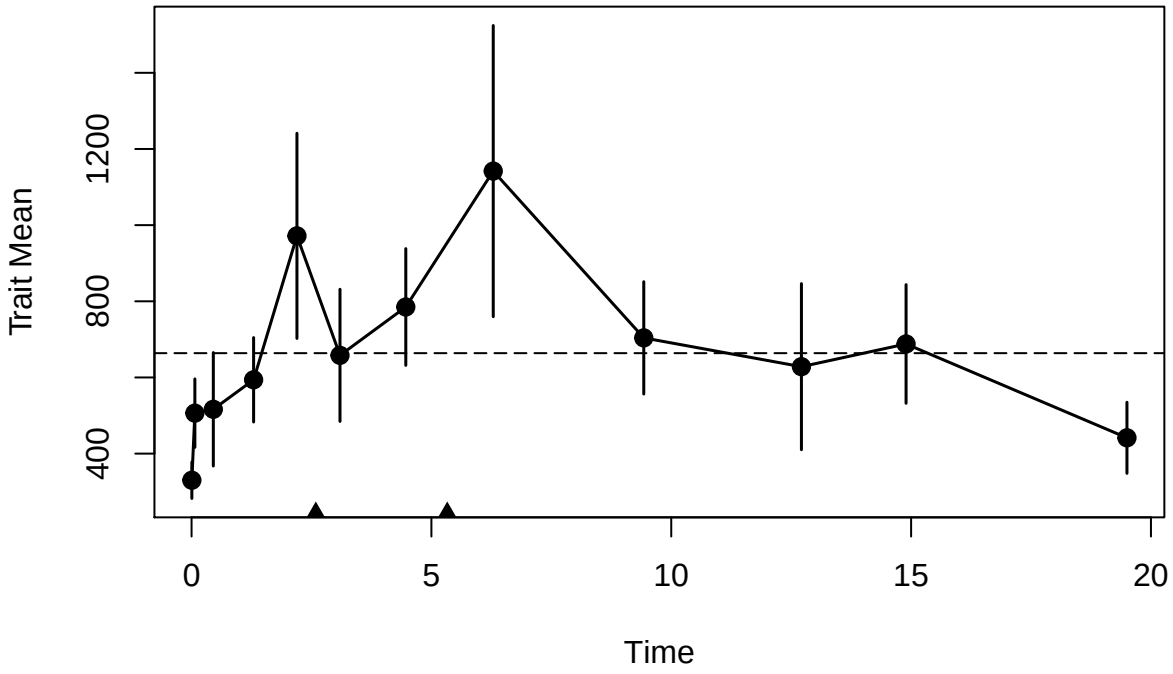


Figure 25: paleoTS plot with genus mean, all

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

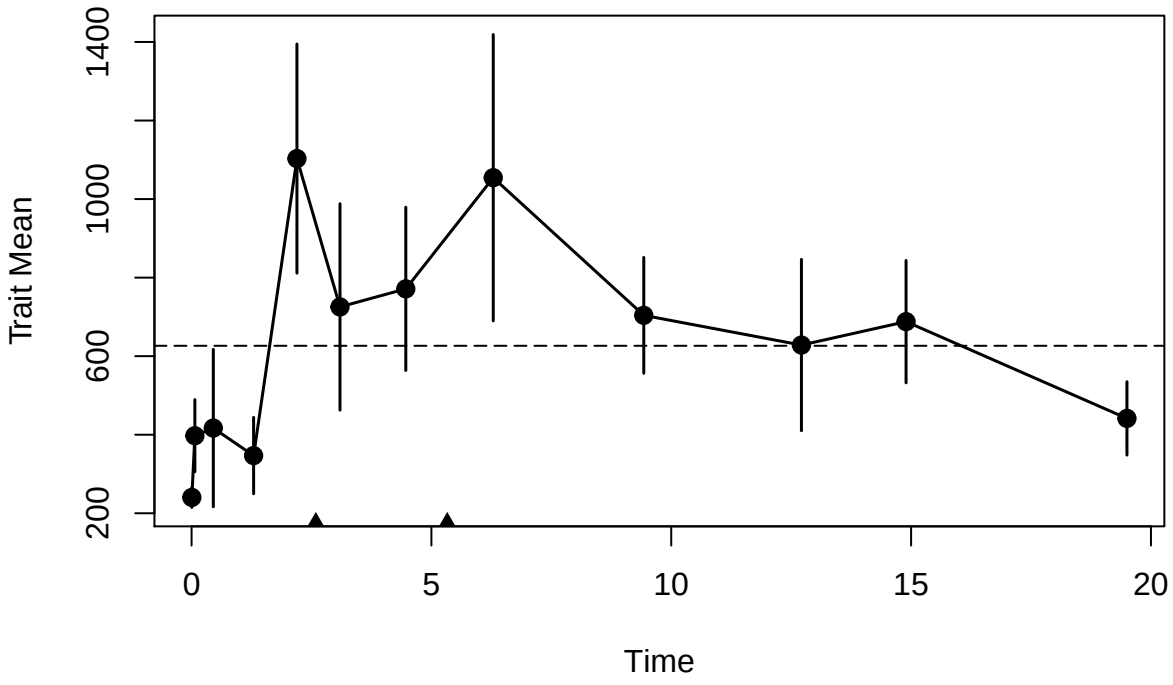


Figure 26: paleoTS plot with genus mean, continental

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

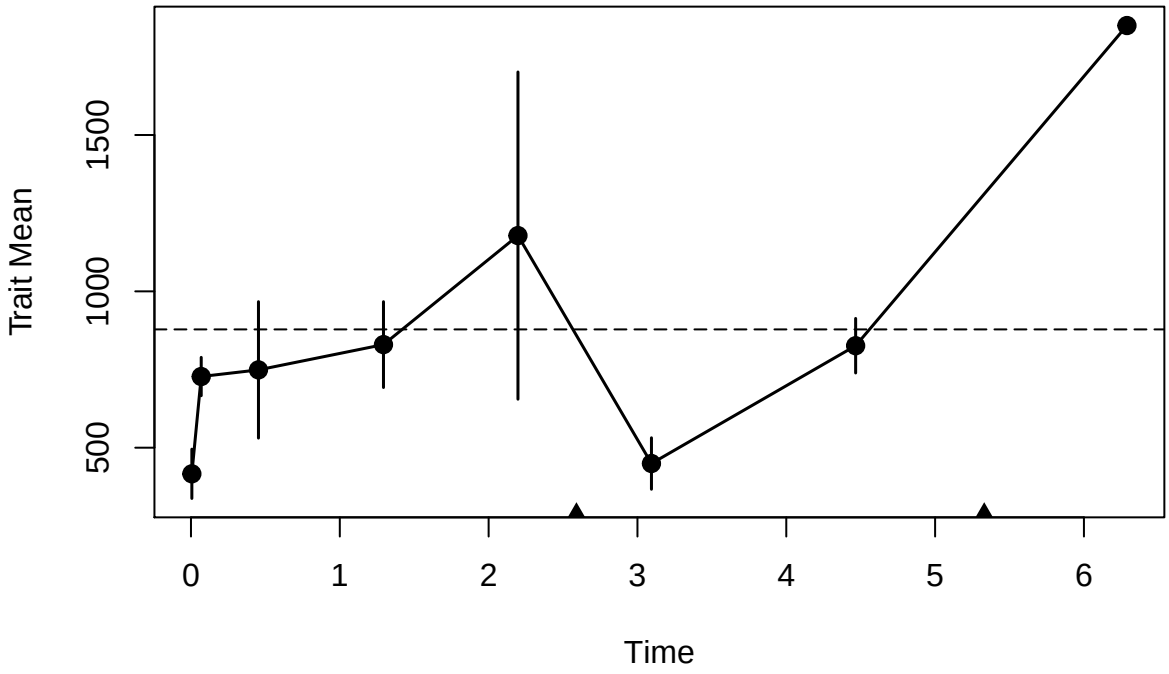


Figure 27: paleoTS plot with genus mean, insular

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

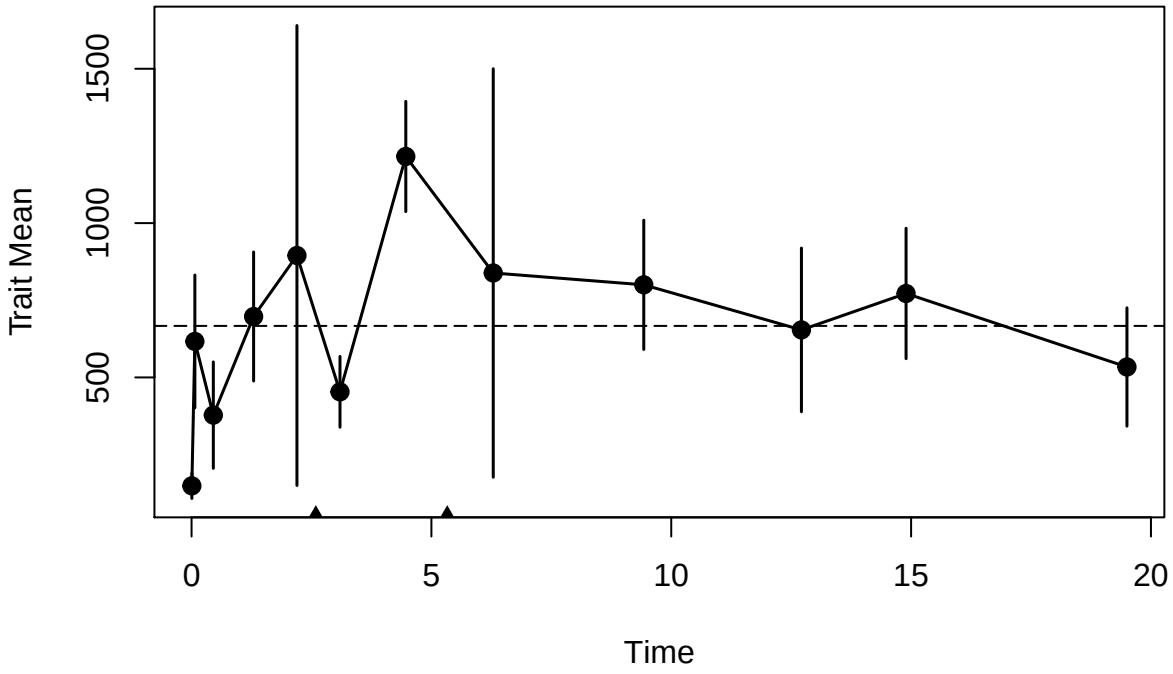


Figure 28: Genera, Europe

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

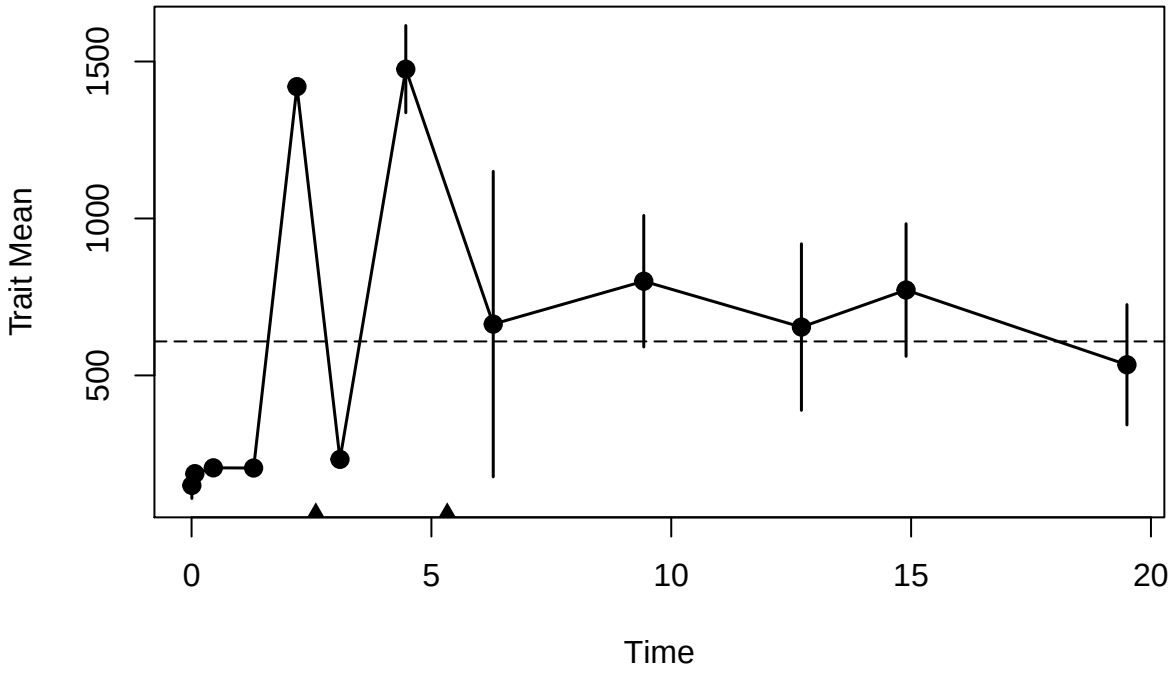


Figure 29: paleoTS, genera, Europe, continental

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

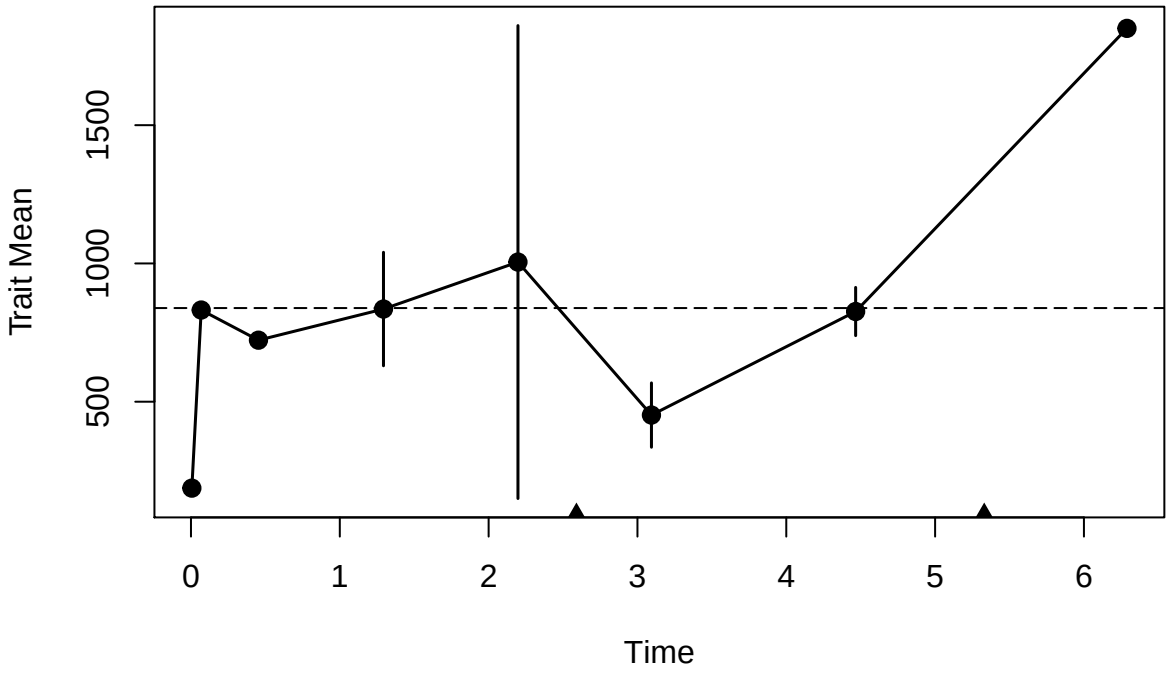


Figure 30: paleoTS, genera, Europe, insular

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, Eurasia

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

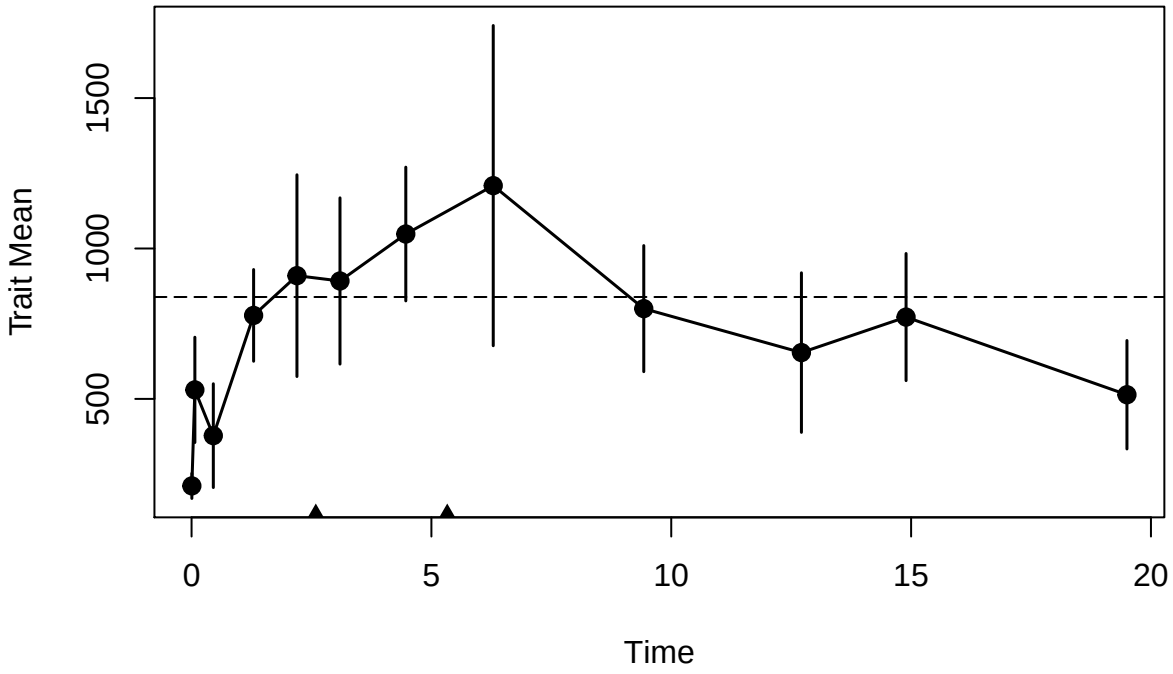


Figure 31: paleoTS, genera, Eurasia

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

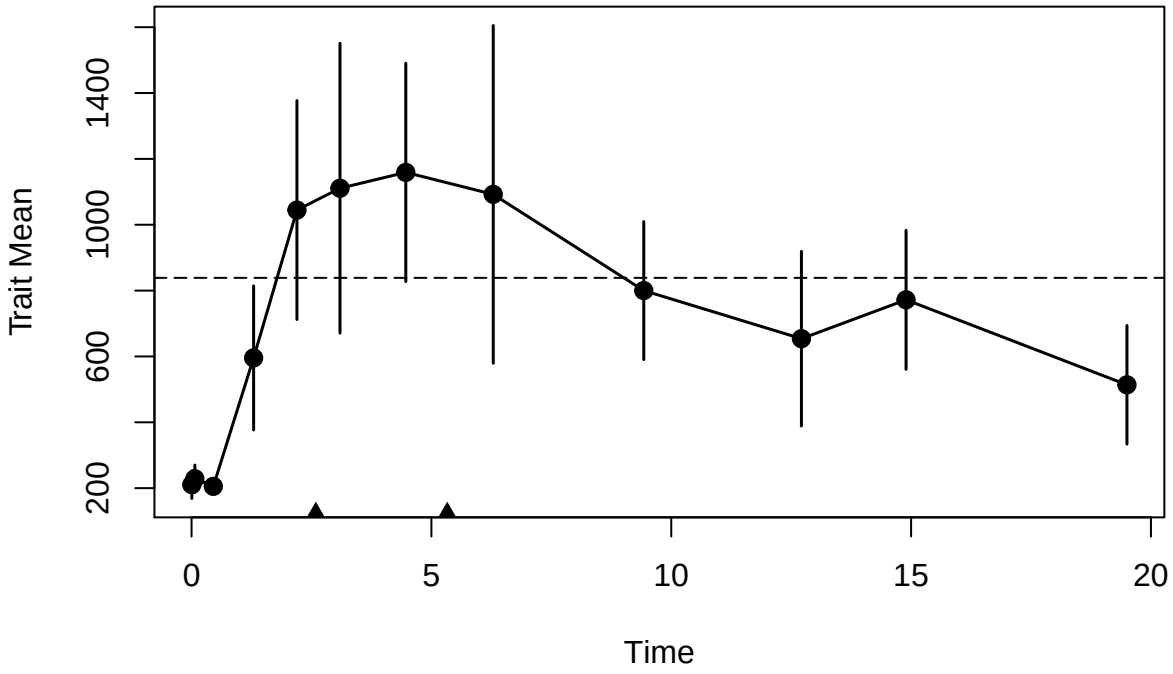


Figure 32: paleoTS, genera, Eurasia, continental

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

Table 25: paleoTS object, all data

tt	nn	mm	vv
0.00585	4	272.9348	14139.94
0.06885	2	831.5000	684.50
0.45350	1	722.5000	0.00
1.29350	5	876.4427	134870.49
2.19700	3	1178.3333	821158.33
3.09400	3	451.6667	40558.33
4.46600	2	826.1667	15196.06
6.28900	1	1850.0000	0.00

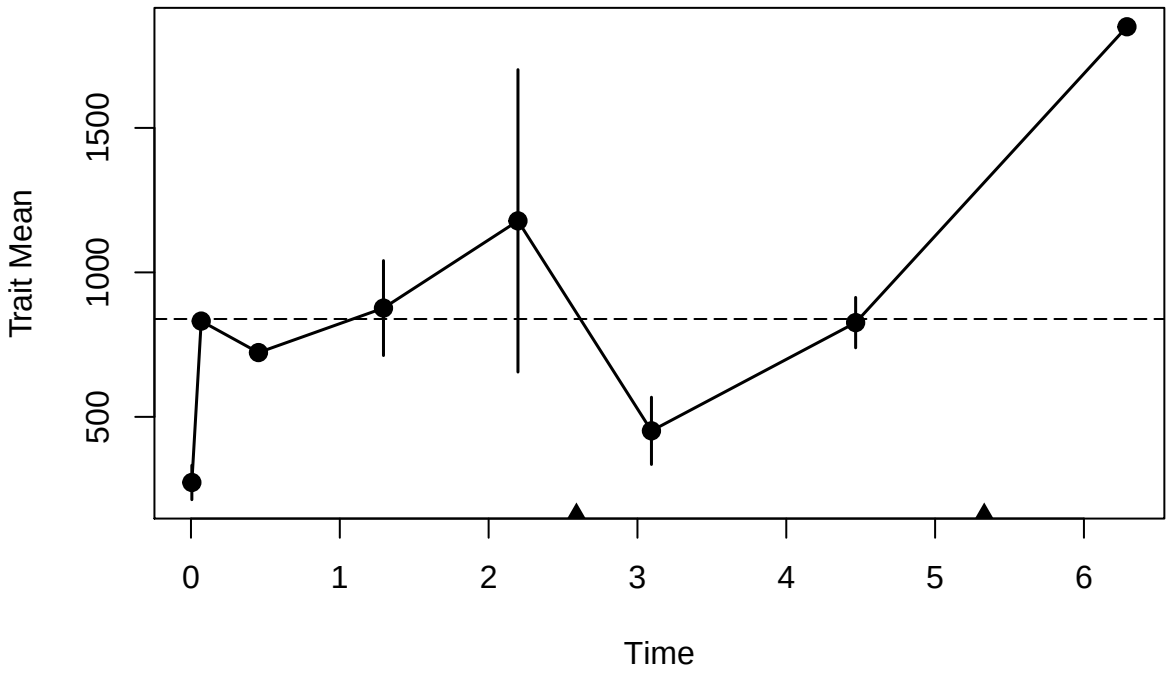


Figure 33: paleoTS, genera, Eurasia, insular

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

	logL	K	AICc	Akaike.wt
GRW	-56.16352	2	119.3270	0.027
URW	-63.16971	1	129.1394	0.000
Stasis	-52.56060	2	112.1212	0.973

	Locality	Latitude	Long
1	Municipio de Villagrán, Tamaulipas	24.469253	-99.18
2	Indian Cave, Middle Caicos	21.831000	-71.80
3	Indian Cave, Middle Caicos	21.831000	-71.80
4	Coralie, Grand Turk	21.503500	-71.14
5	Coralie, Grand Turk	21.503500	-71.14
6	Coralie, Grand Turk	21.503500	-71.14
7	Coralie, Grand Turk	21.503500	-71.14
8	Etseré	-22.661500	43.73
9	Etseré	-22.661500	43.73
10	Ambositra	-20.539400	47.24
11	Devil's Den Sinkhole, Levy County, Florida	29.407066	-82.47
12	Pomongwe Cave, Matobo National Park, southwest Zimbabwe	-20.547412	28.51
13	Yonaguni-shima, Ryuku Islands	24.458892	122.99
14	Little Salt Spring, Florida	27.075315	-82.23
15	Little Salt Spring, Florida	27.075315	-82.23
16	Little Salt Spring, Florida	27.075315	-82.23
17	Little Salt Spring, Florida	27.075315	-82.23
18	Zubbio di Cozzo San Pietro	38.102577	13.50
19	Banana Hole, New Providence Island	25.014961	-77.52
20	Friesenhahn Cave, Bexar County, Texas	29.000000	-98.00
21	Sabertooth Camel Maze, Dry Cave (UTEP 5), Eddy County, New Mexico	32.000000	-104.00

	Locality	Latitude	Long
22	Lang Rongrien Rockshelter, Krabi, Thailand	8.179722	98.8
23	Arroyo Toropí, Corrientes	-29.917100	-59.4
24	Ingleside Local Fauna, San Patricio County, Texas	27.000000	-96.0
25	Ingleside Local Fauna, San Patricio County, Texas	27.000000	-96.0
26	Mona Island	18.087000	-67.8
27	Zebbug and Gahr Dalam Cave deposits	35.890000	14.4
28	Arredondo IIA, Alachua County, Florida	29.600000	-82.4
29	Bayaguana, Los Haitises, San Cristobal	18.744900	-69.6
30	Sombrero Island	18.588901	-63.4
31	Navassa Island	18.408300	-75.0
32	Cueva del Papayo, Pedernales	17.854400	71.4
33	Cueva del Papayo, Pedernales	17.854400	71.4
34	Cueva del Papayo, Pedernales	17.854400	71.4
35	Cueva del Papayo, Pedernales	17.854400	71.4
36	Reddick IA+B, Marion County, Florida	29.100000	-82.3
37	Reddick IA+B, Marion County, Florida	29.100000	-82.3
38	Reddick IA+B, Marion County, Florida	29.100000	-82.3
39	Quebrada de Ñuapua, Chuquisaca department	-20.530741	-62.9
40	Melbourne, Brevard County, Florida	28.100000	-80.6
41	Reddick IA+B, Marion County, Florida	29.100000	-82.3
42	Reddick IA+B, Marion County, Florida	29.100000	-82.3
43	Reddick IA+B, Marion County, Florida	29.100000	-82.3
44	Surprise Cave, Alachua, Florida	29.803141	-82.5
45	Surprise Cave, Alachua, Florida	29.803141	-82.5
46	Surprise Cave, Alachua, Florida	29.803141	-82.5
47	Surprise Cave, Alachua, Florida	29.803141	-82.5
48	Surprise Cave, Alachua, Florida	29.803141	-82.5
49	Surprise Cave, Alachua, Florida	29.803141	-82.5
50	Surprise Cave, Alachua, Florida	29.803141	-82.5
51	Surprise Cave, Alachua, Florida	29.803141	-82.5
52	Surprise Cave, Alachua, Florida	29.803141	-82.5

	Locality	Latitude	Long
53	Surprise Cave, Alachua, Florida	29.803141	-82.5
54	Surprise Cave, Alachua, Florida	29.803141	-82.5
55	Surprise Cave, Alachua, Florida	29.803141	-82.5
56	Surprise Cave, Alachua, Florida	29.803141	-82.5
57	Surprise Cave, Alachua, Florida	29.803141	-82.5
58	Surprise Cave, Alachua, Florida	29.803141	-82.5
59	Surprise Cave, Alachua, Florida	29.803141	-82.5
60	Orange Lake 2 miles south, Marion County, Florida	29.400000	-82.2
61	Cova del Rinoceront, eastern Garraf Massif, Can´Aymerich quarry, Castelldelfs	41.273600	1.9
62	Libertador San Martín north bank Ensenada stream, 15 km E Diamante, Entre Rios Province	-32.087600	-60.4
63	Pecos River near Melena and Acme, 10-15 km NE Roswell, Chaves County, New Mexico	33.470000	-104.5
64	Haile, Alachua County, Florida	29.800000	-82.1
65	Haile, Alachua County, Florida	29.800000	-82.1
66	Haile, Alachua County, Florida	29.800000	-82.1
67	Haile, Alachua County, Florida	29.800000	-82.1
68	Haile, Alachua County, Florida	29.800000	-82.1
69	Haile, Alachua County, Florida	29.800000	-82.1
70	Haile, Alachua County, Florida	29.800000	-82.1
71	Haile, Alachua County, Florida	29.800000	-82.1
72	Haile, Alachua County, Florida	29.800000	-82.1
73	Haile, Alachua County, Florida	29.800000	-82.1
74	Haile, Alachua County, Florida	29.800000	-82.1
75	Haile, Alachua County, Florida	29.800000	-82.1
76	Haile, Alachua County, Florida	29.800000	-82.1
77	Haile, Alachua County, Florida	29.800000	-82.1
78	Haile, Alachua County, Florida	29.800000	-82.1
79	Haile, Alachua County, Florida	29.800000	-82.1
80	Haile, Alachua County, Florida	29.800000	-82.1
81	Haile, Alachua County, Florida	29.800000	-82.1
82	Cragin Quarry Local Fauna, Meade County, Kansas	37.224200	-100.4
83	Smith's Parrish, No. 3Verdmont Valley Close	32.312800	-64.7

	Locality	Latitude	Long
84	Smith's Parrish, No. 3Verdmont Valley Close	32.312800	-64.7
85	Santa Clara	22.460300	-79.9
86	Texas	33.286000	-101.1
87	Coleman 2A	28.801494	-82.0
88	Coleman 2A	28.801494	-82.0
89	Coleman 2A	28.801494	-82.0
90	Coleman 2A	28.801494	-82.0
91	Coleman 2A	28.801494	-82.0
92	Coleman 2A	28.801494	-82.0
93	Coleman 2A	28.801494	-82.0
94	Coleman 2A	28.801494	-82.0
95	Coleman 2A	28.801494	-82.0
96	Coleman 2A	28.801494	-82.0
97	Coleman 2A	28.801494	-82.0
98	Coleman 2A	28.801494	-82.0
99	Adeje, Tenerife	28.119300	-16.7
100	Adeje, Tenerife	28.119300	-16.7
101	Callao de Fañabé, Tenerife	28.109815	-16.7
102	Callao de Fañabé, Tenerife	28.109815	-16.7
103	Caverna de Gràcia, Güell park, Barcelona	41.400000	2.1
104	Caverna de Gràcia, Güell park, Barcelona	41.400000	2.1
105	Cova de Gràcia, Park Güell, Barcelona	41.413600	2.1
106	Cova de Gràcia, Park Güell, Barcelona	41.413600	2.1
107	Kénitra, Guilloux quarry, near Rabat	34.300000	-6.6
108	Saint-Estève-Janson, l'Escale Cave (Bouches du Rhône)	43.683300	5.3
109	Saint-Estève-Janson, l'Escale Cave (Bouches du Rhône)	43.683300	5.3
110	Gilliland local fauna, Burnett Ranch, 7 miles W of Vera, Knox County, Texas	33.800000	-99.5
111	Gilliland local fauna, Burnett Ranch, 7 miles W of Vera, Knox County, Texas	33.800000	-99.5
112	Gilliland local fauna, Burnett Ranch, 7 miles W of Vera, Knox County, Texas	33.800000	-99.5
113	Gilliland local fauna, Burnett Ranch, 7 miles W of Vera, Knox County, Texas	33.800000	-99.5
114	Soave, Zoppega 2 cave, Verona	45.420000	11.2

	Locality	Latitude	Long
115	Soave, Zoppega 2 cave, Verona	45.420000	11.2
116	Flores	-8.683452	121.0
117	Rock-Cavities, Gibraltar Peninsula	36.120300	-5.3
118	Río Tomayate, Apopa Municipality	13.783333	89.1
119	Cedazo local fauna, Aguascalientes, Mexico	21.824007	-102.3
120	Cedazo local fauna, Aguascalientes, Mexico	21.824007	-102.3
121	Cedazo local fauna, Aguascalientes, Mexico	21.824007	-102.3
122	Cedazo local fauna, Aguascalientes, Mexico	21.824007	-102.3
123	Cueva de la Victoria-1 (CV-1), Carthagène, Murcia	37.616700	-0.8
124	Leisey Shell Pit 1A, Hillsborough County, Florida	27.700000	-82.5
125	Leisey Shell Pit 1A, Hillsborough County, Florida	27.700000	-82.5
126	Leisey Shell Pit 1A, Hillsborough County, Florida	27.700000	-82.5
127	Sima del Elefante TE14, Sierra de Atapuerca, Burgos	42.330000	-3.5
128	Leisey Shell Pit 1A, Hillsborough County, Florida	27.700000	-82.5
129	Leisey Shell Pit 1A, Hillsborough County, Florida	27.700000	-82.5
130	Leisey Shell Pit 2, Hillsborough County, Florida	27.700000	-82.5
131	Haile, Alachua County, Florida	29.800000	-82.1
132	Haile, Alachua County, Florida	29.800000	-82.1
133	Haile, Alachua County, Florida	29.800000	-82.1
134	Haile, Alachua County, Florida	29.800000	-82.1
135	Haile, Alachua County, Florida	29.800000	-82.1
136	Haile, Alachua County, Florida	29.800000	-82.1
137	Haile, Alachua County, Florida	29.800000	-82.1
138	Haile, Alachua County, Florida	29.800000	-82.1
139	Haile, Alachua County, Florida	29.800000	-82.1
140	Haile, Alachua County, Florida	29.800000	-82.1
141	Haile, Alachua County, Florida	29.800000	-82.1
142	Cala Es Pous near Ciutadella, Minorca	40.028500	3.8
143	Gerani-Höhle an der Nordküste Kretamin der Nähe von Rethymnon	35.300000	24.5
144	Zourida-Höhle	35.300000	24.5
145	Ghar Dalam	35.836423	14.5

	Locality	Latitude	Long
146	Ghar Dalam	35.836423	14.5
147	Ghar Dalam	35.836423	14.5
148	Obermaintor, Ebensfeld (Lichtenfels), Franken	50.068844	10.9
149	Sal Island	16.731953	-22.9
150	Tres Hermanas, Manila, Luzon	14.589800	121.1
151	Tres Hermanas, Manila, Luzon	14.589800	121.1
152	Sierra de Quibas, Abanilla, Murcia	38.300000	-1.0
153	San Pedro, Curaçao	12.383700	-69.1
154	San Pedro, Curaçao	12.383700	-69.1
155	San Pedro, Curaçao	12.383700	-69.1
156	Java Island	-7.288900	109.5
157	Bumiayu, Java Island	-7.288900	109.5
158	Texas	33.286000	-101.1
159	Kansas	39.634780	-100.3
160	Zhejiang	29.141640	119.7
161	Guangxi	23.568900	108.6
162	Lakonia	36.900000	22.6
163	Dmanisi	41.320000	44.3
164	Pujo d'es Fum, Formentera, Balearic Islands	38.800000	1.4
165	Drimolon, Sterkfontein, Krugersdorp District, Gauteng Province	-26.017052	27.7
166	Inglis 1C, Florida	29.011396	-82.6
167	Inglis 1C, Florida	29.011396	-82.6
168	Inglis 1C, Florida	29.011396	-82.6
169	Inglis 1C, Florida	29.011396	-82.6
170	Inglis 1C, Florida	29.011396	-82.6
171	Inglis 1C, Florida	29.011396	-82.6
172	Le Ville, Upper Valdarno	43.483300	12.0
173	Fonelas P-1, Guadix Basin	37.417000	-3.1
174	Inglis 1A, Florida	29.011396	-82.6
175	Inglis 1A, Florida	29.011396	-82.6
176	Inglis 1A, Florida	29.011396	-82.6

	Locality	Latitude	Long
177	Inglis 1A, Florida	29.011396	-82.6
178	Inglis 1A, Florida	29.011396	-82.6
179	Inglis 1A, Florida	29.011396	-82.6
180	Inglis 1A, Florida	29.011396	-82.6
181	Inglis 1A, Florida	29.011396	-82.6
182	Inglis 1A, Florida	29.011396	-82.6
183	Inglis 1A, Florida	29.011396	-82.6
184	Inglis 1A, Florida	29.011396	-82.6
185	Inglis 1A, Florida	29.011396	-82.6
186	Inglis 1A, Florida	29.011396	-82.6
187	Inglis 1A, Florida	29.011396	-82.6
188	Inglis 1A, Florida	29.011396	-82.6
189	Lesbos Island, F-Site	39.500000	26.5
190	Monte Tuttavista VII mustelide, Sardinia	40.383300	9.7
191	Sulawesi (Celebes), Indonesia	-1.847900	120.5
192	Caballo Local Fauna, Palomas Basin, Sierra County, New Mexico	32.970000	-107.3
193	Sulawesi (Celebes), Indonesia	-1.847900	120.5
194	Siwalik	27.695646	82.3
195	Texas	33.286000	-101.1
196	Punjab	31.047000	75.3
197	Gerogia (Caucasus)	41.106300	46.5
198	Khatlon	37.712500	69.0
199	Ahl al Oughlam (near Casablanca)	33.593100	-7.6
200	Ahl al Oughlam (near Casablanca)	33.593100	-7.6
201	Ahl al Oughlam (near Casablanca)	33.593100	-7.6
202	Ahl al Oughlam (near Casablanca)	33.593100	-7.6
203	Ahl al Oughlam (near Casablanca)	33.593100	-7.6
204	Milia, Grevena, W Macedonia	40.179100	21.4
205	Milia, Grevena, W Macedonia	40.179100	21.4
206	Cova de Ca Na Reia, Eivissa, Ibiza	38.909100	1.4
207	North Cita Canyon (Middle Stratum), Randall County, Texas	34.900000	-101.6

	Locality	Latitude	Long
208	Laetoli, Tanzania	-3.233457	35.1
209	Tha Chang area, Chaloem Pra Kiat district, Nakhon Ratchasima Province	14.987000	102.3
210	Tha Chang area, Chaloem Pra Kiat district, Nakhon Ratchasima Province	14.987000	102.3
211	Sawrock Canyon local fauna, Seward County, Kansas	37.000000	-100.0
212	Sawrock Canyon local fauna, Seward County, Kansas	37.000000	-100.0
213	Sand Draw local fauna, Brown County, Nebraska	42.700000	-100.0
214	South Africa	-26.990000	27.4
215	Capo Mannu near San Vero Milis, base of D4 dune, Sardinia	40.040900	8.3
216	Northwest of Naipli	29.190000	76.7
217	Northwest of Naipli	29.190000	76.7
218	Barranco de las Ballenas, Las Palmas, Gran Canaria	28.113388	-15.4
219	Cuchillo Negro Creek Local Fauna, Engle Basin, Sierra County, New Mexico	33.195000	-107.2
220	Sawmill Sink, Abaco	26.283300	-77.2
221	Sawmill Sink, Abaco	26.283300	-77.2
222	Sawmill Sink, Abaco	26.283300	-77.2
223	Sawmill Sink, Abaco	26.283300	-77.2
224	Cita Canyon, UCMP V-3721, Harrell Ranch, Randall County, Texas	34.900000	-101.6
225	Serrat-d´en-Vacquer near Perpignan, Pyrénées-Orientales	42.880000	2.8
226	Megalo Emvolon 1 (MEV), 20 km SW Thessaloniki	40.501700	22.8
227	Megalo Emvolon 1 (MEV), 20 km SW Thessaloniki	40.501700	22.8
228	Megalo Emvolon 1 (MEV), 20 km SW Thessaloniki	40.501700	22.8
229	W??e 1	52.350000	22.1
230	Nea Kallikratia, western Chalkidiki Peninsula, Thessaloniki area	40.314600	23.0
231	Epanomi (EPN I), western Chalkidiki Peninsula, Thessaloniki area	40.404600	22.8
232	Epanomi (EPN II), western Chalkidiki Peninsula, Thessaloniki area	40.404600	22.8
233	Nea Michaniona, western Chalkidiki Peninsula, Thessaloniki area	40.473100	22.8
234	Altan-Teli main fossiliferous bed (Dzereg valley)	47.100000	93.1
235	Altan-Teli main fossiliferous bed (Dzereg valley)	47.100000	93.1
236	Liossati, Kiourka	38.169200	23.8
237	Kanapoi	2.382699	36.2
238	Punta Nati near Ciutadella, Minorca	40.051000	3.8

	Locality	Latitude	Long
239	Jambol	42.338400	26.48
240	Pikermi	38.001500	23.9
241	Pellatal Phosphate Member, Varswater Formation, E Quarry Langebaanweg	-32.964906	18.1
242	Pellatal Phosphate Member, Varswater Formation, E Quarry Langebaanweg	-32.964906	18.1
243	Lee Creek Mine, Yorktown Sample, Beaufort County, North Carolina	35.400000	-76.8
244	Rexroad local fauna (Fox Canyon locality 3), Meade County, Kansas	37.200000	-100.3
245	Rexroad local fauna (Fox Canyon locality 3), Meade County, Kansas	37.200000	-100.3
246	Rexroad local fauna (Fox Canyon locality 3), Meade County, Kansas	37.200000	-100.3
247	Mnaidra Gap, Malta	35.900000	14.5
248	Corrida, Malta	35.874900	14.5
249	Corrida, Malta	35.874900	14.5
250	Santee, Knox County, Nebraska	42.000000	-97.0
251	Pauk Twonship	21.455300	94.5
252	Pauk Twonship	21.455300	94.5
253	Allatini, eastern part of Thessaloniki, western Chalkidiki peninsula	40.589900	22.9
254	Pylea, eastern part of Thessaloniki, western Chalkidiki peninsula	40.599400	22.9
255	UCMP V71137, Turlock Lake 10, Stanislaus County, California	37.600000	-120.6
256	UCMP V81248, Turlock Lake 11, Stanislaus County, California	37.600000	-120.6
257	Torrente Melacce, Cinigiano (GR)	42.883300	11.4
258	Santa-Vittoria d'Alba	44.700000	7.9
259	Samos 1	37.800000	26.9
260	Puerto de la Cadena, Murcia	38.000000	-1.1
261	Buis Ranch Local Fauna, Beaver County, Oklahoma	36.800000	-100.5
262	Buis Ranch Local Fauna, Beaver County, Oklahoma	36.800000	-100.5
263	Nikiti 2, Chalkidiki, Macedonia	40.220120	23.6
264	Crevillente 2	38.270000	-0.8
265	Prottes	48.389600	16.7
266	Prottes	48.389600	16.7
267	Prottes	48.389600	16.7
268	Prottes	48.389600	16.7
269	Prottes	48.389600	16.7

	Locality	Latitude	Long
270	Prottes	48.389600	16.7
271	Prottes	48.389600	16.7
272	Prottes	48.389600	16.7
273	Prottes	48.389600	16.7
274	Prottes	48.389600	16.7
275	Prottes	48.389600	16.7
276	Prottes	48.389600	16.7
277	Platania, Drama basin	41.196780	24.3
278	Djebel Krechem	35.035867	9.8
279	Barstow Beds, San Bernardino County, California	34.959210	-116.4
280	Barstow Beds, San Bernardino County, California	34.959210	-116.4
281	Barstow Beds, San Bernardino County, California	34.959210	-116.4
282	Barstow Beds, San Bernardino County, California	34.959210	-116.4
283	Cache Peak fauna, Tehachapi Mountains, Kern County, California	35.132190	-118.4
284	San Nicolas, UCMP locality V4536	3.200000	-75.2
285	Kohfidisch	47.166700	16.3
286	Kohfidisch	47.166700	16.3
287	Kohfidisch	47.166700	16.3
288	Kohfidisch	47.166700	16.3
289	Kohfidisch	47.166700	16.3
290	Aveiras de Baixo, Azambuja	39.061311	-8.8
291	UCMP V-3952, Ingram Creek site 8, Stanislaus County, California	37.600000	-120.8
292	Cerro de los Batallones, Madrid	40.179400	-3.7
293	Cerro de los Batallones, Madrid	40.179400	-3.7
294	Cerro de los Batallones, Madrid	40.179400	-3.7
295	Cerro de los Batallones, Madrid	40.179400	-3.7
296	Ricardo Fauna, Mojave Desert, Kern County, California	35.300000	-118.5
297	Ricardo Fauna, Mojave Desert, Kern County, California	35.300000	-118.5
298	El Lugarejo (Arévalo), Ávilla, Castilla	41.056000	-4.7
299	Hostalets de Piérola, Barcelone province, Cataluña, Vallés-Penedés basin	41.534900	1.7
300	Holzmannsdorfberg bei St. Marein	47.016700	15.6

	Locality	Latitude	Long
301	McGehee Farm near Newberry, Alachua County, Florida	29.700000	-82.60
302	Sant Quirze de Terrassa/de Galliners (del Vallès), Barcelona	41.383000	2.18
303	Sant Quirze de Terrassa/de Galliners (del Vallès), Barcelona	41.383000	2.18
304	Sant Quirze de Terrassa/de Galliners (del Vallès), Barcelona	41.383000	2.18
305	Castell de Barbera	41.370000	2.18
306	Iron Canyon Fauna, Mojave Desert, Kern County, California	35.300000	-118.50
307	Altenstadt, 7 km S Illertissen	48.154200	10.11
308	Gammelsdorf	48.549500	11.93
309	Gammelsdorf	48.549500	11.93
310	La Ciesma 1, Aragón	41.860000	-1.80
311	La Ciesma 1, Aragón	41.860000	-1.80
312	Abocador de Can Mata (els Hostalets de Pierola)(ACM/BDA), Vallés-Penedés basin, Cataluña	41.519000	1.72
313	El Buste, Aragón	41.886000	-1.60
314	Cerro del Otero, Palencia	42.010100	-4.52
315	Illescas, Toledo	40.126500	-3.84
316	Hohenhöwen, Engen, Hegau, southwestern Germany	47.835600	8.74
317	Hohenhöwen, Engen, Hegau, southwestern Germany	47.835600	8.74
318	Hohenhöwen, Engen, Hegau, southwestern Germany	47.835600	8.74
319	Hohenhöwen, Engen, Hegau, southwestern Germany	47.835600	8.74
320	Hohenhöwen, Engen, Hegau, southwestern Germany	47.835600	8.74
321	Hohenhöwen, Engen, Hegau, southwestern Germany	47.835600	8.74
322	Hohenhöwen, Engen, Hegau, southwestern Germany	47.835600	8.74
323	Hohenhöwen, Engen, Hegau, southwestern Germany	47.835600	8.74
324	Hohenhöwen, Engen, Hegau, southwestern Germany	47.835600	8.74
325	Hohenhöwen, Engen, Hegau, southwestern Germany	47.835600	8.74
326	Hohenhöwen, Engen, Hegau, southwestern Germany	47.835600	8.74
327	Steinheim a. Albuch	48.693900	10.00
328	Sansan, Gers (lake)	43.900000	-0.50
329	Sansan, Gers (lake)	43.900000	-0.50
330	Sansan, Gers (lake)	43.900000	-0.50
331	Sansan, Gers (lake)	43.900000	-0.50

	Locality	Latitude	Long
332	Chañe, Segovia	41.339000	-4.4
333	Belomechetskaya	44.400000	41.9
334	Atascosa county, Texas	28.911531	28.9
335	Wien-Kalksburg	48.120000	16.2
336	Tarazona de Aragón	41.903000	-1.7
337	Tarazona de Aragón	41.903000	-1.7
338	Charneco do Lumiar	38.788676	-9.1
339	Quinta da Farinheira	38.743489	-9.1
340	Alcalá de Henares, Cerro del Viso (Barranco de los Mártires y Santos de la Humosa), Madrid	40.488200	-3.3
341	Vallecas, Madrid	40.381500	-3.6
342	Plum Point, Calvert County, Maryland	38.000000	-76.0
343	Barajas, Madrid	40.483900	-3.5
344	Beautiful Bone, Alta Guajira Peninsula, Cocinetas basin	11.613056	71.3
345	Beautiful Bone, Alta Guajira Peninsula, Cocinetas basin	11.613056	71.3
346	Beautiful Bone, Alta Guajira Peninsula, Cocinetas basin	11.613056	71.3
347	Sandelzhausen	48.628300	11.7
348	Sandelzhausen unterer Geröllmergel (B)	48.628300	11.7
349	Monteagudo, Aragón	41.963000	-1.6
350	Ghaba	21.398277	57.6
351	Teiritzberg (T1 = 001/D/C), Korneuburg Basin, Lower Austria	48.366700	16.3
352	Kirchdorf an der Iller	48.072800	10.1
353	Arrisdrift	-28.550000	16.5
354	Arrisdrift	-28.550000	16.5
355	Arrisdrift	-28.550000	16.5
356	Arrisdrift	-28.550000	16.5
357	Arrisdrift	-28.550000	16.5
358	Arrisdrift	-28.550000	16.5
359	Arrisdrift	-28.550000	16.5
360	Arrisdrift	-28.550000	16.5
361	Can Mas near El Papiol, Barcelone province, Cataluña, Vallés-Penedés basin	41.433300	2.0
362	Garvin Gullv, 2 mi. north of Navasota, Jl J . Grimes County, Texas, Garvin Gullv local fauna	30.420040	-96.0

	Locality	Latitude	Long
363	Auchas	-28.550000	16.5
364	Auchas	-28.550000	16.5
365	Auchas	-28.550000	16.5
366	Auchas	-28.550000	16.5
367	Neuville-aux-Bois, Loiret	48.067000	2.0
368	Leithagebirge between Au and Loretto	47.915100	16.5
369	Thomas Farm Local Fauna, Gilchrist County, Florida	29.700000	-82.6
370	Thomas Farm Local Fauna, Gilchrist County, Florida	29.700000	-82.6
371	Elisabethfeld (= Elisabeth Bay) area, northern Sperrgebiet	-26.916000	15.1
372	Elisabethfeld (= Elisabeth Bay) area, northern Sperrgebiet	-26.916000	15.1
373	Rusinga Island, Lake Victoria, Kenya	-0.407433	34.1
374	Eggenburg-Schindergraben, Lower Austria	48.633300	15.8
375	Saint-Gérand-le-Puy, Allier	46.258100	3.5
376	Saint-Gérand-le-Puy, Allier	46.258100	3.5

	Genus	Taxon	CollNr	SCL	CCL	SCW	CCW	CH	PL	PW
1	Kinixys	Kinixys belliana	ZMB 37388	162.0	16.20	22.5	15.5	21.5	164.0	12.
2	Aldabrachelys	Aldabrachelys gigantea	ZMB 51996	770.0	77.00	106.0	52.0	112.0	NA	NA
3	Astrochelys	Astrochelys yniphora	-	426.0	42.60	NA	NA	NA	NA	NA
4	Centrochelys	Centrochelys sulcata	ZMB 63203	215.0	21.50	29.5	16.5	27.0	214.0	14.
5	Malacochersus	Malacochersus tornieri	ZMB 63174	153.0	15.30	17.0	10.5	14.0	149.0	9.8
6	Astrochelys	Astrochelys radiata	-	395.0	39.50	NA	NA	NA	NA	NA
7	Pyxis	Pyxis arachnoides	ZMB 37616	110.0	11.00	15.0	8.0	14.0	75.0	7.6
8	Kinixys	Kinixys homeana	ZMB 17747	193.0	19.30	25.0	14.0	21.0	175.0	11.
9	Aldabrachelys	Aldabrachelys gigantea	ZMB 47494	870.0	87.00	116.0	57.0	110.0	NA	NA
10	Psammobates	Psammobates tentorius	ZMB 28782	111.0	11.10	15.0	8.5	14.0	95.0	7.9
11	Psammobates	Psammobates oculifer	ZMB 25439	119.0	11.90	17.0	9.0	14.5	99.0	8.4
12	Psammobates	Psammobates oculifer	ZMB 37472	107.0	10.70	15.0	8.4	13.5	106.0	8
13	Astrochelys	Astrochelys yniphora	-	307.0	30.70	NA	NA	NA	NA	NA

	Genus	Taxon	CollNr	SCL	CCL	SCW	CCW	CH	PL	PW
14	Homopus	Homopus aerolatus	ZMB 229	88.0	8.80	10.5	6.9	9.0	78.0	6.1
15	Homopus	Homopus signatus	ZMB 63173	94.0	9.40	12.5	7.7	11.0	82.0	5.6
16	Kinixys	Kinixys belliana	ZMB 63191	194.0	19.40	25.5	12.5	19.0	173.0	12
17	Astrochelys	Astrochelys radiata	-	285.0	28.50	NA	NA	NA	NA	NA
18	Kinixys	Kinixys belliana	ZMB 63192	174.0	17.40	24.5	11.5	20.5	143.0	11.
19	Kinixys	Kinixys belliana	ZMB 63193	157.0	15.70	21.0	9.9	16.5	141.0	9.4
20	Aldabrachelys	Aldabrachelys gigantea	ZMB 37545	810.0	81.00	110.0	52.0	NA	NA	NA
21	Chersina	Chersina angulata	ZMB 49400	162.0	16.20	21.5	10.9	17.5	170.0	9.2
22	Chersina	Chersina angulata	ZMB 63181	170.0	17.00	23.0	11.4	19.0	169.0	10
23	Chersina	Chersina angulata	ZMB 63183	120.0	12.00	17.0	8.6	15.5	118.0	7.3
24	Chersina	Chersina angulata	ZMB 63182	136.0	13.60	18.0	9.9	16.0	138.0	8
25	Kinixys	Kinixys erosa	ZMB 63190	164.0	16.40	21.0	11.2	16.5	163.0	10.
26	Centrochelys	Centrochelys sulcata	ZMB 37387	435.0	43.50	54.0	29.9	53.0	405.0	29.
27	Indotestudo	Indotestudo travancorica	ZMB 37717	224.0	22.40	28.0	15.2	23.0	200.0	15.
28	Stigmochelys	Stigmochelys pardalis	ZMB 37344	405.0	40.50	55.0	27.0	50.5	350.0	24.
29	Stigmochelys	Stigmochelys pardalis	ZMB 63235	315.0	31.50	43.5	23.4	39.0	298.0	22.
30	Stigmochelys	Stigmochelys pardalis	ZMB 37495	297.0	29.70	41.5	21.4	36.0	271.0	19.
31	Stigmochelys	Stigmochelys pardalis	ZMB 42400	345.0	34.50	46.5	24.0	40.0	285.0	21.
32	Stigmochelys	Stigmochelys pardalis	ZMB 63232	350.0	35.00	46.0	23.9	45.0	303.0	21.
33	Psammobates	Psammobates geometricus	ZMB 192	92.0	9.20	13.5	7.1	13.0	68.0	6.3
34	Chersina	Chersina angulata	-	181.9	18.19	NA	NA	NA	NA	NA
35	Aldabrachelys	Aldabrachelys gigantea	ZMB 47443	800.0	80.00	105.0	51.5	105.0	NA	NA
36	Astrochelys	Astrochelys yniphora	-	415.0	41.50	NA	NA	NA	NA	NA
37	Astrochelys	Astrochelys yniphora	-	370.0	37.00	NA	NA	NA	NA	NA
38	Aldabrachelys	Aldabrachelys gigantea	ZMB 51995	1030.0	103.00	138.0	NA	NA	NA	NA
39	Aldabrachelys	Aldabrachelys gigantea	ZMB ???	720.0	72.00	105.5	55.0	117.0	NA	NA
40	Cylindraspis	Cylindraspis triserrata	-	1100.0	110.00	NA	NA	NA	NA	NA
41	Cylindraspis	Cylindraspis vosmaeri	-	500.0	50.00	NA	NA	NA	NA	NA
42	Astrochelys	Astrochelys radiata	-	334.0	33.40	NA	NA	NA	NA	NA
43	Astrochelys	Astrochelys radiata	-	305.0	30.50	NA	NA	NA	NA	NA
44	Centrochelys	Centrochelys sulcata	-	830.0	83.00	NA	NA	NA	NA	NA

	Genus	Taxon	CollNr	SCL	CCL	SCW	CCW	CH	PL	PV
45	Psammobates	Psammobates geometricus	ZMB 186	105.0	10.50	13.5	7.4	13.0	90.0	6.9
46	Astrochelys	Astrochelys radiata	-	242.0	24.20	NA	NA	NA	NA	NA
47	Psammobates	Psammobates tentorius	ZMB 37627	116.0	11.60	15.0	9.4	14.5	117.0	8.9
48	Psammobates	Psammobates tentorius	ZMB 50571	95.0	9.50	12.0	7.3	12.0	79.0	7
49	Psammobates	Psammobates tentorius	ZMB 14766	81.0	8.10	10.5	6.8	10.0	67.0	5.9
50	Pyxis	Pyxis planicauda	-	114.0	11.40	NA	NA	NA	NA	NA
51	Pyxis	Pyxis planicauda	-	134.0	13.40	NA	NA	NA	NA	NA
52	Pyxis	Pyxis planicauda	-	120.0	12.00	NA	NA	NA	NA	NA
53	Psammobates	Psammobates oculifer	ZMB 16399	111.0	11.10	16.0	8.8	14.0	108.0	7.9
54	Psammobates	Psammobates oculifer	ZMB 14772	101.0	10.10	15.0	8.0	14.0	98.0	7.3
55	Psammobates	Psammobates oculifer	ZMB 24261	103.0	10.30	14.0	8.2	13.5	100.0	7.8
56	Psammobates	Psammobates oculifer	ZMB 37623	105.0	10.50	14.5	7.9	13.5	93.0	7.4
57	Kinixys	Kinixys belliana	ZMB 37489	180.0	18.00	24.0	12.0	20.5	176.0	11.
58	Pyxis	Pyxis planicauda	-	160.0	16.00	NA	NA	NA	NA	NA
59	Psammobates	Psammobates geometricus	ZMB 50568	107.0	10.70	15.0	7.9	14.5	79.0	7.3
60	Aldabrachelys	Aldabrachelys gigantea	-	875.0	87.50	NA	NA	NA	NA	NA
61	Aldabrachelys	Aldabrachelys gigantea	-	1190.0	119.00	NA	NA	NA	NA	NA
62	Chersina	Chersina angulata	-	202.0	20.20	NA	NA	NA	NA	NA
63	Chersina	Chersina angulata	-	351.0	35.10	NA	NA	NA	NA	NA
64	Astrochelys	Astrochelys yniphora	-	446.0	44.60	NA	NA	NA	NA	NA
65	Chersina	Chersina angulata	ZMB 37393	160.0	16.00	20.0	10.0	17.5	158.0	9.2
66	Kinixys	Kinixys erosa	ZMB 50198	271.0	27.10	31.5	18.5	26.0	231.0	15.
67	Chersina	Chersina angulata	ZMB 37392	181.0	18.10	22.5	11.6	19.0	177.0	9.7
68	Psammobates	Psammobates oculifer	-	147.0	14.70	NA	NA	NA	NA	NA
69	Psammobates	Psammobates tentorius	-	145.0	14.50	NA	NA	NA	NA	NA
70	Pyxis	Pyxis arachnoides	-	150.0	15.00	NA	NA	NA	NA	NA
71	Psammobates	Psammobates geometricus	ZMB 185	118.0	11.80	18.0	9.1	16.5	112.0	8.2
72	Stigmochelys	Stigmochelys pardalis	-	720.0	72.00	NA	NA	NA	NA	NA
73	Chersina	Chersina angulata	-	179.3	17.93	NA	NA	NA	NA	NA
74	Astrochelys	Astrochelys radiata	-	355.0	35.50	NA	NA	NA	NA	NA
75	Pyxis	Pyxis planicauda	-	126.0	12.60	NA	NA	NA	NA	NA

	Genus	Taxon	CollNr	SCL	CCL	SCW	CCW	CH	PL	PW
76	Testudo	Testudo kleinmanni	-	144.0	14.40	NA	NA	NA	NA	NA
77	Cylindraspis	Cylindraspis indica	-	600.0	60.00	NA	NA	NA	NA	NA
78	Astrochelys	Astrochelys yniphora	-	361.0	36.10	NA	NA	NA	NA	NA
79	Astrochelys	Astrochelys yniphora	-	486.0	48.60	NA	NA	NA	NA	NA
80	Pyxis	Pyxis planicauda	-	148.0	14.80	NA	NA	NA	NA	NA
81	Pyxis	Pyxis arachnoides	-	111.0	11.10	NA	NA	NA	NA	NA
82	Pyxis	Pyxis arachnoides	-	110.0	11.00	NA	NA	NA	NA	NA
83	Pyxis	Pyxis arachnoides	-	80.0	8.00	NA	NA	NA	NA	NA
84	Kinixys	Kinixys lobatsiana	-	200.0	20.00	NA	NA	NA	NA	NA
85	Pyxis	Pyxis arachnoides	-	86.0	8.60	NA	NA	NA	NA	NA
86	Pyxis	Pyxis arachnoides	-	154.0	15.40	NA	NA	NA	NA	NA
87	Kinixys	Kinixys homeana	-	223.0	22.30	NA	NA	NA	NA	NA
88	Homopus	Homopus femoralis	-	168.0	16.80	NA	NA	NA	NA	NA
89	Pyxis	Pyxis planicauda	-	132.0	13.20	NA	NA	NA	NA	NA
90	Homopus	Homopus aerolatus	-	300.0	30.00	NA	NA	NA	NA	NA
91	Homopus	Homopus boulengeri	-	110.0	11.00	NA	NA	NA	NA	NA
92	Kinixys	Kinixys erosa	-	400.0	40.00	NA	NA	NA	NA	NA
93	Chersina	Chersina angulata	ZMB 37479	148.0	14.80	20.0	10.1	17.0	142.0	9.5
94	Psammobates	Psammobates geometricus	-	165.0	16.50	NA	NA	NA	NA	NA
95	Homopus	Homopus solus	-	109.0	10.90	NA	NA	NA	NA	NA
96	Malacochersus	Malacochersus tornieri	-	180.0	18.00	NA	NA	NA	NA	NA
97	Chersina	Chersina angulata	-	153.5	15.35	NA	NA	NA	NA	NA
98	Pyxis	Pyxis arachnoides	-	144.0	14.40	NA	NA	NA	NA	NA
99	Kinixys	Kinixys belliana	-	230.0	23.00	NA	NA	NA	NA	NA
100	Aldabrachelys	Aldabrachelys gigantea	-	1140.0	114.00	NA	NA	NA	NA	NA
101	Astrochelys	Astrochelys radiata	-	400.0	40.00	NA	NA	NA	NA	NA
102	Chersina	Chersina angulata	-	166.4	16.64	NA	NA	NA	NA	NA
103	Chersina	Chersina angulata	-	171.6	17.16	NA	NA	NA	NA	NA
104	Cylindraspis	Cylindraspis peltastes	-	420.0	42.00	NA	NA	NA	NA	NA
105	Chersina	Chersina angulata	-	161.3	16.13	NA	NA	NA	NA	NA
106	Homopus	Homopus signatus	-	106.0	10.60	NA	NA	NA	NA	NA

	Genus	Taxon	CollNr	SCL	CCL	SCW	CCW	CH	PL	PV
107	Kinixys	Kinixys spekii	-	220.0	22.00	NA	NA	NA	NA	NA
108	Cylindraspis	Cylindraspis inepta	-	1000.0	100.00	NA	NA	NA	NA	NA
109	Kinixys	Kinixys natalensis	-	160.0	16.00	NA	NA	NA	NA	NA
110	Geochelone	Geochelone elegans	ZMB 63222	208.0	20.80	29.5	14.6	28.5	199.0	13.
111	Geochelone	Geochelone elegans	ZMB 37523	245.0	24.50	32.0	16.6	32.0	228.0	14.
112	Geochelone	Geochelone elegans	ZMB 63220	221.0	22.10	32.0	16.0	31.0	179.0	13.
113	Geochelone	Geochelone elegans	ZMB 63221	220.0	22.00	31.0	15.4	27.0	209.0	14
114	Geochelone	Geochelone elegans	ZMB 63218	221.0	22.10	31.5	15.1	30.0	203.0	13.
115	Geochelone	Geochelone platynota	ZMB 6096	222.0	22.20	29.5	15.1	27.0	NA	MA
116	Manouria	Manouria emys	-	600.0	60.00	NA	NA	NA	NA	NA
117	Indotestudo	Indotestudo forstenii	-	202.0	20.20	NA	NA	NA	NA	NA
118	Indotestudo	Indotestudo travancorica	-	249.7	24.97	NA	NA	NA	NA	NA
119	Indotestudo	Indotestudo forstenii	-	309.0	30.90	NA	NA	NA	NA	NA
120	Indotestudo	Indotestudo elongata	-	360.0	36.00	NA	NA	NA	NA	NA
121	Indotestudo	Indotestudo forstenii	-	199.0	19.90	NA	NA	NA	NA	NA
122	Indotestudo	Indotestudo elongata	-	244.2	24.42	NA	NA	NA	NA	NA
123	Indotestudo	Indotestudo travancorica	-	244.2	24.42	NA	NA	NA	NA	NA
124	Manouria	Manouria impressa	ZMB 63172	165.0	16.50	20.0	12.9	18.0	157.0	10.
125	Indotestudo	Indotestudo elongata	ZMB 50492	276.0	27.60	33.0	19.4	28.5	246.0	17.
126	Indotestudo	Indotestudo elongata	ZMB 63175	235.0	23.50	30.5	16.0	29.5	202.0	14.
127	Indotestudo	Indotestudo elongata	ZMB 4174	208.0	20.80	26.0	13.4	20.0	180.0	11.
128	Indotestudo	Indotestudo elongata	ZMB 6106	166.0	16.60	21.0	11.3	18.0	151.0	11.
129	Manouria	Manouria emys	-	600.0	60.00	NA	NA	NA	NA	NA
130	Testudo	Testudo graeca	-	250.0	25.00	NA	NA	NA	NA	NA
131	Testudo	Testudo graeca	-	280.0	28.00	NA	NA	NA	NA	NA
132	Manouria	Manouria emys	ZMB 49049	212.0	21.20	26.5	16.5	25.0	NA	NA
133	Manouria	Manouria emys	ZMB 37350	445.0	44.50	52.0	32.0	50.0	455.0	29.
134	Manouria	Manouria emys	ZMB 37342	330.0	33.00	40.5	26.7	37.0	330.0	23.
135	Indotestudo	Indotestudo travancorica	-	331.0	33.10	NA	NA	NA	NA	NA
136	Indotestudo	Indotestudo travancorica	-	219.6	21.96	NA	NA	NA	NA	NA
137	Indotestudo	Indotestudo forstenii	-	200.5	20.05	NA	NA	NA	NA	NA

	Genus	Taxon	CollNr	SCL	CCL	SCW	CCW	CH	PL	PW
138	Testudo	Testudo horsfieldii	-	280.0	28.00	NA	NA	NA	NA	NA
139	Manouria	Manouria impressa	-	350.0	35.00	NA	NA	NA	NA	NA
140	Geochelone	Geochelone elegans	-	380.0	38.00	NA	NA	NA	NA	NA
141	Manouria	Manouria impressa	-	275.0	27.50	NA	NA	NA	NA	NA
142	Indotestudo	Indotestudo elongata	-	219.6	21.96	NA	NA	NA	NA	NA
143	Geochelone	Geochelone platynota	-	300.0	30.00	NA	NA	NA	NA	NA
144	Testudo	Testudo graeca	-	300.0	30.00	NA	NA	NA	NA	NA
145	Gopherus	Gopherus flavomarginatus	-	400.0	40.00	NA	NA	NA	NA	NA
146	Gopherus	Gopherus morafkai	-	299.0	29.90	NA	NA	NA	NA	NA
147	Gopherus	Gopherus berlandieri	-	240.0	24.00	NA	NA	NA	NA	NA
148	Testudo	Testudo horsfieldii	ZMB 63259	111.0	11.10	14.0	10.0	15.0	108.0	9.5
149	Pyxis	Pyxis arachnoides	ZMB 37615	108.0	10.80	15.0	7.9	13.0	96.0	7.1
150	Testudo	Testudo marginata	-	241.7	24.17	NA	NA	NA	NA	NA
151	Testudo	Testudo horsfieldii	ZMB 63258	123.0	12.30	14.5	10.9	15.0	121.0	9.8
152	Testudo	Testudo hermanni	-	183.3	18.33	NA	NA	NA	NA	NA
153	Testudo	Testudo hermanni	-	176.9	17.69	NA	NA	NA	NA	NA
154	Testudo	Testudo horsfieldii	ZMB 63257	114.0	11.40	14.5	10.2	14.0	110.0	9.9
155	Testudo	Testudo marginata	-	246.7	24.67	NA	NA	NA	NA	NA
156	Testudo	Testudo hermanni	-	196.0	19.60	NA	NA	NA	NA	NA
157	Testudo	Testudo hermanni	-	143.5	14.35	NA	NA	NA	NA	NA
158	Testudo	Testudo graeca	-	194.6	19.46	NA	NA	NA	NA	NA
159	Testudo	Testudo hermanni	-	200.0	20.00	NA	NA	NA	NA	NA
160	Testudo	Testudo hermanni	-	250.0	25.00	NA	NA	NA	NA	NA
161	Testudo	Testudo marginata	-	246.0	24.60	NA	NA	NA	NA	NA
162	Testudo	Testudo marginata	-	242.5	24.25	NA	NA	NA	NA	NA
163	Testudo	Testudo marginata	-	246.0	24.60	NA	NA	NA	NA	NA
164	Testudo	Testudo hermanni	-	147.0	14.70	NA	NA	NA	NA	NA
165	Testudo	Testudo marginata	-	290.0	29.00	NA	NA	NA	NA	NA
166	Testudo	Testudo marginata	-	250.0	25.00	NA	NA	NA	NA	NA
167	Testudo	Testudo hermanni	-	145.9	14.59	NA	NA	NA	NA	NA
168	Testudo	Testudo graeca	-	178.2	17.82	NA	NA	NA	NA	NA

	Genus	Taxon	CollNr	SCL	CCL	SCW	CCW	CH	PL	PW
169	Testudo	Testudo marginata	-	400.0	40.00	NA	NA	NA	NA	NA
170	Testudo	Testudo horsfieldii	ZMB 63255	136.0	13.60	18.0	13.0	16.5	129.0	12.
171	Testudo	Testudo horsfieldii	ZMB 63256	132.0	13.20	17.0	12.4	17.0	133.0	11.
172	Testudo	Testudo hermanni	-	168.3	16.83	NA	NA	NA	NA	NA
173	Testudo	Testudo hermanni	-	160.0	16.00	NA	NA	NA	NA	NA
174	Testudo	Testudo hermanni	-	154.0	15.40	NA	NA	NA	NA	NA
175	Testudo	Testudo hermanni	-	138.5	13.85	NA	NA	NA	NA	NA
176	Testudo	Testudo hermanni	-	173.0	17.30	NA	NA	NA	NA	NA
177	Testudo	Testudo marginata	-	242.5	24.25	NA	NA	NA	NA	NA
178	Testudo	Testudo hermanni	-	195.0	19.50	NA	NA	NA	NA	NA
179	Testudo	Testudo hermanni	-	157.0	15.70	NA	NA	NA	NA	NA
180	Testudo	Testudo hermanni	-	176.6	17.66	NA	NA	NA	NA	NA
181	Testudo	Testudo hermanni	-	130.0	13.00	NA	NA	NA	NA	NA
182	Testudo	Testudo hermanni	-	161.0	16.10	NA	NA	NA	NA	NA
183	Gopherus	Gopherus polyphemus	-	300.0	30.00	NA	NA	NA	NA	NA
184	Gopherus	Gopherus sp.	MVZ 210020	NA	NA	NA	NA	NA	219.6	NA
185	Gopherus	Gopherus sp.	MVZ 210003	NA	NA	NA	NA	NA	192.1	NA
186	Gopherus	Gopherus polyphemus	-	268.8	26.88	NA	NA	NA	NA	NA
187	Gopherus	Gopherus sp.	MVZ 120004	NA	NA	NA	NA	NA	196.7	NA
188	Gopherus	Gopherus sp.	MVZ 210009	NA	NA	NA	NA	NA	232.8	NA
189	Gopherus	Gopherus sp.	MVZ 210010	NA	NA	NA	NA	NA	240.1	NA
190	Gopherus	Gopherus agassizii	-	400.0	40.00	NA	NA	NA	NA	NA
191	Gopherus	Gopherus flavomarginatus	KU 39415	303.0	30.30	NA	23.2	NA	NA	NA
192	Gopherus	Gopherus polyphemus	-	308.0	30.80	NA	NA	NA	NA	NA
193	Gopherus	Gopherus polyphemus	-	303.0	30.30	NA	NA	NA	NA	NA
194	Gopherus	Gopherus polyphemus	-	387.0	38.70	NA	NA	NA	NA	NA
195	Gopherus	Gopherus polyphemus	-	342.0	34.20	NA	NA	NA	NA	NA
196	Gopherus	Gopherus flavomarginatus	USNM 61253	222.0	22.20	NA	16.6	NA	212.0	NA
197	Gopherus	Gopherus flavomarginatus	USNM 61254	371.0	37.10	NA	29.2	NA	358.0	NA
198	Gopherus	Gopherus polyphemus	-	238.9	23.89	NA	NA	NA	NA	NA
199	Gopherus	Gopherus flavomarginatus	USNM 60976	246.0	24.60	NA	21.2	NA	252.0	NA

	Genus	Taxon	CollNr	SCL	CCL	SCW	CCW	CH	PL	PW
200	Gopherus	Gopherus flavomarginatus	IU 42953	281.0	28.10	NA	22.0	NA	NA	NA
201	Gopherus	Gopherus flavomarginatus	IU 42954	278.0	27.80	NA	21.4	NA	NA	NA
202	Chelonoidis	Chelonoidis nigra	USNM 51069	588.0	58.80	68.3	44.5	NA	506.0	NA
203	Chelonoidis	Chelonoidis nigra	USNM1 102904	610.0	61.00	67.5	44.4	NA	515.0	NA
204	Chelonoidis	Chelonoidis carbonaria	-	593.0	59.30	NA	NA	NA	NA	NA
205	Chelonoidis	Chelonoidis abingdonii	-	980.0	98.00	NA	NA	NA	NA	NA
206	Chelonoidis	Chelonoidis denticulata	-	333.4	33.34	NA	NA	NA	NA	NA
207	Chelonoidis	Chelonoidis chilensis	UF33604	169.0	16.90	21.5	13.2	NA	161.0	NA
208	Chelonoidis	Chelonoidis chilensis	UF33618	186.0	18.60	25.0	14.7	NA	169.0	NA
209	Chelonoidis	Chelonoidis nigra	-	717.0	71.70	NA	NA	NA	NA	NA
210	Chelonoidis	Chelonoidis chilensis	UF33617	169.0	16.90	22.8	14.6	NA	162.0	NA
211	Chelonoidis	Chelonoidis carbonaria	UF27384	242.0	24.20	31.7	15.5	NA	219.0	NA
212	Chelonoidis	Chelonoidis carbonaria	UF33597	253.0	25.30	31.7	15.3	NA	215.0	NA
213	Chelonoidis	Chelonoidis nigra	USNM1 222494	595.0	59.50	68.0	43.6	NA	533.0	NA
214	Chelonoidis	Chelonoidis carbonaria	-	333.4	33.34	NA	NA	NA	NA	NA
215	Chelonoidis	Chelonoidis carbonaria	UF5259	226.0	22.60	28.7	12.9	NA	198.0	NA
216	Chelonoidis	Chelonoidis becki	-	1050.0	105.00	NA	NA	NA	NA	NA
217	Chelonoidis	Chelonoidis denticulata	UF33661	333.0	33.30	38.0	21.4	NA	305.0	NA
218	Chelonoidis	Chelonoidis denticulata	UF61931	317.0	31.70	41.2	18.5	NA	291.0	NA
219	Chelonoidis	Chelonoidis denticulata	UF33670	365.0	36.50	47.0	22.0	NA	326.0	NA
220	Chelonoidis	Chelonoidis chilensis	UF33603	183.0	18.30	23.4	14.5	NA	166.0	NA
221	Chelonoidis	Chelonoidis nigra	-	731.3	73.13	NA	NA	NA	NA	NA
222	Chelonoidis	Chelonoidis chilensis	-	200.0	20.00	NA	NA	NA	NA	NA
223	Chelonoidis	Chelonoidis carbonaria	UF48278	247.0	24.70	33.9	15.5	NA	214.0	NA
224	Chelonoidis	Chelonoidis carbonaria	-	296.5	29.65	NA	NA	NA	NA	NA
225	Chelonoidis	Chelonoidis carbonaria	-	290.0	29.00	NA	NA	NA	NA	NA
226	Chelonoidis	Chelonoidis carbonaria	UF33596	189.0	18.90	24.7	12.1	NA	174.0	NA
227	Chelonoidis	Chelonoidis nigra	-	745.7	74.57	NA	NA	NA	NA	NA
228	Chelonoidis	Chelonoidis chathamensis	-	890.0	89.00	NA	NA	NA	NA	NA
229	Chelonoidis	Chelonoidis denticulata	UF19242	466.0	46.60	59.7	26.5	NA	410.0	NA
230	Chelonoidis	Chelonoidis denticulata	UF23231	377.0	37.70	47.1	23.8	NA	334.0	NA

	Genus	Taxon	CollNr	SCL	CCL	SCW	CCW	CH	PL	PW
231	Chelonoidis	Chelonoidis denticulata	-	820.0	82.00	NA	NA	NA	NA	NA
232	Chelonoidis	Chelonoidis duncanensis	-	840.0	84.00	NA	NA	NA	NA	NA
233	Chelonoidis	Chelonoidis chilensis	-	222.0	22.20	NA	NA	NA	NA	NA
234	Chelonoidis	Chelonoidis chilensis	UF33600	157.0	15.70	20.8	11.9	NA	145.0	NA
235	Chelonoidis	Chelonoidis phantastica	-	860.0	86.00	NA	NA	NA	NA	NA
236	Chelonoidis	Chelonoidis vicina	-	1250.0	125.00	NA	NA	NA	NA	NA
237	Chelonoidis	Chelonoidis hoodensis	-	813.0	81.30	NA	NA	NA	NA	NA
238	Chelonoidis	Chelonoidis nigra	-	1300.0	130.00	NA	NA	NA	NA	NA
239	Chelonoidis	Chelonoidis darwini	-	965.0	96.50	NA	NA	NA	NA	NA
240	Chelonoidis	Chelonoidis chilensis	-	450.0	45.00	NA	NA	NA	NA	NA

```
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

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