

Supplementary Material

Online Appendix A. Trees used in biogeographic analyses.

Time explains regional richness patterns within clades more often than diversification rates or area

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1. Bengtson et al. (2015)

((((((((((((((AB_35_M_p:0.5552675910818996,AB_22_M_i:0.5552675910818996):0.24427138653628555,AB_15_M_d:0.7995389776181852):0.21212184347682106,AB_18_M_d:1.0116608210950075):0.9661335210964332,(AB_40_M_r:1.0541895840264006,AB_23_M_j:1.0541895840264006):0.9236047581649998):0.17667503979272015,AB_28_M_m:2.1544693819841196):0.3655396333384804,AB_10_M_c:2.5200090153226):1.2279368351096296,(((AB_11_M_c:1.9449762627206915,AB_42_M_r:1.9449762627206915):1.0470990431423988,(AB_41_M_r:2.717079106294099,AB_60_Pla:2.717079106294097):0.2749961995689989):0.39955654324780143,((AB_49_M_t:1.4799129738863996,AB_6_M_br:1.4799129738863996):1.4027604546713945,AB_66_M_c:2.8826734285577933):0.5089584205531059):0.3563140013213295):0.3279153802509689,((AB_17_M_c:1.2547831773868996,AB_65_M_f:1.2547831773868996):0.9702634441973013,AB_4_M_al:2.2250466215841316):1.8508146090989976):0.34748777577580103,((((((AB_21_M_h:0.4489088433336508,AB_39_M_q:0.4489088433336508):0.15388249807403964,(AB_12_M_c:0.0856821557244043,AB_44_M_s:0.0856821557244043):0.517109185683295):0.24946889848081,AB_48_M_t:0.8522602398885004):0.15690005578264943,AB_14_M_e:1.009160295671149):0.3457868173645511,AB_24_M_l:1.3549471130357):0.7016042320969005,AB_45_M_s:2.0565513451325996):2.366797661326399):0.3946178068289008,((((((AB_33_M_p:0.45586180133162024,AB_32_M_p:0.45586180133162024):1.0256146044735903,AB_3_M_ag:1.4814764058052017):0.8657874347526788,AB_77_M_s:2.3472638405578787):0.439384691889821,AB_20_M_h:2.7866485324476704):0.5712199913136096,AB_2_M_ad:3.357868523761296):0.2704848255506902,AB_43_M_r:3.6283533493119995):0.9723064706378333,AB_63_M_k:4.600659819949833):0.2173069933380667):1.6001490474172009,((AB_59_L_u:4.885458089887199,AB_57_L_f:4.885458089887199):1.0968487098711952,AB_58_L_i:5.982306799758395):0.43580906094670624):0.4689018179197495,((((((((((AB_83_M_d:0.14424762403803237,AB_16_M_d:0.14424762403803149):0.1370935884158868,AB_79_M_d:0.28134121245391785):0.7895006688925919,AB_13_M_d:1.0708418813465097):0.22092172224978945,(AB_62_M_d:1.0437752393708983,AB_80_M_d:1.0437752393709):0.24798836422539994):0.05552696956468983,((AB_27_M_m:0.5334978632721104,AB_68_M_m:0.5334978632721104):0.6073040427186842,AB_81_M_d:1.1408019059907928):0.20648866717019532):0.3737624756422102,((AB_34_M_p:0.7230169077348734,AB_78_M_r:0.7230169077348734):0.3138796596545088,AB_67_M_o:1.0368965673893715):0.6841564814138286):0.3263027248228858,((((((AB_8_M_ca:0.624277661597263,AB_25_M_l:0.624277661597263):0.3895621283830586,AB_9_M_er:1.01383978998031):0.3057916475531446,AB_29_M_m:1.3196314375

334506):0.2104628307280847,((AB_38_M_p:0.14896252289630096,AB_82_M_d:0.1489625228963014):0.7367384042962706,AB_61_M_a:0.8857009271925711):0.6443933410689691):0.14924007710726572,AB_51_M_u:1.6793343453687841):0.36802142825728):0.11513988309947809,AB_30_M_o:2.162495656725534):0.11354341115226196,AB_1_M_ac:2.2760390678778246):0.3934104889312895,(((AB_37_M_p:0.725286130574486,AB_50_M_t:0.725286130574486):0.3213518553163155,(AB_36_M_p:0.3116242987643627,AB_31_M_p:0.3116242987643627):0.7350136871264388):0.6150778107724006,AB_19_M_g:1.6617157966632012):0.3255665529325986,(AB_5_M_au:1.3729984963356285,AB_64_M_t:1.3729984963356285):0.6142838532601713):0.6821672072133147):0.5922580489446858,(AB_47_M_s:2.7303569881164402,AB_26_M_m:2.7303569881164296):0.5313506176373504):3.6253100728710503):0.5458957832857942,(((AB_56_Hyd:2.860454863827334,AB_54_Ca_l:2.8604548638273384):0.5796364982123512,AB_53_Atr:3.440091362039669):1.4530077921608004,AB_55_Dol:4.893099154200401):1.6830830951379996,AB_52_Pha:6.5761822493384985):0.8567312125721456);

2. Sun et al. (2014)

((('S.glaucescens':67.31479318670443,'S.sciurea':67.31479318670443):22.567729761371737,'S.sciophila':89.88252294807617):8.983649450142423,((((('S.muricata':48.72775850889886,((('S.quadrifida':17.01720560498825,'S.laminigera':17.01720560498825):20.402394874476386,('S.stratosaSA26565':5.889200329370453,'S.reflexa':5.889200329370453):31.53040015009418):9.124587910581539,Gottscheasphagnoides:46.54418839004617):2.1835701188526855):-0.04887313082790001,((('S.tasmanica':20.085338295671363,('S.ciliata':10.70254925765039,((('S.chlorophylla':6.091093358645537,'S.kirkiana':6.091093358645537):2.7139399509000555,((('S.nitidissima':1.6113089371807519,'S.pellucida':1.6113089371807519):1.9504616457109023,'S.monticola':3.561770582891654):5.243262726653938):1.8975159481047967):9.382789038020974):9.456460759186427,'S.pseudociliata':29.54179905485779):19.13708632321317):4.982454292553541,((Pachyschistochilaspl:21.55287394508241,Pachyschistochilatri:21.55287394508241):17.435917906995684,((Pachyschistochilacol:19.203507238388937,(((Pachyschistochilaber:7.182386810365756,Pachyschistochilachi:7.182386810365756):1.1469686949019433,Pachyschistochilaniv:8.3293555052677):7.603154825067577,((Pachyschistochilavir:0.8312773176252222,Pachyschistochilasub:0.8312773176252222):2.5693585128878453,Pachyschistochilapar:3.4006358305130675):12.531874499822209):3.270996908053661):9.392505423332835,(Pachyschistochilaleu:10.105362236779456,Pachyschistochilaref:10.105362236779456):18.490650424942316):10.392779190356322):14.672547818546406):20.620049545490275,(Perssoniellavitreoci:67.59229492811306,(((('S.alataNEW':3.317092228095021,'S.gayanaNEW':3.317092228095021):48.141136116032015,(((Paraschistochilaconc:14.327366875097994,Paraschistochilapinn:14.327366875097994):10.354059532778251,Paraschistochilaspeg:24.681426407876245):7.517990438014692,Pleurocladopsissimul:32.19941684589094):19.2588114982361):10.263298718453228,(((('S.nobilis':4.352016746889433,'S.pluriciliata':4.352016746889433):35.04333748859449,('S.baileyana':32.71882979083324,(((('S.blumei':13.54037164953806,'S.doriae':13.54037164953806):4.836742778026661,('S.volans':15.198348454715756,'S.spBerneo':15.198348454715756):3.1787659728489643):2.6668786470428074,'S.schultzei':21.043993074607528):11.674836716225713):6.676524444650681):19.45531269837113,((('S.antara':18.72223375856379,((('S.aligera':7.063943889502752,'S.philippinensis':7.063943889502752):5.101142844361846,Gottscheanuda:12.165086733864598):6.557147024699191):24.25015990000915,Paraschistochilatulo:42.97239365857294):15.878273275282112):2.8708601287252122):5.870767865532798):6.689094288001712):7.2068470527097475,((('S.appendiculata':57.962491073995324,('S.lehmanniana':17.01127093731671,('S.repleta':0.3438869433893501,'S.balfouriana':0.3438869433893501):16.66738399392736):40.9512

20136678614):11.971306654151618,'S.lamellata':69.93379772814694):11.55443854
067758):17.377936129394072);

3. Vitales et al. (2014)

(((((Cheirolophus_metlesicsii_2:0.04995913715696115,(Cheirolophus_anagaensis_:0.013575634651224355,Cheirolophus_webbianus_1:0.013575634651224355):0.0363835025057368):0.12995677735066063,((Cheirolophus_metlesicsii_1:0.06348015219999659,(Cheirolophus_canariensis_1:0.01834485998517299,'Cheirolophus_cf._webbianus':0.01834485998517299):0.0451352922148236):0.053838301453744575, (('Cheirolophus_cf._sp._nova':0.008610228307874779,Cheirolophus_webbianus_2:0.008610228307874779):0.020352162692222286,Cheirolophus_tagananensis:0.02896239100097065):0.0883560626536441):0.06259746085388063):0.11760064391064085,(((Cheirolophus_arboreus_4:0.012233873992525512,Cheirolophus_arboreus_3:0.012233873992525512):0.041261881616266954,(Cheirolophus_arboreus_2:0.011714492128986898,'Cheirolophus_teydis (LaPalma)':0.011714492128986898):0.04178126347980557):0.10347498823437198, ('Cheirolophus_junonianus_var._isoplexiphyllus':0.08594326102611383, (('Cheirolophus_junonianus_var._junonianus':0.009103775613367948,'Cheirolophus_santos-abreuii':0.009103775613367948):0.027426139722843523,(Cheirolophus_puntallanensis:0.019528664346670332,Cheirolophus_sventenii:0.019528664346670332):0.01700125098954114):0.02302660970817233,Cheirolophus_arboreus_1:0.0595565250443838):0.026386735981730025):0.07102748281705062):0.14054581457509818):0.19778131040344515,(((Cheirolophus_falcisectus_1:0.016242000320811356,Cheirolophus_falcisectus_2:0.016242000320811356):0.2363329534166167,(Cheirolophus_satarataensis:0.15607360144242743,(Cheirolophus_arbutifolius_1:0.01537133784760547,Cheirolophus_arbutifolius_2:0.01537133784760547):0.14070226359482196):0.09650135229500062):0.24272291508427973):0.5304770317413826,(((Cheirolophus_burchardii:0.02098604022872036,Cheirolophus_canariensis_2:0.02098604022872036):0.27297886018632445,((Cheirolophus_dariasii:0.10943230383182734,Cheirolophus_duranii:0.10943230383182734):0.06862135940518688,(Cheirolophus_ghomehythus_1:0.014768558480195426,Cheirolophus_ghomerythus_2:0.014768558480195426):0.1632851047568188):0.11591123717803059):0.2534487013103089,('Cheirolophus_teydis (Tenerife) 1':0.020694736625231247,'Cheirolophus_teydis (Tenerife) 2':0.020694736625231247):0.5267188651001224):0.4783612988377367);

4. Toussaint and Condamine (2016)

((*Nicrophorus przewalskii*:64.85493229714092,*Nicrophorus smefarka*:64.85493229714092):43.61383773531152,(*Nicrophorus distinctus*:99.6397143446321,(((*Nicrophorus antennatus*:49.21798337804847,*Nicrophorus dauricus*:49.21798337804847):15.420763446084507,(*Nicrophorus japonicus*:45.86035143117198,(*Nicrophorus nigricornis*:39.86291666116574,*Nicrophorus vespillo*:39.86291666116574):5.99743477006237):18.778395392961002):11.458582938110084,(*Nicrophorus americanus*:61.33596988376031,*Nicrophorus orbicollis*:61.33596988376031):14.761359878482779):16.504573124458233,((*Nicrophorus germanicus*:16.435453114023773,*Nicrophorus morio*:16.435453114023773):71.24872632707985,((*Nicrophorus sayi*:77.03470588673804,(*Nicrophorus humator*:72.95504975023215,(*Nicrophorus trumboi*:56.39746039270091,((*Nicrophorus maculifrons*:23.736571202868475,*Nicrophorus montivagus*:23.736571202868475):18.85921485854513,(*Nicrophorus schawalleri*:31.244495492817038,((*Nicrophorus melissae*:16.703954516765208,*Nicrophorus quadripunctatus*:16.703954516765208):6.00021475119496,(*Nicrophorus charon*:20.016752355849036,(*Nicrophorus insignis*:17.87963261583124,((*Nicrophorus insularis*:14.158778540739092,*Nicrophorus kieticus*:14.158778540739092):3.3787186670976155,(*Nicrophorus podagricus*:15.780344593708406,(*Nicrophorus heurni*:12.891494574169855,(*Nicrophorus apo*:8.189535095147846,*Nicrophorus nepalensis*:8.189535095147846):4.701959479022008):2.8888500195385234):1.7571526141283016):0.34213540799456155):2.137119740017795):2.687416912111132):8.540326224856898):11.351290568596568):13.801674331287302):16.557589357531214):4.079656136505889):7.637784726924295,((*Nicrophorus lunatus*:38.643087471406005,*Nicrophorus oberthuri*:38.643087471406005):42.59259843841777,(*Nicrophorus concolor*:75.4873077990492,(*Nicrophorus tenuipes*:39.4536752276193,(*Nicrophorus defodiens*:22.034508563249375,*Nicrophorus vespilloides*:22.034508563249375):17.419166664369953):29.13304889481688,(((*Nicrophorus didymus*:17.17860550443035,*Nicrophorus scrutator*:17.17860550443035):22.370699522018725,(*Nicrophorus olidus*:1.971724539236277,*Nicrophorus quadrimaculatus*:1.971724539236277):37.5775804872128):20.888788588852037,(*Nicrophorus carolinus*:53.55395484283153,(*Nicrophorus marginatus*:36.937998229199394,(*Nicrophorus guttula*:22.30949274726737,*Nicrophorus obscurus*:22.30949274726737):14.628505481932052):16.615956613632136):6.8841387724695835):3.7071777461111566,((*Nicrophorus hispaniola*:26.4959940565314,*Nicrophorus pustulatus*:26.4959940565314):28.18699199994711,((*Nicrophorus hybridus*:23.63982194481099,*Nicrophorus tomentosus*:23.63982194481099):17.206008037922402,(*Nicrophorus semenowi*:30.102722982694644,((*Nicrophorus mexicanus*:1.8592061420349637,*Nicrophorus nigrita*:1.8592061420349637):24.546706253984553,(*Nicro*

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austus:5.147392544159771,Nicrophorus_investigator:5.147392544159771):11.42992
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5. Frey and Vermeij (2008)

(((ade_OM_737_707:39.522374,pla_NC_1025_163:39.522374):16.477626,((((alb_QL_419_303:4.583029,alb_TZ_366_249:4.583029):5.302783,san_EG_966_463:9.885812):20.832651,(exu_ID_2335_2400:23.213947,tex_ZA_346_229:23.213947):7.504515):4.94211,(((ful_PA_126_189:12.000159,sen_CM_23_31:12.000159):4.344709,tes_FL_322_205:16.344868):7.354434,fun_MX_941_427:23.699301):11.961271):3.702428,((((((ant_MY_856_628:12.153436,(ery_QL_409_293:5.451306,(lit_ID_2358_2423:2.555858,lit_TZ_863_635:2.555858):2.895447):1.517629,vit_NC_1015_153:6.968935):5.184501):1.369678,(orb_EG_52_92:12.421945,(pol_PH_860_632:8.441311,(pol_MG_2355_2420:6.806038,pol_TH_864_636:6.806038):1.635273):3.980634):1.101169):13.14393,lon_OM_2603_2610:26.667044):4.323117,((((((arg_AS_68_108:3.878117,arg_PF_66_106:3.878117):6.491943,oce_JP_1106_1148:10.37006):10.062273,pat_PH_936_522:20.432333):3.925231,oli_ID_2346_2411:24.357565):3.345964,(ate_RE_749_719:23.4902,(cha_TH_2381_2446:8.647429,cha_QL_407_291:8.647429):8.548625,((ret_FJ_1006_144:5.956539,ret_PH_872_644:5.956539):7.45916,squ_PH_784_552:13.415699):3.780355):6.294147):4.213328):2.150535,(art_QL_416_300:24.757458,(inc_ID_2934_2991:14.627599,(ins_AS_76_116:10.338442,uml_ZA_888_660:10.338442):4.289157):10.12986):5.096605):1.136098):1.716552,((((cos_ID_2332_2397:21.730099,mag_MU_758_728:21.730099):4.660145,((((((((fil_FJ_796_568:5.345123,fil_NC_683_558:5.345123):0.848776,gua_GU_801_573:6.193899):0.444985,fil_NC_1023_161:6.638883):1.452705,hel_JP_1089_1131:8.091588):2.059752,gro_PG_905_491:10.151341):6.227495,((qua_TZ_355_238:8.131973,und_PH_2822_3035:8.131973):0.590926,und_ID_2964_3021:8.722899):7.655937):4.606261,((((((lae_JP_1093_1135:3.099475,und_FJ_1070_1080:3.099475):0.498788,und_NC_1067_1077:3.598263):0.400549,und_NC_685_561:3.998811):0.92535,((und_AS_834_606:3.30316,und_MY_894_666:3.30316):1.06374,(und_MG_2362_2427:0.643805,und_TZ_353_236:0.643805):3.723095):0.557262,(und_SG_898_670:1.465131,und_TH_899_671:1.465131):3.45903):1.134106,und_JP_1122_1164:6.058267,(und_HK_892_664:3.829517,und_TW_3118_3115:3.829517):2.22875):4.948937,max_NC_1035_173:11.007204):6.616547,(und_FJ_1071_1081:3.616258,(und_JP_1119_1161:2.873474,und_WS_3084_3098:2.873474):0.742784):14.007493):3.361345):3.173304,(pic_HI_1043_181:14.381573,(pli_CK_392_275:9.702165,pli_JP_1112_1154:9.702165):4.679408):9.776827):2.231844):2.648559,((pel_FL_316_200:15.420496,ver_PA_308_192:15.420496):4.227791,sca_MX_949_436:19.648287):9.390516):3.66791):4.313154,((jap_JP_1102_1144:1.947371,jap_KR_2372_2437:1.947371):8.543914,yol_HK_910_496:10.491285):26.528582):2.343133):11.647199,((atr_WA_2324_2389:26.221416,(mel_NS_1038_176:3.739012,mor_EI_57_97:3.739012):22.482403):11.161749,lir_E

I_59_99:37.383165):13.627034):4.989801):34.0,((((((((ang_FJ_397_281:8.459852,C
lithon_corona:8.459852):3.906514,chl_JP_1123_1165:12.366366):2.567563,Clithon_
spinosa:14.933929):9.603976,oua_QL_421_305:24.537905):7.212359,(((lut_PA_123
_186:14.044672,(pir_PA_312_196:11.186389,(pup_PA_314_198:10.158931,(rub_G
H_338_221:6.830288,vir_PA_313_197:6.830288):3.328643):1.027458):2.858283):8.
327422,owe_GH_337_220:22.372094):3.061956,(Neritina_turrita:16.838172,var_PG
_388_271:16.838172):8.595878):6.316215):3.673467,(((Dostia_cornucopia:16.13135
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Neritina_canalis:8.567272,Neritina_pulligera:8.567272):21.616193):5.240267):11.22
9503,Smaragdia_rangiana:46.653234):21.64282,((Cinnalepeta_pulchella:30.053641,P
henacolepas_sp1:30.053641):23.710367,nat_GM_2374_2439:53.764008):14.532046)
:11.574373,(Theodoxus_prevostianus:44.615184,Theodoxus_transversalis:44.615184
):35.255243):10.129573);

6. Ludt et al. (2015)

(Luvar_imperialis:60.932013407745494,(((Naso_brevirostris:7.600652091812993,Naso_literatus:7.600652091812993):43.32961651600951,(((Acanthurus_blochii:11.604462162425996,Ctenochaetus_striatus:11.604462162425996):23.397774014095006,(Paracanthurus_hepatus:13.573476027871997,Zebrasoma_flavescens:13.573476027871997):21.428760148649005):5.347899349667003,(Prionurus_microlepidotus:12.114939601391,(((Prionurus_punctatus:0.49177840670854067,Prionurus_laticlavus:0.49177840670854067):2.632874557068451,Prionurus_biafraensis:3.12465296377729):6.263543047848202,(((Prionurus_maculatus:2.1863061920929923,Prionurus_chrysurus:2.1863061920929923):2.5197771189028515,Prionurus_scalprum:4.706083310995844):4.682112700629649):2.7267435897655083):28.235195924796997):10.5801330816345):5.922239011118997,Zanclus_cornutus:56.8525076189414):4.079505788803999);

7. Ma et al. (2016)

(((Variola_albimarginata:4.0913,Variola_louti:4.1153):28.2546,(Gonioplectrus_hispanus:27.6221,(Saloptia_powelli:16.5092,((Plectropomus_oligacanthus:2.9464,(Plectropomus_laervis:1.249,Plectropomus_marisburi:1.265):1.6653):4.5877,((Plectropomus_maculatus:2.9464,(Plectropomus_leopardus:1.7374,Plectropomus_pessuliferus:1.7534):1.1849):2.7062,(Plectropomus_punctatus:4.1793,Plectropomus_areolatus:4.1873):1.4572):1.8815):8.9992):11.0889):4.7478):3.691,((((((Epinephelus_albomarginatus:8.4388,((Epinephelus_marginatus:6.7654,(Mycteroperca_rubra:1.7534,Epinephelus_costae:1.7614):5.012):0.8887,((Epinephelus_gorensis:3.691,Epinephelus_caninus:3.715):2.7222,((Mycteroperca_fusca:2.0977,Mycteroperca_acutirostris:2.0977):3.707,(Mycteroperca_microlepis:4.8038,(Mycteroperca_prionura:4.4115,(Mycteroperca_olfax:3.9872,((Mycteroperca_tigris:3.2266,(Mycteroperca_interstitialis:1.8975,(Mycteroperca_xenarcha:0.2882,Mycteroperca_phenax:0.2882):1.5933):1.3291):0.5604,(Mycteroperca_rosacea:3.0104,(Mycteroperca_jordani:2.5941,(Mycteroperca_venenosa:1.265,Mycteroperca_bonaci:1.265):1.3291):0.4243):0.7606):0.2002):0.4243):0.4003):1.0008):0.6245):1.225):0.7686):0.8487,(Epinephelus_morrhua:4.1793,(Epinephelus_poecilonotus:2.0256,Epinephelus_radiatus:2.0256):2.1697):5.1001):3.1865,(Epinephelus_andersoni:10.3203,Epinephelus_posteli:10.3203):2.1617):3.3547,((Epinephelus_aeneus:12.2818,((Anyperodon_leucogrammicus:9.4956,(Epinephelus_daemeli:9.2954,((Epinephelus_fuscoguttatus:4.2434,Epinephelus_polyphemadion:4.2514):4.1153,(Cromileptes_altivelis:7.526,(Epinephelus_ongus:5.6445,(Epinephelus_corallicola:3.2266,(Epinephelus_summana:2.3139,Epinephelus_coeruleopunctatus:2.3139):0.8967):2.4259):1.8815):0.8327):0.9207):0.2002):1.0408,(Epinephelus_latifasciatus:9.1353,(Epinephelus_bruneus:8.5989,((Epinephelus_tukula:6.1329,(Epinephelus_malabaricus:2.2498,Epinephelus_coioides:2.2498):3.8751):1.201,(Epinephelus_lanceolatus:3.763,Epinephelus_itajara:3.779):3.5548):1.257):0.5444):1.3931):1.7374):2.9784,(((Epinephelus_merra:7.3419,(Epinephelus_retouti:4.8118,(Epinephelus_fasciatus:0.9207,Epinephelus_irroratus:0.9207):3.8831):2.514):1.6493,(Epinephelus_hexagonatus:6.7094,(Epinephelus_spilotoceps:2.9944,(Epinephelus_tauvina:2.514,Epinephelus_melanostigma:2.514):0.4964):3.691):2.2818):3.0264,((Epinephelus_howlandi:7.6701,((Epinephelus_rivulatus:5.1161,(Epinephelus_faveatus:3.9632,Epinephelus_bontoides:3.9872):1.1289):0.9608,(Epinephelus_quoyanus:4.8118,(Epinephelus_trimaculatus:2.9384,Epinephelus_macrospilos:2.9464):1.8655):1.265):1.5933):2.7062,(Epinephelus_guttatus:6.3411,(Epinephelus_morio:3.8431,Epinephelus_striatus:3.8431):2.49):4.0352):1.6253):0.4644,(((Epinephelus_bleekeri:7.5981,(Epinephelus_maculatus:5.4444,(Epinephelus_longispinis:3.4908,Epinephelus_bilobatus:3.4908):1.9376):2.1537):2.0897,(Epinephelus_miliaris:6.5733,((Epinephelus_aff_polylepis:4.5476,((Epinephelus_multinotatus:2.7942,

(*Epinephelus_cyanopodus*:0.8967,*Epinephelus_flavocaeruleus*:0.9207):1.8735):1.3851,(*Epinephelus_chlorostigma*:1.6173,*Epinephelus_areolatus*:1.6173):2.5781):0.3523):1.193,(*Epinephelus_undulatostratus*:1.1129,*Epinephelus_undulosus*:1.1209):4.6117):0.8327):3.1145):1.4812,(*Epinephelus_analogus*:4.948,(*Epinephelus_adscensionis*:3.4908,(*Epinephelus_clippertonensis*:0.2082,*Epinephelus_labriformis*:0.2242):3.2666):1.4572):6.213):0.6165,((*Epinephelus_akaara*:4.4836,(*Epinephelus_awoara*:3.4187,(*Epinephelus_sexfasciatus*:1.5452,*Epinephelus_fasciatomaculosus*:1.5532):1.8655):1.0649):2.7222,(*Epinephelus_diacanthus*:1.9536,(*Epinephelus_amblycephalus*:1.4572,*Epinephelus_cf._stictus*:1.4652):0.4884):5.2442):4.5797):0.6805):2.7862):0.5685):1.6813,(((*Epinephelus_cifuentesi*:7.9744,(*Epinephelus_drummondhayi*:6.7094,*Triso_dermopterus*:6.7094):1.249):1.6493,(*Hyporthodus_flavolimbatus*:7.534,(((*Hyporthodus_niphobles*:2.9384,*Hyporthodus_niveatus*:2.9464):1.0408,(*Hyporthodus_nigritus*:2.9944,*Hyporthodus_exsul*:3.0184):0.9688):2.3619,(*Hyporthodus_acanthistius*:5.5805,(*Hyporthodus_mystacinus*:3.3547,((*Hyporthodus_quernus*:2.514,(*Epinephelus_chabaudi*:1.9456,*Hyporthodus_haifensis*:1.9616):0.5604):0.4964,(*Hyporthodus_septemfasciatus*:2.3859,(*Hyporthodus_ergastularius*:1.3931,*Hyporthodus_octofasciatus*:1.4011):0.9768):0.6325):0.3363):2.2338):0.7606):1.1849):2.0897):5.2522,((*Alphestes_multiguttatus*:4.5476,(*Alphestes_afer*:3.715,*Alphestes_immaculatus*:3.715):0.8327):4.948,(*Dermatolepis_dermatolepis*:3.4908,(*Dermatolepis_inermis*:2.7702,*Dermatolepis_striolata*:2.7942):0.6886):5.9968):5.3803):2.6421):7.0536,((*Cephalopholis_igarashiensis*:8.735,(*Cephalopholis_polleni*:7.0456,*Gracila_albomarginata*:7.0456):1.6813):14.0753,(((*Cephalopholis_hemistiktos*:5.5645,*Cephalopholis_leopardus*:5.5805):2.514,((*Cephalopholis_spiloparaea*:3.8431,*Cephalopholis_aurantia*:3.8511):2.9864,((*Cephalopholis_sexmaculata*:2.514,*Cephalopholis_miniata*:2.522):2.4339,((*Cephalopholis_sonnerati*:2.0977,*Cephalopholis_oligosticta*:2.0977):1.1849,(*Cephalopholis_nigripinnis*:0.4003,*Cephalopholis_urodeta*:0.4323):2.8583):1.6573):1.8815):1.265):3.5468,(*Cephalopholis_teniops*:8.9912,(*Cephalopholis_fulva*:8.1025,(*Paranthias_furcifer*:1.8975,*Paranthias_colonus*:1.8975):6.189):0.8887):2.6581):8.799,((*Cephalopholis_cruentata*:2.9944,*Cephalopholis_panamensis*:3.0184):12.0496,((*Cephalopholis_nigri*:12.6261,(*Cephalopholis_formosa*:6.0689,(*Cephalopholis_boenak*:5.2522,(*Cephalopholis_microprion*:2.0897,*Cephalopholis_cyanostigma*:2.0977):3.1465):0.8247):6.5492):1.6733,(*Cephalopholis_argus*:10.04,*Aethaloperca_rogaea*:10.0641):4.2434):0.7606):5.3723):2.3619):1.7614):11.4892);

8. Mariguela et al. (2016)

The tree in Fig. 3 was used directly to obtain the age of each clade.

9. Metallinou et al. (2015)

((Prag_3128_Mauritania_199:14.9327, (((Prag_409_Niger_201:2.1749, MHNG_2678_90_Mali_206:2.1749):1.2780, (BEV8870_Mali_197:2.9372, (BEV_T3039_Benin_195:2.3767,Prag_429_Burkina_Faso_196:2.3767):0.5605):0.5157):0.6278, (Prag_349_Niger_202:2.4439, (BEV_T519_Algeria_193:1.3901, BEV10156_Algeria_194:1.3677):1.0314):1.6368):10.8520):11.5471, (((((Poud_P17_Morocco_151:3.6547, BEV8105_Morocco_152:3.6323):3.2735, ((IBE_S993_Morocco_159:1.0538, Poud_P22_Morocco_158:1.0538):5.0224, (07_09M_Morocco_153:3.8565, (Poud_P24_Morocco_155:1.0538, Poud_P18_Morocco_156:1.0538):2.8027):2.2197):0.8296):5.3139, (11022012A_Morocco_160:3.3408, (Poud_908_Algeria_150:1.3229, BEV_T702_Algeria_149:1.3229):2.0179):8.9013):12.9596, ((((((IBE_S10012_Saudi_Arabia_113:1.8834,IBE_S10093_Saudi_Arabia_114:1.9283):3.1166,((IBE_S10263_Saudi_Arabia_115:3.4753,(IBE_S10290_Saudi_Arabia_116:3.0717,(JEM559_Yemen_119:2.1973,JEM508_Yemen_117:2.1749):0.8969):0.3812):0.2915, (IBE_S10324_Saudi_Arabia_127:2.6009, (IBE_S10115_Saudi_Arabia_124:1.6368, IBE_S10297_Saudi_Arabia_125:1.6368):0.9641):1.1659):1.2780):4.0135, ((JEM424_Yemen_130:3.4081, JEM466_Yemen_131:3.4081):1.9283, (JEM650_Yemen_136:3.6996, ((JEM110_Yemen_140:2.0179, JEM113_Yemen_139:2.0179):0.8072, (JEM62_Yemen_143:1.5022, AO125_Oman_145:1.5022):1.3229):0.8744):1.6592):3.6996):7.4439, (IBE_S10048_Saudi_Arabia_31:11.5919, (((IBE_S10109_Saudi_Arabia_73:7.0628, ((JEM37_Yemen_60:1.1883, IBE_S10272_Saudi_Arabia_53:1.1883):0.6726, (IBE_S10064_Saudi_Arabia_54:1.5471, (IBE_S10099_Saudi_Arabia_55:0.7175, IBE_S10145_Saudi_Arabia_54:0.6951):0.8296):0.3363):5.1794):1.0987, ((JOR036_Jordan_5:5.4484, (IBE_S4198_Egypt_81:1.5022, SUD12/2010_98_Sudan_82:1.5022):3.9462):1.6816, ((BEV7244_Egypt_92:0.6951, BEV_T3958_Jordan_95:0.7175):3.3857, ((IBE_S10305_Saudi_Arabia_103:1.6368, (IBE_S10047_Saudi_Arabia_101:0.8520,IBE_S10197_Saudi_Arabia_98:0.8744):0.7623):0.2915, (IBE_S10384_Saudi_Arabia_102:1.0762, IBE_S10096_Saudi_Arabia_102:1.0762):0.8520):2.1749):3.0269):1.0314):1.6816, (TW1011_UAE_34:7.7130, (ZFMK_70963_Oman_38:1.3677, (ZFMK_70961_Oman_47:1.0090,(UAE41_Oman_36:0.6502,UAE37_UAE_40:0.6502):0.3587):0.3587):6.3677):2.1076):1.7489):4.9103):2.0179, (((((SPM002952_48_Egypt_216:2.9596, (BEV7210_Egypt_215:2.1973, SPM001852_Egypt:2.1973):0.7623):3.2063, (SPM002962_105_Jordan_7:2.7803,

(TW1006_Jordan_9:0.4709, JOR128_Jordan_16:0.4933):2.2870):3.3632):3.5426,
(((TW1009_Jordan_172:0.7175, ZFMK_60930_Syria_181:0.7175):0.9193,
(06_14b_Israel_171:0.8520, ZFMK_60844_Syria_178:0.8520):0.7623):3.9910,
(NHMC80_3_48_6_Syria_183:1.5247,991J_Syria_182:1.5247):4.1031):4.0807):7.04
04,(TMHC179_Ethiopia_191:1.3677,(DNA44_Ethiopia_190:0.9641,DJI_02_Djibouti
_189:0.9865):0.3812):15.3812):1.7713):6.6816):1.2780);

10. Tolley et al. (2013)

(((Coleonyx_variegatus_NC008774:89.41777211418734,Gekko_gecko_NC007627:89.41777211418734):96.65349723536197,(Dibamus_sp_AY649149:171.94639244417365,(((Mabuya_quinquetaeniata_DQ238906:82.15129120750098,Acontias_meleagris_AY028880:82.15129120750098):63.627053596978726,((Cordylus_namaquensis_AY217950:68.44909044322625,Cordylorus_subtesselatus_AY217951:68.44909044322625):65.17839055014935,(Xantusia_vigilis_AY217993:49.27959066370349,Lepidophyma_flavimaculatum_NC008775:49.27959066370349):84.34789032967211):12.150863811104102):20.138779979426403,(((Aspidoscelis_tigris_AY046494:66.38960719723465,Alopoglossus_copii_AF420745:66.38960719723465):74.65558231366072,((Takydromus_tachydromoides_NC008773:45.53386088641539,Lacerta_viridis_NC008328:45.53386088641539):70.06339796103384,(Rhineura_floridana_NC006282:99.02887779980138,Amphisbaena_fuliginosa_FJ441683:99.02887779980138):16.568381047647847):25.447930663446144):12.671189523314013,((((((Heloderma_suspectum_ISIS100503:61.35139867691562,Xenosaurus_platycephalus_DQ990973:61.35139867691562):5.954262988480018,Varanus_indicus_EF193692:67.30566166539563):11.594924267479328,Elgaria_multicarinata_TWR469:78.90058593287496):13.84015877413978,Shinisaurus_crocodilurus_AB080274:92.74074470701474):55.14182129541432,((Liotyphlops_albirostris_AF366762:86.43729760730385,Dinodon_semicarinatus_NC001945:86.43729760730385):56.357549085980494,((((((((Brookesia_ambrensis_FGZC_445:0.871502245040882,Brookesia_antakarana_FGZC_444:0.871502245040882):14.44603305125218,(Brookesia_valeriae:10.851708303609309,Brookesia_griveaudi_FGZC_2803:10.851708303609309):4.465826992683752):1.8586276733766471,Brookesia_stumpffi_Manongarivo_FGMV_2002_2207:17.176162969669708):11.27930701378521,((Brookesia_superciliaris_Ranomafana_FGMV_2002_627:17.88361058410139,Brookesia_therezieni_1107:17.88361058410139):8.409790294842757,(((Brookesia_vadoni_Marojejy_FGZC_2739:12.146334356513108,Brookesia_betschi_ZCMV_2015:12.146334356513108):1.3838769192827964,Brookesia_lineata_G33:13.530211275795905):2.3110566376796307,Brookesia_thieli_Ambohitantely_ZCMV_752:15.841267913475535):7.638082288357571,Brookesia_ebenauyi_Ambre_FGZC_484:23.479350201833107):2.814050677111041):2.1620691045107705):3.7510483667107657,(Brookesia_perarmata_FGZC_703:25.174210014912134,(Brookesia_brygooi_61408:16.138018690489535,(Brookesia_bonsi:9.530369292520698,Brookesia_decaryi_B31:9.530369292520698):6.607649397968837):9.0361913244226):7.03230833525355):10.667643483786314,(((Brookesia_aff_minima_Betampona_BET11:27.734755302102318,Brookesia_ramanantsoai_FG1:27.734755302102318):3.849684801572291,(Brookesia_dentata_58383:27.5911040716375,Brookesia_exarmata

_FGZC_816:27.5911040716375):3.99333603203711):5.542887244700811,(((Brook
 esia_aff_NosyHara_FGZC_1831:19.18636642053621,(Brookesia_aff_exarmata_Md
 F_477_MdF477:12.301367512503852,Brookesia_desperata_FdAmbre_FGZC_1880:
 12.301367512503852):6.884998908032358):5.860119812345179,Brookesia_tubercul
 ata_FGZC_479:25.04648623288139):7.463099295612999,Brookesia_minima_Mano
 ngarivo_FGMV_2002_786:32.50958552849439):2.625103058555254,(Brookesia_pe
 yrierasi_NosyMangabe_ZCMV_2191:26.117170334223843,Brookesia_karchei_FGZ
 C_2752:26.117170334223843):9.017518252825798):1.9926387613257788):5.74683
 4485576578):15.95609121485721,(Brookesia_lolontany_AF443234:42.57212183350
 876,Brookesia_nasus_Ranomafana_FGMV_2002_445:42.57212183350876):16.2581
 31215300452):6.091124351015189,((((Rhampholeon_acuminatus_CT153:26.91572
 4048641952,((((Rhampholeon_platyceps_Rh11:8.756297820849118,Rhampholeon_c
 hapmanorum_Rh9:8.756297820849118):6.666180621923569,Rhampholeon_bouleng
 eri_Rh25:15.422478442772688):1.8689457663092224,Rhampholeon_nchisiensis_Rh
 8:17.29142420908191):7.418813494614536,(Rhampholeon_moyeri_Rh28:19.90716
 330737881,Rhampholeon_uluguruensis_Rh34:19.90716330737881):4.803074396317
 637):2.2054863449455056):8.566778132549274,(Rhampholeon_marshalli_Rh10:22.
 510304400382562,Rhampholeon_gorongosae_Rh17:22.510304400382562):12.97219
 7780808663):6.004194146017113,((((Rhampholeon_viridis_NPare_CT204:21.082635
 960176184,Rhampholeon_temporalis_Rh1:21.082635960176184):2.7721302330816
 684,Rhampholeon_spinosus_WUsambara_CT118:23.854766193257852):14.4048202
 30332891,Rhampholeon_spectrum_Rh20:38.25958642359075):3.2271099036175954
):8.357834893943448,((((((Bradydopion_occidentale_5618:7.968982920793845,(((B
 radypodion_ventrale_Groendal_KTH153:2.4764078992903418,Bradypodion_taeniab
 ronchum_Elandsberg_KT039:2.4764078992903418):0.6833696418932478,Bradypod
 ion_kentanicum_Mazeppa_CT183:3.1597775411835896):1.0967747061564297,(Bra
 dydopion_gutturale_Karoo_KT047:3.0924379902189876,Bradypodion_atromontanu
 m_Swartberg_KT016:3.0924379902189876):1.1641142571210317):3.712430673453
 8264):1.6200051943182086,((Bradypodion_caeruleogula_Ngoya_KTH676:7.985308
 85052187,Bradypodion_setaroi_Dukuduku_CT066:7.98530885052187):0.962145876
 8444473,((Bradypodion_thamnobates_Nottingham_fused:1.7212396885718855,Brad
 ypodion_melanocephalum_Hilton_CT016:1.7212396885718855):5.72815089796629
 45,(((Bradypodion_transvaalense_Soutpansberg_CT061:3.3880329508144635,Brady
 podion_dracomontanum_MH1057:3.3880329508144635):0.7952389383553675,Brad
 ypodion_ngomeense_Ngome_CT065:4.1832718891698315):1.1128080807002716,B
 radypodion_nemorale_Qudeni_CT146:5.296079969870102):2.153310616668077):1.
 4980641408281379):0.6415333877457368):0.8624995102757698,Bradypodion_caff
 er_PortStJohns_CT167:10.451487625387823):2.2178477917068378,(Bradypodion_p

umilum_Elim_KTH115:7.040931525257588,Bradypodion_damaranum_Witelsbos_KTH118:7.040931525257588):5.628403891837073):32.24009318752849,Nadzikambiana_mlanjense_Mulanje_PEMR16294:44.90942860462315):3.418021775316852,(((Furcifer_balteatus_Ambatolahy_FGMV_2002_284:40.946879994990546,(Furcifer_timoni_Ambre_FGZC_495:34.60286171849136,(((((((Furcifer_labordi_68616:6.833362484992794,Furcifer_antimena_M38:6.833362484992794):4.264810064508717,Furcifer_lateralis_Antoetra_FGMV_2002_65:11.09817254950151):4.467273578985338,(Furcifer_verrucosus_Tolagnaro_FGZC_66:10.080959042531443,Furcifer_oustaleti_fused:10.080959042531443):5.484487085955406):3.384446574576467,(((Furcifer_polleni_867:14.469327723484762,((Furcifer_pardalis_Ambre_FGZC_502:5.130038804004227,Furcifer_angeli_Genbank:5.130038804004227):4.377248006420396,Furcifer_rhinoceratus_Ankarafantsika_C18:9.507286810424622):4.9620409130601395):1.7916404794616216,Furcifer_cephalolepis_802:16.260968202946383):1.4628875127109566,Furcifer_nicosiai_Bemaraha_FGZC_662:17.72385571565734):1.2260369874059762):3.012034382267757,Furcifer_campani_Andringitra_FGMV_2002_2108:21.961927085331073):2.1298095987047176,Furcifer_minor_Genbank:24.09173668403579):1.4676624157063394,Furcifer_petteri_MdF_FGZC_606:25.55939909974213):2.4841151509296004,Furcifer_willsi_Andasibe_ZCMV_2216:28.04351425067173):6.559347467819627):6.344018276499185):4.953991643252046,(((Calumma_cf_cucullatum_Mahasoa_DRV_5713:32.45520197965755,(Calumma_marojezense_TAND2:18.795232601477476,(((Calumma_glawi_Ranomafana_FGMV_2002_321:5.424009029860979,Calumma_andringitraense_Andringitra_E11:5.424009029860979):4.993376769804129,(Calumma_gastrotaenia_Andasibe_FGMV_2002_987:6.718113042774611,Calumma_guillaumeti_Marojejy_ZCMV_2076:6.718113042774611):3.6992727568904984):4.572235003143554,(Calumma_tarzan_FGZC4499:12.543685635145936,Calumma_furcifer_Vohidrazana_A11:12.543685635145936):2.445935167662727):1.4369399774008933,Calumma_vencesi_Makira_ZCMV_11275:16.426560780209556):2.3686718212679203):13.659969378180072):9.823186647858876,(Calumma_malthe_Mantadia_D6:22.168258618094416,(((Calumma_gallus_Vohidrazana_B8:7.663821395297481,(Calumma_gallus_Manombo_ZCMV_492:6.344887079270945,Calumma_cf_fallax_Ambohitsara_ZCMV_152:6.344887079270945):1.318934316026536):8.053152982611206,(Calumma_boettgeri_NosyBe_D12:13.644093666687462,Calumma_nasutum_Marojejy_ZCMV_2072:13.644093666687462):2.0728807112212237):1.7676369725998224,(Calumma_nasutum_Andasibe_FGMV_2002_984:15.59774908842483,((Calumma_nasutum_Kidonavo_ZCMV_2891:9.064527499940485,Calumma_nasutum_Andohahela_FGZC_2508:9.064527499940485):4.8841875917771596,(Calumma_vohibola_SG3756:11.713339405112805,Calumma_nasutum_Makira_ZCMV_11292:11.713339405112805):2.23537568660484):1.6490339967071854):1.886

8622620836781):2.3504359780520225,((((Calumma_brevicornis_Andasibe_A47:5.7265369679253775,Calumma_crypticum_fused:5.7265369679253775):5.68582718519776,Calumma_hilleniussi_Ankaratra_ZCMV_2944:11.412364153123137):1.6415989932648447,((Calumma_amber_Ambre_504:8.547953530744865,(Calumma_hafahafa_DRV6282:5.880318881521336,Calumma_tsaratananensis_ZFMK12415:5.880318881521336):2.6676346492235288):1.290284519029715,Calumma_peltierorum_Manarikoba_G22:9.83823804977458):3.2157250966134026):1.7945804254187312,(Calumma_linotum_Manarikoba_E36:13.307806700097844,(Calumma_guibeii_TsaratananCamp2_DRV6140:12.346308857401176,Calumma_peyrierasi_ZCMV12416:12.346308857401176):0.9614978426966676):1.5407368717088694):4.986503756753818):2.3332112895338852):20.110130009422008):2.5553764036047326,(Calumma_capuroni_FGZC_2514:23.214387833040796,(Calumma_parsonii_cristifer_Mahasoa_DRV_5714:14.116263529618578,((Calumma_ambreense_Manarikoba_E36:3.8737236825779093,Calumma_globifer_Mandraka_D2:3.8737236825779093):3.5988984197428913,Calumma_oshaghnessyi_Ranomafana_ZCMV_604:7.472622102320801):6.643641427297778):9.098124303422217):21.61937719808036):1.0671066071214312):1.084691786749083,(((Kinyongia_uluguruensis_uluguru_CT189:29.957482966291128,(Kinyongia_magomberae_Udzungwa_MTSN8218:15.888549569733565,Kinyongia_oxyrhina_Nguru_CT150:15.888549569733565):14.068933396557563):10.683166525539981,((Kinyongia_uthmoelleri_SPare_CT151:35.579760542469856,(Kinyongia_tenuis_EUsambara_CAS168917:26.956774205963697,((Kinyongia_fischeri_Nguru_CT334:16.10962476710164,(Kinyongia_boehmei_Taita_JM2927:13.947982341730084,Kinyongia_tavetana_Kilimanjaro_CT113:13.947982341730084):2.1616424253715554):5.724509115131223,((Kinyongia_vosseleri_EUsambara_CAS168921:12.668777519368021,Kinyongia_matschiei_EUsambara_CAS168853:12.668777519368021):2.9036183074635478,Kinyongia_multituberculata_WUsambara_TZ31:15.572395826831569):6.261738055401294):5.122640323730835):8.622986336506155):3.215525405639054,(Kinyongia_asheorum:31.540173523585256,(Kinyongia_excubitor_MtKenya_CT209:22.460054074156847,(Kinyongia_adolfifriderici_Bwindi_CAS201593:14.035660409198318,(Kinyongia_carpenteri_Rwenzori_CT345:6.023409118545856,Kinyongia_xenorhinum_Rwenzori_CT350:6.023409118545856):8.012251290652463):8.42439366495853):9.080119449428409):7.2551395594485015):1.8453364087973512):4.743284807201512,((((Trioceros_balebicornutus_Ethiopia_BaleMtns_CT022:4.003316522406032,Trioceros_harennae_Bale_CT023:4.003316522406032):13.623643364649684,Trioceros_affinis_Ethiopia_Addis_CT021:17.626959887055715):15.367925278551276,((Trioceros_oweni_fused:20.531601309225834,(Trioceros_melleri_Zomba_CT056:17.198339191527616,(Trioceros_johnstoni_Kibale_CAS201596:10.073682273026945,Trioceros_ituriensis_ZFMK55707:10.073682273026945):7.12

4656918500671):3.3332621176982187):10.05946512924946,(((Trioceros_goetzei_Nyika_CT050:18.43429215997212,(Trioceros_weneri_Udzungwa_MTSN8690:15.292053221761837,(Trioceros_laterispinis_Udzungwa_MTSN5047:11.613350501130673,(Trioceros_tempeli_Njombe_CT187:10.289437754926064,(Trioceros_incornutus_PorotoMtns_CT149:4.97934826458186,Trioceros_fuelleborni_fused:4.97934826458186):5.310089490344205):1.3239127462046092):3.678702720631163):3.1422389382102835):4.692279772879672,(Trioceros_jacksonii_CAS199070:13.749060550159717,(((Trioceros_sternfeldi_MtMeru_CT326:6.187794172497541,(Trioceros_hanangensis_MtHanang_ZFMK_82368:3.092037655548651,Trioceros_rudis_Ngorongoro_CT114:3.092037655548651):3.0957565169488896):0.3397166621025933,Trioceros_kinetensis_Sudan_ZFMK_29714:6.527510834600134):1.6940503796240582,Trioceros_elliotti_Uganda_Masaka_CT348:8.221561214224192):2.001122311035715,(((Trioceros_schubotzi_MtKenay_CT211:5.7837985754285235,Trioceros_narraioca_ZFMK_84819:5.7837985754285235):2.7721576372758365,Trioceros_bitaeniatus_OldonyoSambu_CT338:8.55595621270436):0.7664378172146442,Trioceros_hoehnelii_MtKenya_CT210:9.322394029919003):0.9002894953409033):3.5263770248998103):9.377511382692076):5.300094470329352,Trioceros_deremensis_NguruS_MTSN_8491:2.8426666403181144):2.1644000352941504):2.4038187271316964):3.6619108588119573,(((Trioceros_wiedersheimi_ZSM855:12.558790929269565,Trioceros_quadricornis_fused:12.558790929269565):6.053815179224765,(((Trioceros_montium_ZSM828:9.06045193996563,Trioceros_cristatus_Gabon_CT143:9.060451939965631):2.1658567911150257,Trioceros_feae_EquatorialGuinea_CAS207681:11.226308731080657):7.386297377413674):18.04418991592462):8.727138274613672):1.6016291259590503):0.508984196717492,(((Chamaeleo_anchietae_Huila_KTH09_113:29.609382872391663,(((Chamaeleo_senegalensis_Guinea_CT087:19.08179584755681,(Chamaeleo_dilepis_Huila_KTH09_285:12.010035750992687,(Chamaeleo_gracilis_Guinea_CT088:3.185269888914543,Chamaeleo_necasi_ZFMK77059:3.185269888914543):8.824765862078145):7.071760096564121):3.4979008248606895,(((Chamaeleo_calyptratus_ZSM_801_2000:7.96477488294862,(Chamaeleo_arabicus_246129:6.190759796724241,Chamaeleo_zeilanicus_MVZ_248410:6.190759796724241):1.77401508622438):5.718455853089668,(Chamaeleo_chamaeleon_fused:10.12722000631247,(Chamaeleo_calcaricarenis_241362:7.966290091683183,Chamaeleo_africanus_MVZ_238898:7.966290091683183):2.160929914629288):3.556010729725818):5.886866454015456,Chamaeleo_monachus_236483:19.570097190053744):3.009599482363754):7.029686199974165):9.462870889225389,Chamaeleo_namaquensis_ECU_5863:39.072253761617056):8.422293860092111):0.832902758230837):1.5170808412117864):2.3167394503968524,(((Rieppoleon_brevicaudatus_Ri4:24.69496687685004,(Rieppoleon_brachyurus_Ri1:17.781266477356624,Rieppoleon_kerstenii_RI27:17.78126647

7356624):6.913700399493415):10.157938565982658,Archaius_tigris_Caltig2:34.85
29054428327):17.308365228715942):12.760106728275758):24.822699537520194,P
hysignathus_cocincinus_AB031990:89.74407693734459):14.428983082537755,(Lei
olepis_belliana_AF378379:93.16435749402777,(Agama_agama_GU128439:82.9310
0115609116,Uromastyx_acanthinura_FJ639598:82.93100115609116):10.233356337
936613):11.008702525854574):27.598505501047157,(Anolis_carolinensis_NC0109
72:76.18765341779165,Liolaemus_scapularis_L41447:76.18765341779165):55.5839
1210313785):11.023281172354842):5.087719309144717):5.833813031780323):12.2
00745749696722):6.02926766026755):14.124876905375658):44.70955183074895,S
phenodon_punctatus_AF534390:230.78082118029826);

11. Iverson et al. (2013)

(*Dermatemys_mawii*_M162:75.82270977536865,((((Kino_creaseri_K35:2.0882466788790452,(Kino_acutum_K33:0.064043573000788,Kino_acutum_K34:0.064043573000788):2.0242031058782572):6.2737838489816085,(Kino_herrerai_K110:0.2522070416407871,Kino_herrerai_K93:0.2522070416407871):8.109823486219867):9.938959519539722,((Kino_angustipons:7.747835316889265,Kino_dunni_K38:7.747835316889265):7.649237630231696,Kino_1_leucostomum_K64:15.39707294712096):2.903917100279415):6.974888684536722,((((Kino_baurii_K8:5.926052074663232,Kino_sub_steidachneri_k118:5.926052074663232):5.665169898837576,(Kino_flavenscens_K81:3.729096804268508,Kino_subrub_hypocrepis_K74:3.729096804268508):7.8621251692323):5.4772288668765725,((Kino_durangoense_K9:7.603210842414555,Kino_arizonense:7.603210842414555):6.307986539955806,(Kino_alamosae:10.978469003189005,((((Kino_integrum_K46:2.141974660879086,(Kino_integrum_K92:1.1121558859348823,Kino_integrum_K86:1.1121558859348823):1.0298187749442036):3.736035053857222,Kino_scorp_albogulare_K16:5.878009714736308):0.8152632411845389,((Kino_scorp_ioides_K100:5.047012213418654,Kino_scorp_cruentatum_K70:5.047012213418654):0.9209059430797168,(Kino_scorp_abaxillare_K95:5.029119000626309,Kino_oaxacae:5.029119000626309):0.9387991558720614):0.725354799422476):1.8672324384957122,(Kino_sonoriense_K116:6.018062448949294,(Kino_chimalhuaca:4.812942864889649,Kino_hirtipes_K111:4.812942864889649):1.205119584059645):2.542442945467265):2.417963608772446):2.9327283791813556):3.1572534580070197):4.605416845123713,((Stern_carinatus_K1:9.860539319284783,Stern_odoratus_K78:9.860539319284783):3.4637191234106126,(Stern_minor_K11:4.855589929201344,(Stern_depressus_M125:0.8051677802416606,Stern_m_peltifer_K13:0.8051677802416606):4.050422148959683):8.468668513494052):8.349609242805698):3.6020110464360044):28.612511229561626,(Claudius_angustus_M126:18.839485823131852,(Stauro_triporcatus_K45:2.563716724496558,Stauro_salvinii_K32:2.563716724496558):16.275769098635294):35.04890413836687):21.934319813869926);

12. Beckman and Witt (2015)

((Scanaria:4.126799522153124,(((Sspinus:1.1696467898776233,(Satriceps:0.3521759295535178,Spinus:0.3521759295535178):0.817470860324105):0.35205523580318365,Sdominicensis:1.5217020256808043):0.44834328637415477,((Scucullatus:0.5498324572482183,(Sbarbatus:0.4740297238718776,(((Smagellanicus_centralBolivia:0.03809720250589609,Satratus:0.03809720250589614):0.02635703674852225,((Smagellanicus_Cusco:0.024234268876150752,Smagellanicus_MadreDeDios:0.024234268876150742):0.023801356302132863,((Smagellanicus_Huancavelica:0.01456416497770595,Ssiemiradzki:0.014564164977705926):0.0170830298922888,((Smagellanicus_Lima:0.016252332480925093,(Smagellanicus_Ancash:0.005640220453381647,Smagellanicus_Piura:0.005640220453381649):0.010612112027543428):0.006067436641707585,Scrassirostris:0.022319769122632675):0.009327425747362068):0.016388430308288862):0.01641861407613475):0.147323649541506,Suropygialis:0.2117778887959244):0.16573939908371796,(Smagellanicus_alleni:0.28713144641323257,Sxanthogastrus:0.28713144641323235):0.09038584146640999):0.0490134596938937,(Solivacea:0.2915360677416864,Sspinescens:0.29153606774168633):0.1349946798318497):0.047498976298341655):0.0758027333763403):0.48226436574553877,Snotatus:1.0320968229937586):0.937948489061206):0.9067546588705897,((Stristis:1.5435754171913532,Spsaltria:1.5435754171913532):0.28763380636460467,Slawrencei:1.8312092235559587):1.0455907473695938):1.249995512275737):10.311003286511589,Cvespertinus:14.437802808664706);

13. Buckner et al. (2015)

(((((Saguinus_niger:1.420259,Saguinus_midias:1.420259):1.412692,(Saguinus_bicolor:1.143978,Saguinus_martinsi:1.143978):1.688974):2.035021,((Saguinus_oedipus:1.194695,Saguinus_geoffroyi:1.194695):1.907403,Saguinus_leucopus:3.102099):1.765873):1.192253,(((Saguinus_inustus:1.288661,Saguinus_mystax:1.288661):0.722595,Saguinus_labiatu:2.011256):1.314316,Saguinus_imperator:3.325573):2.734652):3.073886,(((Saguinus_fuscicollis_leucogenys:0.659133,Saguinus_fuscicollis_fuscicollis:0.659133):0.527913,Saguinus_fuscicollis_nigrifrons:1.187046):0.237302,(Saguinus_fuscicollis_weddelli:0.60778,Saguinus_melanoleucus_melanoleucus:0.60778):0.816568):0.755929,((Saguinus_tripartitus:1.43133,Saguinus_fuscicollis_lagonotus:1.43133):0.384133,Saguinus_fuscicollis_illigeri:1.815463):0.364813):0.449564,(Saguinus_nigricollis_nigricollis:0.38305,Saguinus_graellsii:0.38305):2.24679):6.504271):4.953268,(((((((Callithrix_mauesi:0.603782,Callithrix_sateri:0.603782):0.203,Callithrix_humeralifera:0.806782):0.465669,Callithrix_emiliae:1.27245):0.635212,Callithrix_argentata:1.907662):2.502763,Cebuella_pygmaea:4.410425):0.979383,(((Callithrix_penicillata:0.711485,Callithrix_jacchus:0.711485):0.733249,Callithrix_kuhlii:1.444734):0.266234,Callithrix_geoffroyi:1.710968):1.174353,Callithrix_aurita:2.885321):2.504487):5.788875,Callimico_goeldii:11.178683):2.19999,(((Leontopithecus_caissara:0.32685,Leontopithecus_rosalia:0.32685):0.122867,Leontopithecus_chrysopygus:0.449717):0.690664,Leontopithecus_chrysomelas:1.140381):12.238293):0.708705);

14. Martins and Melo (2016)

(((((Amegilla_asserta_GB_Australia:35.212813,Anthophora_urbana_GB_California:35.212813):25.135505,(Deltoptila_aurulentocaudata_GB_Jalisco:48.517055,(Pachymelus_peringueyi_GB_SouthAfrica:40.029599,Habropoda_laboriosa_GB_Florida:40.029599):8.487455):11.831264):39.653425,((Coelioxoides_waltheriae_GB_Argentina:7.319556,(((Ericrocis_lata_GB_Arizona:27.523208,(Mesonychium_asteria_GB_Paraguay:8.26121,Epiclopus_gayi_GB_Chile:8.26121):19.261998):23.904828,((Rhathymus_sp_GB_Trinidad:4.622015,Rhathymus_unicolor_GB_Paraguay:4.622015):11.530154,Rhathymus_Nanosp_GB_Trinidad:16.152169):35.275866):15.501927,Parepeolus_aterimus_GB_FrenchGuiana:66.929962):7.180534,(Osiris_sp_GB_Peru:59.382711,(Leiopodus_abnormis_GB_Argentina:50.518085,(Isepeolus_atripilis_GB_Chile:19.116077,Melectoides_bellus_GB_Argentina:19.116077):23.921169,Epeoloides_pilosula_GB_Connecticut:43.037245):7.480839):8.864626):14.727785):3.20906):11.697713,(((Xeromelecta_californica_GB_California:26.106804,Thyreus_delumbatus_GB_SouthAfrica:26.106804):13.027042,Zacosmia_maculata_GB_NewMexico:39.133846):4.301691,(((Nomada_maculata_GB_NewYork:37.20964,Holcopasites_arizonicus_GB_Arizona:37.20964):13.201296,Triepeolus_robustus_GB_Arizona:50.410936):6.450208,Pasites_maculatus_GB_Romania:56.861144):10.517188,Caenoprosopina_holmbergi_GB_Argentina:67.378332):14.772424):6.866513):10.984474):7.937663,(((Tetrapedia_maura_GB_Mexico:7.661133,Tetrapedia_sp_GB_Argentina:7.661133):81.895771,((Ctenoplectra_albolimbata_GB_SouthAfrica:23.984878,Ctenoplectrina_sp_GB_Nigeria:23.984878):9.228707,Ctenoplectra_bequaerti_GB_Nigeria:33.213585):56.343319):8.458535,((((Xylocopa_tabaniformis_GB_California:13.969248,(Xylocopa_fimbriata_GB_FrenchGuiana:10.337714,Xylocopa_muscaria_GB_FrenchGuiana:10.337714):3.631534):10.742561,Xylocopa_pubescens_GB_Tunisia:24.711808):5.628363,(Xylocopa_iris_GB_Turkey:19.244911,Xylocopa_violacea_GB_Turkey:19.244911):11.095259):46.643215,(((Ceratina_Simioceratina_sp_GB_South_Africa:30.95157,(Ceratina_Crewella_sp_GB_Paraguay:17.764706,Ceratina_calcarata_GB_NewYork:17.764706):13.186864):7.372491,Ceratina_cyanea_GB_CzechRepublic:38.324061):29.71887,(Braunsapis_madecassella_GB_Madagascar:45.190712,(Exoneura_bicolor_GB_Australia:29.280899,Macrogalea_elliotti_GB_Madagascar:29.280899):15.909813):22.905236):8.887438):7.434889,Manuelia_gayatina_GB_Chile:84.418275):6.681954,((Ancyloscelis_sp_GB_Paraguay:51.817467,Anthophorula_completa_GB_Arizona:51.817467):17.034521,((Ancyla_anatolica_GB_Turkey:47.684069,(Xenoglossa_angustior_GB_Arizona:16.925602,Martinapis_luteicornis_GB_Arizona:16.925602):30.758467):13.331288,((Diadasina_distincta_GB_Paraguay:26.188962,Diadasia_bituberculata_GB_California:26.188962):24.998712,(Arhysoceble_picta_GB_Paraguay:30.4653

44,Caenonomada_sp_GB_Paraguay:30.465344):20.72233):9.827683):7.83663):22.24
8241):6.915211):4.058605,(((Epicharis_xanthogastra_DZUP28421:3.745012,(Epicha
ris_picta_DZUP27449:1.03193,Epicharis_maculata_AMNH88353:1.03193):2.71308
2):27.522232,(Epicharis_analis_GB_Paraguay:23.413606,((Epicharis_dejeanii_UNB
24034:13.39064,Epicharis_zonata_DZUP28423:13.39064):8.667147,(((Epicharis_lun
ulata_AMNH178834:0.854338,Epicharis_affinis_DZUP27498_DZUP27482:0.85433
8):11.206671,((Epicharis_bicolor_UNB5102_DZUP27454:1.677092,Epicharis_umbr
acullata_DZUP28419:1.677092):6.321287,((Epicharis_aff_bova_DZUP25646:2.0146
31,Epicharis_elegans_DZUP25647:2.014631):3.847819,Epicharis_flava_DZUP2748
4_DZUP27500:5.862451):2.135929):4.062629):8.700785,(((Epicharis_minima_DZU
P28420:1.275689,Epicharis_luteocincta_DZUP28422:1.275689):6.609435,(Epicharis
_cockerelli_DZUP27456:3.494482,Epicharis_iheringi_UNB5103:3.494482):4.39064
1):7.978131,Epicharis_morio_DZUP27453:15.863254):4.89854):1.295993):1.355818
):7.853639):62.009549,(((Apis_florea_GB_Laos:21.462967,(Apis_dorsata_GB_Laos
:16.99198,Apis_cerana_GB_Japan:16.99198):4.470987):44.560161,(((Exaerete_front
alis_GB_Panama:16.921609,Aglae_caerulea_GB_Peru:16.921609):2.945319,((Eufrie
sea_surinamensis_GB_FrenchGuiana:4.183316,Eufriesea_pulchra_GB_Panama:4.18
3316):11.209329,Eulaema_meriana_GB_FrenchGuiana:15.392645):4.474283):8.301
031,(Euglossa_piliventris_GB_FrenchGuiana:7.420994,Euglossa_imperialis_GB_Pan
ama:7.420994):20.746965):37.855169):12.789641,(((Cephalotrigona_capitata_GB_C
ostaRica:10.840584,Scaptotrigona_hellwegeri_GB_Jalisco:10.840584):41.28239,(((
Axestrotigona_ferruginea_GB_SouthAfrica:12.101199,Plebeina_hildebrandti_GB_So
uthAfrica:12.101199):2.291982,Meliponula_bocandei_GB_Gabon:14.39318):12.121
9,Hypotrigona_gribodoi_GB_SouthAfrica:26.51508):21.565185,Tetragonula_carbona
ria_GB_Australia:48.080265):4.042709):14.837122,(Bombus_mendax_GB_Italy:24.
375704,(Bombus_ardens_GB_Japan:11.645221,Bombus_diversus_GB_Japan:11.645
221):12.730482):42.584393):11.852672):7.582586,((((Centris_lutea_DZUP25627:2
.621758,Centris_carolae_E96638:2.621758):2.091506,Centris_bicolor_DZUP27443:
4.713264):14.868393,((Centris_bucholzi_UNB24032:4.379298,Centris_tamarugalis_
DZUP27440:4.379298):1.811263,Centris_chilensis_DZUP27480_DZUP27439:6.190
561):13.391095):3.205299,(((Centris_pallida_BBSL531233:15.430686,Centris_hoff
manseggiae_GB_California:15.430686):3.945637,(((Centris_anomala_E95608:10.55
1767,((Centris_albiceps_DZUP25649:1.906381,Centris_agameta_DZUP25643:1.906
381):3.29855,Centris_agilis_DZUP25639:5.204931):5.346836):5.469722,(((Centris_
caesalpiniae_BBSL708632:3.749191,Centris_lanosa_Neff_31132:3.749191):3.411889
,Centris_atripes_GB_Arizona:7.16108):5.717439,((Centris_varia_DZUP27435:3.535
625,Centris_haemorrhoidalis_CR:3.535625):2.726234,((Centris_decolorata_GB_Fren
chGuiana:2.881559,Centris_aenea_UNB5104:2.881559):1.70608,Centris_spilopoda_

DZUP27502:4.587639):1.674221):6.61666):3.14297):1.653559,((Centris_cockerelli_GB_BBSL539628:5.001545,Centris_zacateca_DZUP25644:5.001545):9.08974,(Centris_nigrocaerulea_DZUP25641:8.657733,Centris_mexicana_CAS:8.657733):5.433552):3.583763):1.701275):2.30501,(((Centris_aff_neffi_CR:6.247564,Centris_nigerrima_DZUP27452:6.247564):2.660025,(Centris_klugii_DZUP27461:5.66273,(Centris_tricolor_UNB24031:2.316391,Centris_burgdorfi_DZUP27460:2.316391):3.346339):3.244859):9.576836,Centris_xanthomelaena_DZUP27451:18.484425):3.196908):1.105623):18.008068,(((Centris_moerens_UNB5109:5.024616,Centris_scopipes_DZUP27447:5.024616):4.090882,(Centris_sponsa_UNB5110:3.342269,Centris_decipiens_DZUP27473:3.342269):5.773228):17.173686,(((Centris_violacea_UNB5100:12.024144,(Centris_aeneiventris_DZUP27496:9.995464,(Centris_rhodoprocta_DZUP167753:7.613501,(((Centris_braccata_CR:0.880097,Centris_dimidiata_GB_FrenchGuiana:0.880097):3.100799,Centris_conspersa_DZUP27489:3.980895):2.771457,(Centris_dorsata_DZUP27487:3.008462,Centris_aff_dorsata_DZUP27481:3.008462):3.743891):0.861148):2.381964):2.02868):3.5655,(((Centris_gelida_DZUP25638:3.470515,Centris_sericea_DZUP25645:3.470515):5.073979,(Centris_lilacina_CR:3.034588,Centris_plumipes_DZUP27457:3.034588):5.509905):4.945837,Centris_mocsary_DZUP27442:13.490331):2.099314):1.640812,((Centris_rufohirta_CR:6.219627,Centris_xanthocnemis_UNB5083:6.219627):5.125745,Centris_chlorura_CR:11.345371):5.885085):9.058727):14.50584):4.439923,((Centris_rhodophthalma_Neff35137:13.3808,(Centris_cinerraria_AAC:5.832391,Centris_muralis_DZUP27434:5.832391):7.548408):27.403531,(((Centris_ocellaris_UNB24033:22.902011,((Centris_fuscata_DZUP27499:9.193934,Centris_similis_CR:9.193934):2.830857,Centris_longimana_FrenchGuiana:12.024791):10.87722):5.152503,((Centris_labrosa_DZUP25642:8.971655,(Centris_difformis_CR:4.751154,Centris_analis_DZUP27459:4.751154):4.220501):14.706724,(((Centris_trigonoides_UNB24030:4.868998,(Centris_vittata_DZUP27471:3.469314,Centris_tarsata_UNB5108:3.469314):1.399684):2.908869,Centris_nitida_DZUP25650:7.777866):4.89876,Centris_transversa_DZUP25651:12.676626):11.001753):4.376135):8.022529,(Centris_thelyopsis_DZUP27465:2.399624,Centris_hyptidis_DZUP27450:2.399624):33.677419):4.707288):4.450615):41.160409):6.881439):8.797251):5.865362):8.896528,((Neofidelia_profuga_GB_Chile:69.933557,Fidelia_major_GB_SouthAfrica:69.933557):24.153808,((Trichothurgus_herbsti_GB_Chile:27.407928,Lithurgus_echinocacti_GB_Arizona:27.407928):40.793219,(((Anthidiellum_notatum_GB_Arizona:25.646124,Anthidium_porterae_GB_NewMexico:25.646124):23.543005,Afroheria_hyalinus_GB_SouthAfrica:49.189129):12.159799,Pararhophites_quadratus_GB_Tunisia:61.348928):6.852219):25.886219):22.748569);

15. Day et al. (2013)

((CU88625_Malapterurustanganyikaensis:41.82224773209318,((CU81135_Atopochil
ussavorgnani:12.39553102430559,CU87530_Euchilichthysdybowskii:12.395531024
30559):16.587056554612673,(CU90429_Chiloglanissp:23.950415675031465,S068_
Chiloglanisniloticus:23.950415675031465):5.032171903886798):12.8396601531749
18):21.834648449615003,((S018_Mocholkusniloticus:48.38415025041514,(Mochoki
ellapaynei:43.755211889644166,(((SA_B339_Scflaessoei:16.272555042048957,((C
U87650_Scentralis:2.0392451728078242,D_CU94803_SspCAR:2.039245172807824
2):10.627128388387838,(((SA65194_Sgreshoffi:3.1804150343930715,A_CU91594_
SspCAR:3.1804150343930715):1.9860667580918978,CU91011_Sunicolor:5.166481
792484969):0.7540834415178601,5550_Safrofischeri:5.920565234002829):6.74580
8327192833):3.6061814808532944):9.921098781036285,((CU87469_Scontracta:17.
81403360720327,CU87539_Snigriventris:17.81403360720327):5.801723111030384,
(((CU87571_Spleurops:13.075060109535205,(((CU92914_Sschoutedeni:5.5104668
90889234,(43DRC_Ssoloni:3.1195195946321803,CU91419_Ssmiti:3.119519594632
1803):2.3909472962570533):3.924532653906489,CU91391_Salberti:9.43499954479
5723):2.354251832524966,((CU88151_Snummifer:0.6605746480235695,CU91404_
Sornatissima:0.6605746480235695):10.450939084076758,(CU92922_Snotata:9.0926
88797974336,CU88252_Scongica:9.092688797974336):2.018824934125991):0.6777
376452203612):1.285808732214516):0.7928955987164272,(((SA68675_Svanderwa
ali:0.9320675576160511,SA52277_Safthamalakalensis:0.9320675576160511):0.511
8136507952968,((SA67674_Snebulosus:0.6685725552937072,SA68779_Sleopardina
:0.6685725552937072):0.3810107226555779,(SA68679_Smacrostiga:0.4759115423
776734,SA68721_Swoosnami:0.4759115423776734):0.5736717355716117):0.39429
793046206285):7.289419273850477,B_CU91588_Ssp_CAR:8.733300482261825):3.
7083124544485955,((CU88152_Sdecora:8.498601578220452,CU91862_Slongirostri
s:8.498601578220452):3.4355348290738164,((Sbrichardi_Trade:3.00778808154018
4,282_Spardalis:3.007788081540184):3.1918992770802816,CU91002_Skatangae:6.
199687358620466):5.7344490486738025):0.5074765294161523):1.42634277154121
14):2.9475149674316476,(Sflavitaeniata_trade:13.905873330778892,(Sangilica_Tra
de:1.754219513250753,CU91394_Sangelica:1.754219513250753):12.151653817528
139):2.9095973449043875):4.453559944305518,CU92277_Stessmanni:21.26903061
9988797):2.346726098244858):2.577897104851587):3.8897501679103783,((((W08
0_Scfobesus:3.7049793271691414,CU89985_Sobesus:3.7049793271691414):3.0204
31639028125,(CU89984_Srebeli:5.40817381773153,W135_Svelifer:5.40817381773
153):1.3172371484657361):5.905287847080949,(5535_Swaterlotti:2.859964095329
7225,Stourei_trade:2.8599640953297225):9.770734717948493):2.793980657368891

2,(5546_Snigrita_LA:2.532671719987576,W008_Snigrita:2.532671719987576):12.8
9200775065953):9.360238809378707,(CU92296_Salbolineata:7.958804296284178,
CU92284_Sbatesii:7.958804296284178):16.826113983741635):5.298485710969807
) :4.5906932308141535,((W129_Socellifer:20.840686559925658,(((CU93820_Swam
iensis:1.7410937411937581,CU93819_SmaculipinnaTZ:1.7410937411937581):7.259
008444676567,((Svictoriae:6.238218853405527,((5053_Sirsacae:2.29178702087967
42,((Safilebrevis:1.0734882249328237,5145_Spetricola:1.0734882249328237):0.572
3269699167162,5100_Spolli:1.6458151948495399):0.6459718260301344):1.635011
9237262604,(CU88758_Saftanganaicae:2.180473968289469,5126_Slucipinnis:2.180
473968289469):1.7463249763164654):2.311419908799593):1.597070980317401,((5
143_Smultipuntata:3.053543846717041,CU91902_Sgrandiops:3.053543846717041):
2.017370510382726,FLM432_Sgranulosa:5.070914357099767):2.764375476623161
6):1.164812352147397):2.446144653427659,(((CU91092_Snigromaculata:1.635130
9006406858,CU94768_Sacanthomias:1.6351309006406858):1.6523051485560707,S
A25_Smelanostrictus:3.2874360491967565):6.207421442293345,(SA64838_Szambi
ensis:6.575096659361712,(SA73898_SspM:2.4237037183875287,4766_Snyasse:2.4
237037183875287):4.151392940974183):2.9197608321283894):1.951389347807882
8):4.914674634554686,W116_Sgobroni:16.36092147385267):4.479765086072987):
3.491873446401627,(((CU91408_Sclarias:1.5450608803346313,B058_Sclarius:1.54
50608803346313):12.179401096149178,(B068_Ssorex:4.7925481567570785,CU945
13_Ssorex:4.7925481567570785):8.93191381972673):5.695574594800966,((5765_S
annectens:7.321055793730835,E079_Scfeupterus:7.321055793730835):6.457660484
083647,(A068_Hmembraneous:6.489317878505055,Sbatensoda_trade:6.4893178785
05055):7.289398399309427):5.641320293470294):2.9198389482224982,(E080_Sfil
amentosa:17.31833680659056,(((5545_Sserrata_LA:9.683639206472957,(5543_Sfro
ntosus:2.983251703647298,CU94509_Scaudovittata:2.983251703647298):6.7003875
02825659):0.9078272261518485,((W173_Sschall:2.417655368009033,A042_Sschall
:2.417655368009033):0.9602143472434612,D048_Sschall:3.377869715252494):7.2
13596717372312):4.553040085743007,(5530_Sthysi:12.950319447713696,W041_S
violacea:12.950319447713696):2.1941870706541167):2.173830288222746):5.02153
87129167155):1.9926844868200106):10.34153721548249):9.081114667834392):4.6
28938360770974):7.24660702883623,CU89213_Microsynodontissp:55.6307572792
5137):8.026138902456815);