

Morrone & Escalante (2002) Geodis output for nesting level 2

Differentiating population structure from history - Geodis 2.3 beta
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Input file: C:\Documents and Settings\Anthony
Deo\Desktop\geo_in_transfer\geodis_in_level2_final
Endemic Areas Mexico 1x1 level 2

Wed Mar 16 10:48:36 EST 2005

PERMUTATION ANALYSIS OF 2-1
BASED ON 1000 RESAMPLES

PART I. PERMUTATIONAL CONTINGENCY TEST:

OBSERVED CHI-SQUARE STATISTIC = 104.7693

THE PROBABILITY OF A RANDOM CHI-SQUARE BEING GREATER THAN
OR EQUAL TO THE OBSERVED CHI-SQUARE = 1.0000

PART II. GEOGRAPHIC DISTANCE ANALYSIS:

GEOGRAPHICAL CENTERS	LATITUDE	LONGITUDE
2-1	20.5794	101.3099
0-8	20.4189	101.3436
0-9	21.0637	101.2084

CLADE 0-8 (Interior)

TYPE OF DISTANCE	DISTANCE	PROB.<=	PROB.>=
WITHIN CLADE	304.0854	0.0130	0.9870
NESTED CLADE	305.8569	0.0160	0.9840

CLADE 0-9 (Interior)

TYPE OF DISTANCE	DISTANCE	PROB.<=	PROB.>=
WITHIN CLADE	406.9437	0.9950	0.0050
NESTED CLADE	409.6367	0.9940	0.0060

NO INTERIOR/TIP CLADES EXIST IN THIS GROUP

PERMUTATION ANALYSIS OF 2-2
BASED ON 1000 RESAMPLES

PART I. PERMUTATIONAL CONTINGENCY TEST:

OBSERVED CHI-SQUARE STATISTIC = 75.9897

THE PROBABILITY OF A RANDOM CHI-SQUARE BEING GREATER THAN
OR EQUAL TO THE OBSERVED CHI-SQUARE = 1.0000

PART II. GEOGRAPHIC DISTANCE ANALYSIS:

GEOGRAPHICAL CENTERS	LATITUDE	LONGITUDE
2-2	20.9062	102.1147
0-10	21.1324	102.0764
0-11	20.6793	102.1530

CLADE 0-10 (Interior)

TYPE OF DISTANCE	DISTANCE	PROB.<=	PROB.>=
WITHIN CLADE	312.1451	0.5910	0.4090
NESTED CLADE	312.0530	0.4060	0.5940

CLADE 0-11 (Interior)

TYPE OF DISTANCE	DISTANCE	PROB.<=	PROB.>=
WITHIN CLADE	317.2873	0.6990	0.3010
NESTED CLADE	319.7834	0.5900	0.4100

NO INTERIOR/TIP CLADES EXIST IN THIS GROUP

PERMUTATION ANALYSIS OF 2-3
BASED ON 1000 RESAMPLES

PART I. PERMUTATIONAL CONTINGENCY TEST:

OBSERVED CHI-SQUARE STATISTIC = 102.4694

THE PROBABILITY OF A RANDOM CHI-SQUARE BEING GREATER THAN
OR EQUAL TO THE OBSERVED CHI-SQUARE = 1.0000

PART II. GEOGRAPHIC DISTANCE ANALYSIS:

GEOGRAPHICAL CENTERS	LATITUDE	LONGITUDE
2-3	22.3221	101.9963
0-12	22.1093	101.9240
0-13	22.4914	102.0538

CLADE 0-12 (Interior)

TYPE OF DISTANCE	DISTANCE	PROB.<=	PROB.>=
WITHIN CLADE	451.3851	0.3650	0.6350
NESTED CLADE	454.4782	0.3620	0.6380

CLADE 0-13 (Interior)

TYPE OF DISTANCE	DISTANCE	PROB.<=	PROB.>=
WITHIN CLADE	470.2495	0.6820	0.3180

NESTED CLADE 470.1306 0.6680 0.3320

NO INTERIOR/TIP CLADES EXIST IN THIS GROUP

PERMUTATION ANALYSIS OF 2-5
BASED ON 1000 RESAMPLES

PART I. PERMUTATIONAL CONTINGENCY TEST:

OBSERVED CHI-SQUARE STATISTIC = 80.5046

THE PROBABILITY OF A RANDOM CHI-SQUARE BEING GREATER THAN
OR EQUAL TO THE OBSERVED CHI-SQUARE = 1.0000

PART II. GEOGRAPHIC DISTANCE ANALYSIS:

GEOGRAPHICAL CENTERS	LATITUDE	LONGITUDE
2-5	19.5240	98.8824
0-6	19.0019	96.8488
0-7	19.9186	100.4192

CLADE 0-6 (Interior)

TYPE OF DISTANCE	DISTANCE	PROB.<=	PROB.>=
WITHIN CLADE	308.4580	0.1110	0.8890
NESTED CLADE	365.1127	0.8100	0.1900

CLADE 0-7 (Interior)

TYPE OF DISTANCE	DISTANCE	PROB.<=	PROB.>=
WITHIN CLADE	304.9361	0.0570	0.9430
NESTED CLADE	327.1954	0.2300	0.7700

NO INTERIOR/TIP CLADES EXIST IN THIS GROUP

PERMUTATION ANALYSIS OF 2-6
BASED ON 1000 RESAMPLES

PART I. PERMUTATIONAL CONTINGENCY TEST:

OBSERVED CHI-SQUARE STATISTIC = 112.1707

THE PROBABILITY OF A RANDOM CHI-SQUARE BEING GREATER THAN
OR EQUAL TO THE OBSERVED CHI-SQUARE = 1.0000

PART II. GEOGRAPHIC DISTANCE ANALYSIS:

GEOGRAPHICAL CENTERS	LATITUDE	LONGITUDE
2-6	18.5514	96.6868
0-15	18.3525	96.3409
0-16	19.4609	98.2679

CLADE 0-15 (Interior)

TYPE OF DISTANCE	DISTANCE	PROB.<=	PROB.>=
WITHIN CLADE	315.8498	0.3540	0.6460
NESTED CLADE	322.9518	0.6190	0.3810

CLADE 0-16 (Interior)

TYPE OF DISTANCE	DISTANCE	PROB.<=	PROB.>=
WITHIN CLADE	260.5570	0.0030	0.9970
NESTED CLADE	306.3407	0.2670	0.7330

NO INTERIOR/TIP CLADES EXIST IN THIS GROUP

PERMUTATION ANALYSIS OF 2-7
BASED ON 1000 RESAMPLES

PART I. PERMUTATIONAL CONTINGENCY TEST:

OBSERVED CHI-SQUARE STATISTIC = 135.8174

THE PROBABILITY OF A RANDOM CHI-SQUARE BEING GREATER THAN
OR EQUAL TO THE OBSERVED CHI-SQUARE = 1.0000

PART II. GEOGRAPHIC DISTANCE ANALYSIS:

GEOGRAPHICAL CENTERS	LATITUDE	LONGITUDE
2-7	20.0727	97.9134
0-23	20.2212	98.4405
0-24	19.8097	96.9800

CLADE 0-23 (Interior)

TYPE OF DISTANCE	DISTANCE	PROB.<=	PROB.>=
WITHIN CLADE	264.3894	0.4700	0.5300
NESTED CLADE	253.1656	0.2410	0.7590

CLADE 0-24 (Interior)

TYPE OF DISTANCE	DISTANCE	PROB.<=	PROB.>=
WITHIN CLADE	258.1357	0.4710	0.5290
NESTED CLADE	283.9679	0.7380	0.2620

NO INTERIOR/TIP CLADES EXIST IN THIS GROUP

PERMUTATION ANALYSIS OF 2-9
BASED ON 1000 RESAMPLES

PART I. PERMUTATIONAL CONTINGENCY TEST:

OBSERVED CHI-SQUARE STATISTIC = 227.2301

THE PROBABILITY OF A RANDOM CHI-SQUARE BEING GREATER THAN
OR EQUAL TO THE OBSERVED CHI-SQUARE = 1.0000

PART II. GEOGRAPHIC DISTANCE ANALYSIS:

GEOGRAPHICAL CENTERS	LATITUDE	LONGITUDE
2-9	19.4106	98.2506
0-19	19.0628	98.2502
0-20	19.6247	98.2509

CLADE 0-19 (Interior)

TYPE OF DISTANCE	DISTANCE	PROB.<=	PROB.>=
WITHIN CLADE	324.2515	0.0640	0.9360
NESTED CLADE	329.2505	0.0960	0.9040

CLADE 0-20 (Interior)

TYPE OF DISTANCE	DISTANCE	PROB.<=	PROB.>=
WITHIN CLADE	364.7311	0.8860	0.1140
NESTED CLADE	362.0125	0.8460	0.1540

NO INTERIOR/TIP CLADES EXIST IN THIS GROUP

PERMUTATION ANALYSIS OF 2-15
BASED ON 1000 RESAMPLES

PART I. PERMUTATIONAL CONTINGENCY TEST:

OBSERVED CHI-SQUARE STATISTIC = 147.3739

THE PROBABILITY OF A RANDOM CHI-SQUARE BEING GREATER THAN
OR EQUAL TO THE OBSERVED CHI-SQUARE = 1.0000

PART II. GEOGRAPHIC DISTANCE ANALYSIS:

GEOGRAPHICAL CENTERS	LATITUDE	LONGITUDE
2-15	20.3959	100.8925
0-33	20.1765	100.7859
0-34	20.6061	100.9947

CLADE 0-33 (Interior)				
TYPE OF DISTANCE	DISTANCE	PROB.<=	PROB.>=	
WITHIN CLADE	263.3567	0.4990	0.5010	
NESTED CLADE	266.1953	0.5440	0.4560	

CLADE 0-34 (Interior)				
TYPE OF DISTANCE	DISTANCE	PROB.<=	PROB.>=	
WITHIN CLADE	265.6006	0.5670	0.4330	
NESTED CLADE	262.0948	0.4420	0.5580	

NO INTERIOR/TIP CLADES EXIST IN THIS GROUP

PERMUTATION ANALYSIS OF 2-16
 BASED ON 1000 RESAMPLES

PART I. PERMUTATIONAL CONTINGENCY TEST:

OBSERVED CHI-SQUARE STATISTIC = 54.6992

THE PROBABILITY OF A RANDOM CHI-SQUARE BEING GREATER THAN
 OR EQUAL TO THE OBSERVED CHI-SQUARE = 0.9980

PART II. GEOGRAPHIC DISTANCE ANALYSIS:

GEOGRAPHICAL CENTERS	LATITUDE	LONGITUDE
2-16	19.9063	100.5443
0-36	20.2988	99.9640
0-37	19.7730	100.7413

CLADE 0-36 (Interior)				
TYPE OF DISTANCE	DISTANCE	PROB.<=	PROB.>=	
WITHIN CLADE	252.9966	0.4240	0.5760	
NESTED CLADE	268.0167	0.6250	0.3750	

CLADE 0-37 (Interior)				
TYPE OF DISTANCE	DISTANCE	PROB.<=	PROB.>=	
WITHIN CLADE	254.0904	0.2630	0.7370	
NESTED CLADE	259.4012	0.4150	0.5850	

NO INTERIOR/TIP CLADES EXIST IN THIS GROUP

PERMUTATION ANALYSIS OF 2-18
 BASED ON 1000 RESAMPLES

PART I. PERMUTATIONAL CONTINGENCY TEST:

OBSERVED CHI-SQUARE STATISTIC = 143.9130

THE PROBABILITY OF A RANDOM CHI-SQUARE BEING GREATER THAN
OR EQUAL TO THE OBSERVED CHI-SQUARE = 1.0000

PART II. GEOGRAPHIC DISTANCE ANALYSIS:

GEOGRAPHICAL CENTERS	LATITUDE	LONGITUDE
2-18	21.9810	100.9983
0-31	22.8331	102.2109
0-32	21.3493	100.0994

CLADE 0-31 (Interior)

TYPE OF DISTANCE	DISTANCE	PROB.<=	PROB.>=
WITHIN CLADE	348.1889	0.0910	0.9090
NESTED CLADE	365.0646	0.3610	0.6390

CLADE 0-32 (Interior)

TYPE OF DISTANCE	DISTANCE	PROB.<=	PROB.>=
WITHIN CLADE	347.5066	0.0680	0.9320
NESTED CLADE	371.6266	0.6110	0.3890

NO INTERIOR/TIP CLADES EXIST IN THIS GROUP

PERMUTATION ANALYSIS OF 2-19
BASED ON 1000 RESAMPLES

PART I. PERMUTATIONAL CONTINGENCY TEST:

OBSERVED CHI-SQUARE STATISTIC = 109.5498

THE PROBABILITY OF A RANDOM CHI-SQUARE BEING GREATER THAN
OR EQUAL TO THE OBSERVED CHI-SQUARE = 1.0000

PART II. GEOGRAPHIC DISTANCE ANALYSIS:

GEOGRAPHICAL CENTERS	LATITUDE	LONGITUDE
2-19	20.4587	99.4634
0-28	20.2659	99.4534
0-29	20.7028	99.4761

CLADE 0-28 (Interior)

TYPE OF DISTANCE	DISTANCE	PROB.<=	PROB.>=
WITHIN CLADE	336.2546	0.6920	0.3080
NESTED CLADE	338.6234	0.7350	0.2650

CLADE 0-29 (Interior)				
TYPE OF DISTANCE	DISTANCE	PROB.<=	PROB.>=	
WITHIN CLADE	321.1090	0.3210	0.6790	
NESTED CLADE	319.0355	0.2570	0.7430	

NO INTERIOR/TIP CLADES EXIST IN THIS GROUP

PERMUTATION ANALYSIS OF 2-20
 BASED ON 1000 RESAMPLES

PART I. PERMUTATIONAL CONTINGENCY TEST:

OBSERVED CHI-SQUARE STATISTIC = 107.2067

THE PROBABILITY OF A RANDOM CHI-SQUARE BEING GREATER THAN
 OR EQUAL TO THE OBSERVED CHI-SQUARE = 1.0000

PART II. GEOGRAPHIC DISTANCE ANALYSIS:

GEOGRAPHICAL CENTERS	LATITUDE	LONGITUDE	
2-20	20.8501	101.3619	
0-26	20.9514	101.7253	
0-27	20.7066	100.8469	

CLADE 0-26 (Interior)				
TYPE OF DISTANCE	DISTANCE	PROB.<=	PROB.>=	
WITHIN CLADE	327.3451	0.6680	0.3320	
NESTED CLADE	331.1216	0.7650	0.2350	

CLADE 0-27 (Interior)				
TYPE OF DISTANCE	DISTANCE	PROB.<=	PROB.>=	
WITHIN CLADE	308.2893	0.2110	0.7890	
NESTED CLADE	315.0114	0.2730	0.7270	

NO INTERIOR/TIP CLADES EXIST IN THIS GROUP

PERMUTATION ANALYSIS OF 2-21
 BASED ON 1000 RESAMPLES

PART I. PERMUTATIONAL CONTINGENCY TEST:

OBSERVED CHI-SQUARE STATISTIC = 30.9375

THE PROBABILITY OF A RANDOM CHI-SQUARE BEING GREATER THAN

OR EQUAL TO THE OBSERVED CHI-SQUARE = 1.0000

PART II. GEOGRAPHIC DISTANCE ANALYSIS:

GEOGRAPHICAL CENTERS	LATITUDE	LONGITUDE
2-21	20.8135	99.4091
0-5	19.6473	98.2173
0-38	22.5852	101.2196

CLADE 0-5 (Interior)

TYPE OF DISTANCE	DISTANCE	PROB.<=	PROB.>=
WITHIN CLADE	303.9467	0.3320	0.6680
NESTED CLADE	343.5333	0.6080	0.3920

CLADE 0-38 (Interior)

TYPE OF DISTANCE	DISTANCE	PROB.<=	PROB.>=
WITHIN CLADE	237.4132	0.0300	0.9700
NESTED CLADE	307.6396	0.3620	0.6380

NO INTERIOR/TIP CLADES EXIST IN THIS GROUP

PERMUTATION ANALYSIS OF 2-22
BASED ON 1000 RESAMPLES

PART I. PERMUTATIONAL CONTINGENCY TEST:

OBSERVED CHI-SQUARE STATISTIC = 183.3397

THE PROBABILITY OF A RANDOM CHI-SQUARE BEING GREATER THAN
OR EQUAL TO THE OBSERVED CHI-SQUARE = 0.0500

PART II. GEOGRAPHIC DISTANCE ANALYSIS:

GEOGRAPHICAL CENTERS	LATITUDE	LONGITUDE
2-22	24.7461	101.4409
0-39	20.5600	99.1100
0-58	19.7441	96.0707
0-165	26.6499	103.4463

CLADE 0-39 (Interior)

TYPE OF DISTANCE	DISTANCE	PROB.<=	PROB.>=
WITHIN CLADE	0.0000	0.0000	1.0000
NESTED CLADE	522.8005	0.5850	0.4150

CLADE 0-58 (Interior)

TYPE OF DISTANCE	DISTANCE	PROB.<=	PROB.>=
WITHIN CLADE	304.9978	0.0020	0.9980
NESTED CLADE	806.8385	1.0000	0.0000

CLADE 0-165 (Interior)				
TYPE OF DISTANCE	DISTANCE	PROB.<=	PROB.>=	
WITHIN CLADE	342.8082	0.0000	1.0000	
NESTED CLADE	410.8464	0.0010	0.9990	

NO INTERIOR/TIP CLADES EXIST IN THIS GROUP

PERMUTATION ANALYSIS OF 2-24
 BASED ON 1000 RESAMPLES

PART I. PERMUTATIONAL CONTINGENCY TEST:

OBSERVED CHI-SQUARE STATISTIC = 76.9968

THE PROBABILITY OF A RANDOM CHI-SQUARE BEING GREATER THAN
 OR EQUAL TO THE OBSERVED CHI-SQUARE = 1.0000

PART II. GEOGRAPHIC DISTANCE ANALYSIS:

GEOGRAPHICAL CENTERS	LATITUDE	LONGITUDE	
2-24	19.6055	95.3806	
0-46	19.7607	96.8043	
0-47	19.5200	94.5971	

CLADE 0-46 (Interior)				
TYPE OF DISTANCE	DISTANCE	PROB.<=	PROB.>=	
WITHIN CLADE	285.7381	0.3390	0.6610	
NESTED CLADE	288.5237	0.3220	0.6780	

CLADE 0-47 (Interior)				
TYPE OF DISTANCE	DISTANCE	PROB.<=	PROB.>=	
WITHIN CLADE	280.5663	0.2280	0.7720	
NESTED CLADE	303.1460	0.5810	0.4190	

NO INTERIOR/TIP CLADES EXIST IN THIS GROUP

PERMUTATION ANALYSIS OF 2-25
 BASED ON 1000 RESAMPLES

PART I. PERMUTATIONAL CONTINGENCY TEST:

OBSERVED CHI-SQUARE STATISTIC = 115.5311

THE PROBABILITY OF A RANDOM CHI-SQUARE BEING GREATER THAN

OR EQUAL TO THE OBSERVED CHI-SQUARE = 1.0000

PART II. GEOGRAPHIC DISTANCE ANALYSIS:

GEOGRAPHICAL CENTERS	LATITUDE	LONGITUDE
2-25	18.8611	94.7902
0-44	18.8432	94.7124
0-45	18.9150	95.0234

CLADE 0-44 (Interior)

TYPE OF DISTANCE	DISTANCE	PROB.<=	PROB.>=
WITHIN CLADE	362.8242	0.4750	0.5250
NESTED CLADE	361.2733	0.5130	0.4870

CLADE 0-45 (Interior)

TYPE OF DISTANCE	DISTANCE	PROB.<=	PROB.>=
WITHIN CLADE	312.4243	0.4770	0.5230
NESTED CLADE	314.8012	0.4600	0.5400

NO INTERIOR/TIP CLADES EXIST IN THIS GROUP

PERMUTATION ANALYSIS OF 2-26
BASED ON 1000 RESAMPLES

PART I. PERMUTATIONAL CONTINGENCY TEST:

OBSERVED CHI-SQUARE STATISTIC = 126.0950

THE PROBABILITY OF A RANDOM CHI-SQUARE BEING GREATER THAN
OR EQUAL TO THE OBSERVED CHI-SQUARE = 1.0000

PART II. GEOGRAPHIC DISTANCE ANALYSIS:

GEOGRAPHICAL CENTERS	LATITUDE	LONGITUDE
2-26	18.3637	94.1517
0-42	18.3206	95.2064
0-43	18.4181	92.8191

CLADE 0-42 (Interior)

TYPE OF DISTANCE	DISTANCE	PROB.<=	PROB.>=
WITHIN CLADE	320.6755	0.0280	0.9720
NESTED CLADE	322.4747	0.0170	0.9830

CLADE 0-43 (Interior)

TYPE OF DISTANCE	DISTANCE	PROB.<=	PROB.>=
WITHIN CLADE	572.5437	0.9920	0.0080
NESTED CLADE	535.1883	0.9800	0.0200

NO INTERIOR/TIP CLADES EXIST IN THIS GROUP

PERMUTATION ANALYSIS OF 2-27
BASED ON 1000 RESAMPLES

PART I. PERMUTATIONAL CONTINGENCY TEST:

OBSERVED CHI-SQUARE STATISTIC = 208.3130

THE PROBABILITY OF A RANDOM CHI-SQUARE BEING GREATER THAN
OR EQUAL TO THE OBSERVED CHI-SQUARE = 1.0000

PART II. GEOGRAPHIC DISTANCE ANALYSIS:

GEOGRAPHICAL CENTERS	LATITUDE	LONGITUDE
2-27	18.0603	93.2191
0-40	17.5443	91.4478
0-41	18.8984	96.0959

CLADE 0-40 (Interior)

TYPE OF DISTANCE	DISTANCE	PROB.<=	PROB.>=
WITHIN CLADE	557.5857	0.9090	0.0910
NESTED CLADE	517.1504	0.7460	0.2540

CLADE 0-41 (Interior)

TYPE OF DISTANCE	DISTANCE	PROB.<=	PROB.>=
WITHIN CLADE	358.3190	0.0030	0.9970
NESTED CLADE	436.6230	0.1280	0.8720

NO INTERIOR/TIP CLADES EXIST IN THIS GROUP

PERMUTATION ANALYSIS OF 2-28
BASED ON 1000 RESAMPLES

PART I. PERMUTATIONAL CONTINGENCY TEST:

OBSERVED CHI-SQUARE STATISTIC = 34.8333

THE PROBABILITY OF A RANDOM CHI-SQUARE BEING GREATER THAN
OR EQUAL TO THE OBSERVED CHI-SQUARE = 1.0000

PART II. GEOGRAPHIC DISTANCE ANALYSIS:

GEOGRAPHICAL CENTERS	LATITUDE	LONGITUDE
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2-28	21.6373	97.9997
0-55	21.7210	97.9294
0-56	21.1754	98.3872

CLADE 0-55 (Interior)

TYPE OF DISTANCE	DISTANCE	PROB.<=	PROB.>=
WITHIN CLADE	368.1140	0.7770	0.2230
NESTED CLADE	367.5966	0.6750	0.3250

CLADE 0-56 (Interior)

TYPE OF DISTANCE	DISTANCE	PROB.<=	PROB.>=
WITHIN CLADE	279.3526	0.2330	0.7670
NESTED CLADE	297.8994	0.1160	0.8840

NO INTERIOR/TIP CLADES EXIST IN THIS GROUP

PERMUTATION ANALYSIS OF 2-30
 BASED ON 1000 RESAMPLES

PART I. PERMUTATIONAL CONTINGENCY TEST:

OBSERVED CHI-SQUARE STATISTIC = 108.7054

THE PROBABILITY OF A RANDOM CHI-SQUARE BEING GREATER THAN
 OR EQUAL TO THE OBSERVED CHI-SQUARE = 1.0000

PART II. GEOGRAPHIC DISTANCE ANALYSIS:

GEOGRAPHICAL CENTERS	LATITUDE	LONGITUDE
2-30	21.8675	98.5797
0-50	22.0497	99.4391
0-51	21.7123	97.8474

CLADE 0-50 (Interior)

TYPE OF DISTANCE	DISTANCE	PROB.<=	PROB.>=
WITHIN CLADE	308.4910	0.4830	0.5170
NESTED CLADE	331.6580	0.6700	0.3300

CLADE 0-51 (Interior)

TYPE OF DISTANCE	DISTANCE	PROB.<=	PROB.>=
WITHIN CLADE	290.4840	0.2740	0.7260
NESTED CLADE	304.3067	0.3580	0.6420

NO INTERIOR/TIP CLADES EXIST IN THIS GROUP

PERMUTATION ANALYSIS OF 2-31

BASED ON 1000 RESAMPLES

PART I. PERMUTATIONAL CONTINGENCY TEST:

OBSERVED CHI-SQUARE STATISTIC = 86.1352

THE PROBABILITY OF A RANDOM CHI-SQUARE BEING GREATER THAN
OR EQUAL TO THE OBSERVED CHI-SQUARE = 1.0000

PART II. GEOGRAPHIC DISTANCE ANALYSIS:

GEOGRAPHICAL CENTERS	LATITUDE	LONGITUDE
2-31	23.3260	100.6448
0-52	23.5146	100.8856
0-53	22.6231	99.7476

CLADE 0-52 (Interior)

TYPE OF DISTANCE	DISTANCE	PROB.<=	PROB.>=
WITHIN CLADE	300.9907	0.4340	0.5660
NESTED CLADE	299.0173	0.3740	0.6260

CLADE 0-53 (Interior)

TYPE OF DISTANCE	DISTANCE	PROB.<=	PROB.>=
WITHIN CLADE	299.3175	0.4890	0.5110
NESTED CLADE	321.9240	0.6380	0.3620

NO INTERIOR/TIP CLADES EXIST IN THIS GROUP

PERMUTATION ANALYSIS OF 2-32
BASED ON 1000 RESAMPLES

PART I. PERMUTATIONAL CONTINGENCY TEST:

OBSERVED CHI-SQUARE STATISTIC = 159.3020

THE PROBABILITY OF A RANDOM CHI-SQUARE BEING GREATER THAN
OR EQUAL TO THE OBSERVED CHI-SQUARE = 1.0000

PART II. GEOGRAPHIC DISTANCE ANALYSIS:

GEOGRAPHICAL CENTERS	LATITUDE	LONGITUDE
2-32	21.3409	98.9071
0-48	21.8342	99.5373
0-49	20.1674	97.4081

CLADE 0-48 (Interior)

TYPE OF DISTANCE	DISTANCE	PROB.<=	PROB.>=
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WITHIN CLADE	347.1796	0.2550	0.7450
NESTED CLADE	351.4379	0.3850	0.6150

CLADE 0-49 (Interior)

TYPE OF DISTANCE	DISTANCE	PROB.<=	PROB.>=
WITHIN CLADE	309.1845	0.1240	0.8760
NESTED CLADE	374.3523	0.5710	0.4290

NO INTERIOR/TIP CLADES EXIST IN THIS GROUP

PERMUTATION ANALYSIS OF 2-33
 BASED ON 1000 RESAMPLES

PART I. PERMUTATIONAL CONTINGENCY TEST:

OBSERVED CHI-SQUARE STATISTIC = 19.6556

THE PROBABILITY OF A RANDOM CHI-SQUARE BEING GREATER THAN
 OR EQUAL TO THE OBSERVED CHI-SQUARE = 1.0000

PART II. GEOGRAPHIC DISTANCE ANALYSIS:

GEOGRAPHICAL CENTERS	LATITUDE	LONGITUDE
2-33	19.5070	92.0548
0-74	19.2958	91.6531
0-75	20.4773	93.9011

CLADE 0-74 (Interior)

TYPE OF DISTANCE	DISTANCE	PROB.<=	PROB.>=
WITHIN CLADE	294.8144	0.0530	0.9470
NESTED CLADE	303.3854	0.0480	0.9520

CLADE 0-75 (Interior)

TYPE OF DISTANCE	DISTANCE	PROB.<=	PROB.>=
WITHIN CLADE	428.8684	0.9710	0.0290
NESTED CLADE	468.7008	0.9780	0.0220

NO INTERIOR/TIP CLADES EXIST IN THIS GROUP

PERMUTATION ANALYSIS OF 2-35
 BASED ON 1000 RESAMPLES

PART I. PERMUTATIONAL CONTINGENCY TEST:

OBSERVED CHI-SQUARE STATISTIC = 75.7754

THE PROBABILITY OF A RANDOM CHI-SQUARE BEING GREATER THAN
OR EQUAL TO THE OBSERVED CHI-SQUARE = 1.0000

PART II. GEOGRAPHIC DISTANCE ANALYSIS:

GEOGRAPHICAL CENTERS	LATITUDE	LONGITUDE
2-35	19.4220	94.0734
0-71	19.4976	94.1581
0-72	19.3931	94.0411

CLADE 0-71 (Interior)

TYPE OF DISTANCE	DISTANCE	PROB.<=	PROB.>=
WITHIN CLADE	315.6418	0.5060	0.4940
NESTED CLADE	314.0185	0.4810	0.5190

CLADE 0-72 (Interior)

TYPE OF DISTANCE	DISTANCE	PROB.<=	PROB.>=
WITHIN CLADE	314.6144	0.4790	0.5210
NESTED CLADE	315.4849	0.5170	0.4830

NO INTERIOR/TIP CLADES EXIST IN THIS GROUP

PERMUTATION ANALYSIS OF 2-36
BASED ON 1000 RESAMPLES

PART I. PERMUTATIONAL CONTINGENCY TEST:

OBSERVED CHI-SQUARE STATISTIC = 54.9958

THE PROBABILITY OF A RANDOM CHI-SQUARE BEING GREATER THAN
OR EQUAL TO THE OBSERVED CHI-SQUARE = 1.0000

PART II. GEOGRAPHIC DISTANCE ANALYSIS:

GEOGRAPHICAL CENTERS	LATITUDE	LONGITUDE
2-36	19.3684	93.7866
0-69	19.0546	93.9707
0-70	19.9139	93.4666

CLADE 0-69 (Interior)

TYPE OF DISTANCE	DISTANCE	PROB.<=	PROB.>=
WITHIN CLADE	222.7234	0.0950	0.9050
NESTED CLADE	234.2788	0.1880	0.8120

CLADE 0-70 (Interior)

TYPE OF DISTANCE	DISTANCE	PROB.<=	PROB.>=
WITHIN CLADE	331.4240	0.8720	0.1280

NESTED CLADE 334.4561 0.8750 0.1250

NO INTERIOR/TIP CLADES EXIST IN THIS GROUP

PERMUTATION ANALYSIS OF 2-38
BASED ON 1000 RESAMPLES

PART I. PERMUTATIONAL CONTINGENCY TEST:

OBSERVED CHI-SQUARE STATISTIC = 49.5000

THE PROBABILITY OF A RANDOM CHI-SQUARE BEING GREATER THAN
OR EQUAL TO THE OBSERVED CHI-SQUARE = 1.0000

PART II. GEOGRAPHIC DISTANCE ANALYSIS:

GEOGRAPHICAL CENTERS	LATITUDE	LONGITUDE
2-38	19.3733	92.0182
0-66	19.4601	92.1942
0-67	19.2746	91.8182

CLADE 0-66 (Interior)

TYPE OF DISTANCE	DISTANCE	PROB.<=	PROB.>=
WITHIN CLADE	300.0010	0.6090	0.3910
NESTED CLADE	297.5815	0.4580	0.5420

CLADE 0-67 (Interior)

TYPE OF DISTANCE	DISTANCE	PROB.<=	PROB.>=
WITHIN CLADE	295.6476	0.6080	0.3920
NESTED CLADE	300.9689	0.5370	0.4630

NO INTERIOR/TIP CLADES EXIST IN THIS GROUP

PERMUTATION ANALYSIS OF 2-39
BASED ON 1000 RESAMPLES

PART I. PERMUTATIONAL CONTINGENCY TEST:

OBSERVED CHI-SQUARE STATISTIC = 69.9750

THE PROBABILITY OF A RANDOM CHI-SQUARE BEING GREATER THAN
OR EQUAL TO THE OBSERVED CHI-SQUARE = 1.0000

PART II. GEOGRAPHIC DISTANCE ANALYSIS:

GEOGRAPHICAL CENTERS	LATITUDE	LONGITUDE
2-39	19.4212	93.7335
0-64	19.5720	94.0191
0-65	19.2204	93.3531

CLADE 0-64 (Interior)

TYPE OF DISTANCE	DISTANCE	PROB.<=	PROB.>=
WITHIN CLADE	293.0092	0.2280	0.7720
NESTED CLADE	285.1526	0.0900	0.9100

CLADE 0-65 (Interior)

TYPE OF DISTANCE	DISTANCE	PROB.<=	PROB.>=
WITHIN CLADE	325.4998	0.8210	0.1790
NESTED CLADE	334.3735	0.9050	0.0950

NO INTERIOR/TIP CLADES EXIST IN THIS GROUP

PERMUTATION ANALYSIS OF 2-40
BASED ON 1000 RESAMPLES

PART I. PERMUTATIONAL CONTINGENCY TEST:

OBSERVED CHI-SQUARE STATISTIC = 80.9289

THE PROBABILITY OF A RANDOM CHI-SQUARE BEING GREATER THAN
OR EQUAL TO THE OBSERVED CHI-SQUARE = 1.0000

PART II. GEOGRAPHIC DISTANCE ANALYSIS:

GEOGRAPHICAL CENTERS	LATITUDE	LONGITUDE
2-40	20.0316	93.6427
0-62	19.7713	94.1006
0-63	20.1028	93.5175

CLADE 0-62 (Interior)

TYPE OF DISTANCE	DISTANCE	PROB.<=	PROB.>=
WITHIN CLADE	353.8341	0.0540	0.9460
NESTED CLADE	363.1397	0.0540	0.9460

CLADE 0-63 (Interior)

TYPE OF DISTANCE	DISTANCE	PROB.<=	PROB.>=
WITHIN CLADE	417.3699	0.8940	0.1060
NESTED CLADE	417.5909	0.8790	0.1210

NO INTERIOR/TIP CLADES EXIST IN THIS GROUP

PERMUTATION ANALYSIS OF 2-42
BASED ON 1000 RESAMPLES

PART I. PERMUTATIONAL CONTINGENCY TEST:

OBSERVED CHI-SQUARE STATISTIC = 184.2334

THE PROBABILITY OF A RANDOM CHI-SQUARE BEING GREATER THAN
OR EQUAL TO THE OBSERVED CHI-SQUARE = 1.0000

PART II. GEOGRAPHIC DISTANCE ANALYSIS:

GEOGRAPHICAL CENTERS	LATITUDE	LONGITUDE
2-42	17.9251	93.3486
0-59	17.8716	92.3219
0-60	17.9927	94.6471

CLADE 0-59 (Interior)

TYPE OF DISTANCE	DISTANCE	PROB.<=	PROB.>=
WITHIN CLADE	440.8292	0.9960	0.0040
NESTED CLADE	427.6834	0.9930	0.0070

CLADE 0-60 (Interior)

TYPE OF DISTANCE	DISTANCE	PROB.<=	PROB.>=
WITHIN CLADE	255.7009	0.0110	0.9890
NESTED CLADE	264.3447	0.0230	0.9770

NO INTERIOR/TIP CLADES EXIST IN THIS GROUP

PERMUTATION ANALYSIS OF 2-44
BASED ON 1000 RESAMPLES

PART I. PERMUTATIONAL CONTINGENCY TEST:

OBSERVED CHI-SQUARE STATISTIC = 27.0000

THE PROBABILITY OF A RANDOM CHI-SQUARE BEING GREATER THAN
OR EQUAL TO THE OBSERVED CHI-SQUARE = 0.5400

PART II. GEOGRAPHIC DISTANCE ANALYSIS:

GEOGRAPHICAL CENTERS	LATITUDE	LONGITUDE
2-44	21.4850	94.3899
0-181	26.5678	107.1123
0-163	13.5789	74.6011

CLADE 0-181 (Interior)				
TYPE OF DISTANCE	DISTANCE	PROB.<=	PROB.>=	
WITHIN CLADE	527.3262	0.0030	0.9970	
NESTED CLADE	1410.9981	0.0130	0.9870	

CLADE 0-163 (Interior)				
TYPE OF DISTANCE	DISTANCE	PROB.<=	PROB.>=	
WITHIN CLADE	294.2429	0.2680	0.7320	
NESTED CLADE	2312.0383	0.9910	0.0090	

NO INTERIOR/TIP CLADES EXIST IN THIS GROUP

PERMUTATION ANALYSIS OF 2-46
 BASED ON 1000 RESAMPLES

PART I. PERMUTATIONAL CONTINGENCY TEST:

OBSERVED CHI-SQUARE STATISTIC = 161.1092

THE PROBABILITY OF A RANDOM CHI-SQUARE BEING GREATER THAN
 OR EQUAL TO THE OBSERVED CHI-SQUARE = 0.9390

PART II. GEOGRAPHIC DISTANCE ANALYSIS:

GEOGRAPHICAL CENTERS	LATITUDE	LONGITUDE
2-46	18.3024	96.0306
0-3	17.8042	92.9400
0-15	18.3525	96.3409

CLADE 0-3 (Interior)				
TYPE OF DISTANCE	DISTANCE	PROB.<=	PROB.>=	
WITHIN CLADE	669.8786	0.9960	0.0040	
NESTED CLADE	727.2126	0.9990	0.0010	

CLADE 0-15 (Interior)				
TYPE OF DISTANCE	DISTANCE	PROB.<=	PROB.>=	
WITHIN CLADE	315.8498	0.0000	1.0000	
NESTED CLADE	314.3415	0.0000	1.0000	

NO INTERIOR/TIP CLADES EXIST IN THIS GROUP

PERMUTATION ANALYSIS OF 2-47
 BASED ON 1000 RESAMPLES

PART I. PERMUTATIONAL CONTINGENCY TEST:

OBSERVED CHI-SQUARE STATISTIC = 113.4379

THE PROBABILITY OF A RANDOM CHI-SQUARE BEING GREATER THAN
OR EQUAL TO THE OBSERVED CHI-SQUARE = 0.9660

PART II. GEOGRAPHIC DISTANCE ANALYSIS:

GEOGRAPHICAL CENTERS	LATITUDE	LONGITUDE
2-47	16.4529	87.4591
0-1	15.9770	84.5369
0-2	16.9333	90.4088

CLADE 0-1 (Interior)

TYPE OF DISTANCE	DISTANCE	PROB.<=	PROB.>=
WITHIN CLADE	1205.5508	1.0000	0.0000
NESTED CLADE	1113.5119	1.0000	0.0000

CLADE 0-2 (Interior)

TYPE OF DISTANCE	DISTANCE	PROB.<=	PROB.>=
WITHIN CLADE	354.0187	0.0470	0.9530
NESTED CLADE	566.7970	0.0610	0.9390

NO INTERIOR/TIP CLADES EXIST IN THIS GROUP

PERMUTATION ANALYSIS OF 2-49
BASED ON 1000 RESAMPLES

PART I. PERMUTATIONAL CONTINGENCY TEST:

OBSERVED CHI-SQUARE STATISTIC = 28.5987

THE PROBABILITY OF A RANDOM CHI-SQUARE BEING GREATER THAN
OR EQUAL TO THE OBSERVED CHI-SQUARE = 0.7470

PART II. GEOGRAPHIC DISTANCE ANALYSIS:

GEOGRAPHICAL CENTERS	LATITUDE	LONGITUDE
2-49	26.1064	107.7768
0-153	25.6078	106.7749
0-176	27.7993	111.1784

CLADE 0-153 (Interior)

TYPE OF DISTANCE	DISTANCE	PROB.<=	PROB.>=
WITHIN CLADE	445.7114	0.2800	0.7200
NESTED CLADE	451.3216	0.3340	0.6660

CLADE 0-176 (Interior)				
TYPE OF DISTANCE	DISTANCE	PROB.<=	PROB.>=	
WITHIN CLADE	290.6132	0.2520	0.7480	
NESTED CLADE	504.0359	0.5800	0.4200	

NO INTERIOR/TIP CLADES EXIST IN THIS GROUP

PERMUTATION ANALYSIS OF 2-50
 BASED ON 1000 RESAMPLES

PART I. PERMUTATIONAL CONTINGENCY TEST:

OBSERVED CHI-SQUARE STATISTIC = 87.8227

THE PROBABILITY OF A RANDOM CHI-SQUARE BEING GREATER THAN
 OR EQUAL TO THE OBSERVED CHI-SQUARE = 1.0000

PART II. GEOGRAPHIC DISTANCE ANALYSIS:

GEOGRAPHICAL CENTERS	LATITUDE	LONGITUDE	
2-50	24.0005	103.2021	
0-154	23.9183	103.2936	
0-155	24.1091	103.0812	

CLADE 0-154 (Interior)				
TYPE OF DISTANCE	DISTANCE	PROB.<=	PROB.>=	
WITHIN CLADE	396.1122	0.9100	0.0900	
NESTED CLADE	397.5279	0.9120	0.0880	

CLADE 0-155 (Interior)				
TYPE OF DISTANCE	DISTANCE	PROB.<=	PROB.>=	
WITHIN CLADE	319.2790	0.0430	0.9570	
NESTED CLADE	318.9616	0.0340	0.9660	

NO INTERIOR/TIP CLADES EXIST IN THIS GROUP

PERMUTATION ANALYSIS OF 2-51
 BASED ON 1000 RESAMPLES

PART I. PERMUTATIONAL CONTINGENCY TEST:

OBSERVED CHI-SQUARE STATISTIC = 53.5029

THE PROBABILITY OF A RANDOM CHI-SQUARE BEING GREATER THAN

OR EQUAL TO THE OBSERVED CHI-SQUARE = 1.0000

PART II. GEOGRAPHIC DISTANCE ANALYSIS:

GEOGRAPHICAL CENTERS	LATITUDE	LONGITUDE
2-51	26.2996	106.7323
0-139	26.8307	107.9637
0-152	26.1830	106.4621

CLADE 0-139 (Interior)

TYPE OF DISTANCE	DISTANCE	PROB.<=	PROB.>=
WITHIN CLADE	235.3922	0.0210	0.9790
NESTED CLADE	266.6386	0.0030	0.9970

CLADE 0-152 (Interior)

TYPE OF DISTANCE	DISTANCE	PROB.<=	PROB.>=
WITHIN CLADE	574.9464	0.9920	0.0080
NESTED CLADE	581.9744	1.0000	0.0000

NO INTERIOR/TIP CLADES EXIST IN THIS GROUP

PERMUTATION ANALYSIS OF 2-52
BASED ON 1000 RESAMPLES

PART I. PERMUTATIONAL CONTINGENCY TEST:

OBSERVED CHI-SQUARE STATISTIC = 40.5171

THE PROBABILITY OF A RANDOM CHI-SQUARE BEING GREATER THAN
OR EQUAL TO THE OBSERVED CHI-SQUARE = 0.9740

PART II. GEOGRAPHIC DISTANCE ANALYSIS:

GEOGRAPHICAL CENTERS	LATITUDE	LONGITUDE
2-52	28.4306	113.7360
0-141	28.1266	113.8186
0-142	29.6443	113.4061

CLADE 0-141 (Interior)

TYPE OF DISTANCE	DISTANCE	PROB.<=	PROB.>=
WITHIN CLADE	247.4973	0.4020	0.5980
NESTED CLADE	246.6004	0.2940	0.7060

CLADE 0-142 (Interior)

TYPE OF DISTANCE	DISTANCE	PROB.<=	PROB.>=
WITHIN CLADE	277.8217	0.5820	0.4180
NESTED CLADE	304.3036	0.7400	0.2600

NO INTERIOR/TIP CLADES EXIST IN THIS GROUP

PERMUTATION ANALYSIS OF 2-53
BASED ON 1000 RESAMPLES

PART I. PERMUTATIONAL CONTINGENCY TEST:

OBSERVED CHI-SQUARE STATISTIC = 45.6657

THE PROBABILITY OF A RANDOM CHI-SQUARE BEING GREATER THAN
OR EQUAL TO THE OBSERVED CHI-SQUARE = 1.0000

PART II. GEOGRAPHIC DISTANCE ANALYSIS:

GEOGRAPHICAL CENTERS	LATITUDE	LONGITUDE
2-53	25.7345	109.3087
0-140	25.4756	109.2299
0-143	26.5274	109.5500

CLADE 0-140 (Interior)

TYPE OF DISTANCE	DISTANCE	PROB.<=	PROB.>=
WITHIN CLADE	431.3906	0.2680	0.7320
NESTED CLADE	433.8207	0.2520	0.7480

CLADE 0-143 (Interior)

TYPE OF DISTANCE	DISTANCE	PROB.<=	PROB.>=
WITHIN CLADE	475.7634	0.7290	0.2710
NESTED CLADE	495.5242	0.6850	0.3150

NO INTERIOR/TIP CLADES EXIST IN THIS GROUP

PERMUTATION ANALYSIS OF 2-54
BASED ON 1000 RESAMPLES

PART I. PERMUTATIONAL CONTINGENCY TEST:

OBSERVED CHI-SQUARE STATISTIC = 25.5527

THE PROBABILITY OF A RANDOM CHI-SQUARE BEING GREATER THAN
OR EQUAL TO THE OBSERVED CHI-SQUARE = 1.0000

PART II. GEOGRAPHIC DISTANCE ANALYSIS:

GEOGRAPHICAL CENTERS	LATITUDE	LONGITUDE
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2-54	25.6164	110.6860
0-145	25.4603	110.9092
0-160	26.0350	110.0876

CLADE 0-145 (Interior)

TYPE OF DISTANCE	DISTANCE	PROB.<=	PROB.>=
WITHIN CLADE	380.2719	0.5290	0.4710
NESTED CLADE	388.0883	0.5350	0.4650

CLADE 0-160 (Interior)

TYPE OF DISTANCE	DISTANCE	PROB.<=	PROB.>=
WITHIN CLADE	388.0490	0.5490	0.4510
NESTED CLADE	380.5709	0.4470	0.5530

NO INTERIOR/TIP CLADES EXIST IN THIS GROUP

PERMUTATION ANALYSIS OF 2-55
BASED ON 1000 RESAMPLES

PART I. PERMUTATIONAL CONTINGENCY TEST:

OBSERVED CHI-SQUARE STATISTIC = 62.7843

THE PROBABILITY OF A RANDOM CHI-SQUARE BEING GREATER THAN
OR EQUAL TO THE OBSERVED CHI-SQUARE = 1.0000

PART II. GEOGRAPHIC DISTANCE ANALYSIS:

GEOGRAPHICAL CENTERS	LATITUDE	LONGITUDE
2-55	28.2414	111.0008
0-146	27.9859	111.8803
0-149	28.3929	110.4792

CLADE 0-146 (Interior)

TYPE OF DISTANCE	DISTANCE	PROB.<=	PROB.>=
WITHIN CLADE	334.9462	0.1370	0.8630
NESTED CLADE	374.4611	0.2440	0.7560

CLADE 0-149 (Interior)

TYPE OF DISTANCE	DISTANCE	PROB.<=	PROB.>=
WITHIN CLADE	411.5114	0.7780	0.2220
NESTED CLADE	407.5309	0.7970	0.2030

NO INTERIOR/TIP CLADES EXIST IN THIS GROUP

PERMUTATION ANALYSIS OF 2-56

BASED ON 1000 RESAMPLES

PART I. PERMUTATIONAL CONTINGENCY TEST:

OBSERVED CHI-SQUARE STATISTIC = 50.9559

THE PROBABILITY OF A RANDOM CHI-SQUARE BEING GREATER THAN
OR EQUAL TO THE OBSERVED CHI-SQUARE = 1.0000

PART II. GEOGRAPHIC DISTANCE ANALYSIS:

GEOGRAPHICAL CENTERS	LATITUDE	LONGITUDE
2-56	29.4189	112.9990
0-147	28.4871	111.8899
0-148	30.0270	113.7229

CLADE 0-147 (Interior)

TYPE OF DISTANCE	DISTANCE	PROB.<=	PROB.>=
WITHIN CLADE	377.4904	0.8420	0.1580
NESTED CLADE	342.2702	0.5840	0.4160

CLADE 0-148 (Interior)

TYPE OF DISTANCE	DISTANCE	PROB.<=	PROB.>=
WITHIN CLADE	290.6728	0.1150	0.8850
NESTED CLADE	331.2900	0.4560	0.5440

NO INTERIOR/TIP CLADES EXIST IN THIS GROUP

PERMUTATION ANALYSIS OF 2-57
BASED ON 1000 RESAMPLES

PART I. PERMUTATIONAL CONTINGENCY TEST:

OBSERVED CHI-SQUARE STATISTIC = 49.3311

THE PROBABILITY OF A RANDOM CHI-SQUARE BEING GREATER THAN
OR EQUAL TO THE OBSERVED CHI-SQUARE = 1.0000

PART II. GEOGRAPHIC DISTANCE ANALYSIS:

GEOGRAPHICAL CENTERS	LATITUDE	LONGITUDE
2-57	29.7119	113.2667
0-144	29.5834	113.2889
0-151	29.7535	113.2595

CLADE 0-144 (Interior)

TYPE OF DISTANCE	DISTANCE	PROB.<=	PROB.>=
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WITHIN CLADE	337.2924	0.1740	0.8260
NESTED CLADE	336.3532	0.0450	0.9550

CLADE 0-151 (Interior)

TYPE OF DISTANCE	DISTANCE	PROB.<=	PROB.>=
WITHIN CLADE	391.1253	0.8250	0.1750
NESTED CLADE	391.5874	0.9100	0.0900

NO INTERIOR/TIP CLADES EXIST IN THIS GROUP

PERMUTATION ANALYSIS OF 2-58
 BASED ON 1000 RESAMPLES

PART I. PERMUTATIONAL CONTINGENCY TEST:

OBSERVED CHI-SQUARE STATISTIC = 28.9270

THE PROBABILITY OF A RANDOM CHI-SQUARE BEING GREATER THAN
 OR EQUAL TO THE OBSERVED CHI-SQUARE = 1.0000

PART II. GEOGRAPHIC DISTANCE ANALYSIS:

GEOGRAPHICAL CENTERS	LATITUDE	LONGITUDE
2-58	27.4864	110.7536
0-144	27.8347	111.4404
0-151	27.2064	110.2016

CLADE 0-144 (Interior)

TYPE OF DISTANCE	DISTANCE	PROB.<=	PROB.>=
WITHIN CLADE	371.5988	0.4160	0.5840
NESTED CLADE	408.6728	0.8250	0.1750

CLADE 0-151 (Interior)

TYPE OF DISTANCE	DISTANCE	PROB.<=	PROB.>=
WITHIN CLADE	367.6525	0.3950	0.6050
NESTED CLADE	374.0833	0.2240	0.7760

NO INTERIOR/TIP CLADES EXIST IN THIS GROUP

PERMUTATION ANALYSIS OF 2-59
 BASED ON 1000 RESAMPLES

PART I. PERMUTATIONAL CONTINGENCY TEST:

OBSERVED CHI-SQUARE STATISTIC = 1110.5009

THE PROBABILITY OF A RANDOM CHI-SQUARE BEING GREATER THAN
OR EQUAL TO THE OBSERVED CHI-SQUARE = 1.0000

PART II. GEOGRAPHIC DISTANCE ANALYSIS:

GEOGRAPHICAL CENTERS	LATITUDE	LONGITUDE
2-59	25.6468	103.4376
0-182	24.6467	102.0293
0-168	26.4756	104.6674
0-180	26.0656	103.8499
0-167	25.6842	102.8349
0-166	25.1234	103.0204
0-170	26.3066	104.5774
0-171	25.3279	103.0775
0-124	26.0812	103.7406
0-118	26.1914	104.6826

CLADE 0-182 (Interior)

TYPE OF DISTANCE	DISTANCE	PROB.<=	PROB.>=
WITHIN CLADE	280.0828	0.3840	0.6160
NESTED CLADE	304.0483	0.5480	0.4520

CLADE 0-168 (Interior)

TYPE OF DISTANCE	DISTANCE	PROB.<=	PROB.>=
WITHIN CLADE	264.0246	0.1200	0.8800
NESTED CLADE	290.3019	0.3210	0.6790

CLADE 0-180 (Interior)

TYPE OF DISTANCE	DISTANCE	PROB.<=	PROB.>=
WITHIN CLADE	318.0374	0.7270	0.2730
NESTED CLADE	314.4534	0.6210	0.3790

CLADE 0-167 (Interior)

TYPE OF DISTANCE	DISTANCE	PROB.<=	PROB.>=
WITHIN CLADE	237.2843	0.0020	0.9980
NESTED CLADE	235.6852	0.0020	0.9980

CLADE 0-166 (Interior)

TYPE OF DISTANCE	DISTANCE	PROB.<=	PROB.>=
WITHIN CLADE	478.8907	1.0000	0.0000
NESTED CLADE	478.6467	0.9990	0.0010

CLADE 0-170 (Interior)

TYPE OF DISTANCE	DISTANCE	PROB.<=	PROB.>=
WITHIN CLADE	255.7339	0.2260	0.7740
NESTED CLADE	273.7973	0.3120	0.6880

CLADE 0-171 (Interior)

TYPE OF DISTANCE	DISTANCE	PROB.<=	PROB.>=
WITHIN CLADE	366.3292	0.7790	0.2210
NESTED CLADE	366.3859	0.7570	0.2430

CLADE 0-124 (Interior)

TYPE OF DISTANCE	DISTANCE	PROB.<=	PROB.>=
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WITHIN CLADE	90.9149	0.0070	0.9930
NESTED CLADE	116.5112	0.0110	0.9890

CLADE 0-118 (Interior)

TYPE OF DISTANCE	DISTANCE	PROB.<=	PROB.>=
WITHIN CLADE	255.2676	0.1730	0.8270
NESTED CLADE	270.7586	0.2460	0.7540

NO INTERIOR/TIP CLADES EXIST IN THIS GROUP

PERMUTATION ANALYSIS OF 2-64
BASED ON 1000 RESAMPLES

PART I. PERMUTATIONAL CONTINGENCY TEST:

OBSERVED CHI-SQUARE STATISTIC = 32.5353

THE PROBABILITY OF A RANDOM CHI-SQUARE BEING GREATER THAN
OR EQUAL TO THE OBSERVED CHI-SQUARE = 1.0000

PART II. GEOGRAPHIC DISTANCE ANALYSIS:

GEOGRAPHICAL CENTERS	LATITUDE	LONGITUDE
2-64	25.6992	104.2516
0-116	25.7206	104.2136
0-117	25.6646	104.3132

CLADE 0-116 (Interior)

TYPE OF DISTANCE	DISTANCE	PROB.<=	PROB.>=
WITHIN CLADE	238.3867	0.9980	0.0020
NESTED CLADE	238.5928	0.9970	0.0030

CLADE 0-117 (Interior)

TYPE OF DISTANCE	DISTANCE	PROB.<=	PROB.>=
WITHIN CLADE	151.6419	0.0050	0.9950
NESTED CLADE	151.6925	0.0030	0.9970

NO INTERIOR/TIP CLADES EXIST IN THIS GROUP

PERMUTATION ANALYSIS OF 2-65
BASED ON 1000 RESAMPLES

PART I. PERMUTATIONAL CONTINGENCY TEST:

OBSERVED CHI-SQUARE STATISTIC = 84.6989

THE PROBABILITY OF A RANDOM CHI-SQUARE BEING GREATER THAN
OR EQUAL TO THE OBSERVED CHI-SQUARE = 0.9980

PART II. GEOGRAPHIC DISTANCE ANALYSIS:

GEOGRAPHICAL CENTERS	LATITUDE	LONGITUDE
2-65	25.1753	104.6554
0-115	26.2387	105.1845
0-169	24.8508	104.4940

CLADE 0-115 (Interior)

TYPE OF DISTANCE	DISTANCE	PROB.<=	PROB.>=
WITHIN CLADE	238.7207	0.0980	0.9020
NESTED CLADE	267.0809	0.1830	0.8170

CLADE 0-169 (Interior)

TYPE OF DISTANCE	DISTANCE	PROB.<=	PROB.>=
WITHIN CLADE	298.9211	0.6610	0.3390
NESTED CLADE	303.0345	0.7190	0.2810

NO INTERIOR/TIP CLADES EXIST IN THIS GROUP

PERMUTATION ANALYSIS OF 2-66
BASED ON 1000 RESAMPLES

PART I. PERMUTATIONAL CONTINGENCY TEST:

OBSERVED CHI-SQUARE STATISTIC = 46.2088

THE PROBABILITY OF A RANDOM CHI-SQUARE BEING GREATER THAN
OR EQUAL TO THE OBSERVED CHI-SQUARE = 1.0000

PART II. GEOGRAPHIC DISTANCE ANALYSIS:

GEOGRAPHICAL CENTERS	LATITUDE	LONGITUDE
2-66	26.6448	105.2589
0-113	26.6127	105.1711
0-114	26.6932	105.3917

CLADE 0-113 (Interior)

TYPE OF DISTANCE	DISTANCE	PROB.<=	PROB.>=
WITHIN CLADE	280.4553	0.9100	0.0900
NESTED CLADE	279.0760	0.8740	0.1260

CLADE 0-114 (Interior)

TYPE OF DISTANCE	DISTANCE	PROB.<=	PROB.>=
WITHIN CLADE	246.0508	0.1350	0.8650

NESTED CLADE 246.9742 0.1020 0.8980

NO INTERIOR/TIP CLADES EXIST IN THIS GROUP

PERMUTATION ANALYSIS OF 2-68
BASED ON 1000 RESAMPLES

PART I. PERMUTATIONAL CONTINGENCY TEST:

OBSERVED CHI-SQUARE STATISTIC = 38.9075

THE PROBABILITY OF A RANDOM CHI-SQUARE BEING GREATER THAN
OR EQUAL TO THE OBSERVED CHI-SQUARE = 1.0000

PART II. GEOGRAPHIC DISTANCE ANALYSIS:

GEOGRAPHICAL CENTERS	LATITUDE	LONGITUDE
2-68	27.6633	105.7088
0-108	28.1518	106.2367
0-109	26.8851	104.8679

CLADE 0-108 (Interior)

TYPE OF DISTANCE	DISTANCE	PROB.<=	PROB.>=
WITHIN CLADE	303.6780	0.5060	0.4940
NESTED CLADE	327.1101	0.8710	0.1290

CLADE 0-109 (Interior)

TYPE OF DISTANCE	DISTANCE	PROB.<=	PROB.>=
WITHIN CLADE	287.5944	0.1660	0.8340
NESTED CLADE	287.4068	0.0830	0.9170

NO INTERIOR/TIP CLADES EXIST IN THIS GROUP

PERMUTATION ANALYSIS OF 2-69
BASED ON 1000 RESAMPLES

PART I. PERMUTATIONAL CONTINGENCY TEST:

OBSERVED CHI-SQUARE STATISTIC = 90.3348

THE PROBABILITY OF A RANDOM CHI-SQUARE BEING GREATER THAN
OR EQUAL TO THE OBSERVED CHI-SQUARE = 1.0000

PART II. GEOGRAPHIC DISTANCE ANALYSIS:

GEOGRAPHICAL CENTERS	LATITUDE	LONGITUDE
2-69	25.0068	104.0801
0-106	25.6086	105.0501
0-107	24.6692	103.5358

CLADE 0-106 (Interior)

TYPE OF DISTANCE	DISTANCE	PROB.<=	PROB.>=
WITHIN CLADE	336.7324	0.0350	0.9650
NESTED CLADE	356.6255	0.0750	0.9250

CLADE 0-107 (Interior)

TYPE OF DISTANCE	DISTANCE	PROB.<=	PROB.>=
WITHIN CLADE	429.8833	0.9890	0.0110
NESTED CLADE	423.2926	0.9760	0.0240

NO INTERIOR/TIP CLADES EXIST IN THIS GROUP

PERMUTATION ANALYSIS OF 2-70
BASED ON 1000 RESAMPLES

PART I. PERMUTATIONAL CONTINGENCY TEST:

OBSERVED CHI-SQUARE STATISTIC = 52.2228

THE PROBABILITY OF A RANDOM CHI-SQUARE BEING GREATER THAN
OR EQUAL TO THE OBSERVED CHI-SQUARE = 1.0000

PART II. GEOGRAPHIC DISTANCE ANALYSIS:

GEOGRAPHICAL CENTERS	LATITUDE	LONGITUDE
2-70	26.7705	105.1857
0-111	26.7643	105.0381
0-112	26.7911	105.6756

CLADE 0-111 (Interior)

TYPE OF DISTANCE	DISTANCE	PROB.<=	PROB.>=
WITHIN CLADE	219.9984	0.1400	0.8600
NESTED CLADE	218.3953	0.0690	0.9310

CLADE 0-112 (Interior)

TYPE OF DISTANCE	DISTANCE	PROB.<=	PROB.>=
WITHIN CLADE	277.1398	0.9380	0.0620
NESTED CLADE	284.2000	0.9600	0.0400

NO INTERIOR/TIP CLADES EXIST IN THIS GROUP

PERMUTATION ANALYSIS OF 2-71
BASED ON 1000 RESAMPLES

PART I. PERMUTATIONAL CONTINGENCY TEST:

OBSERVED CHI-SQUARE STATISTIC = 51.6078

THE PROBABILITY OF A RANDOM CHI-SQUARE BEING GREATER THAN
OR EQUAL TO THE OBSERVED CHI-SQUARE = 1.0000

PART II. GEOGRAPHIC DISTANCE ANALYSIS:

GEOGRAPHICAL CENTERS	LATITUDE	LONGITUDE
2-71	24.4725	102.8682
0-95	24.2168	102.4287
0-96	25.2892	104.2720

CLADE 0-95 (Interior)

TYPE OF DISTANCE	DISTANCE	PROB.<=	PROB.>=
WITHIN CLADE	274.4369	0.3070	0.6930
NESTED CLADE	278.3634	0.3800	0.6200

CLADE 0-96 (Interior)

TYPE OF DISTANCE	DISTANCE	PROB.<=	PROB.>=
WITHIN CLADE	268.1661	0.4350	0.5650
NESTED CLADE	292.7569	0.6500	0.3500

NO INTERIOR/TIP CLADES EXIST IN THIS GROUP

PERMUTATION ANALYSIS OF 2-72
BASED ON 1000 RESAMPLES

PART I. PERMUTATIONAL CONTINGENCY TEST:

OBSERVED CHI-SQUARE STATISTIC = 94.9355

THE PROBABILITY OF A RANDOM CHI-SQUARE BEING GREATER THAN
OR EQUAL TO THE OBSERVED CHI-SQUARE = 1.0000

PART II. GEOGRAPHIC DISTANCE ANALYSIS:

GEOGRAPHICAL CENTERS	LATITUDE	LONGITUDE
2-72	23.2410	102.1765
0-87	23.9508	103.3409
0-92	22.5079	100.9738

CLADE 0-87 (Interior)				
TYPE OF DISTANCE	DISTANCE	PROB.<=	PROB.>=	
WITHIN CLADE	289.6982	0.0070	0.9930	
NESTED CLADE	320.2602	0.1680	0.8320	

CLADE 0-92 (Interior)				
TYPE OF DISTANCE	DISTANCE	PROB.<=	PROB.>=	
WITHIN CLADE	348.4329	0.6820	0.3180	
NESTED CLADE	359.2335	0.8230	0.1770	

NO INTERIOR/TIP CLADES EXIST IN THIS GROUP

PERMUTATION ANALYSIS OF 2-73
 BASED ON 1000 RESAMPLES

PART I. PERMUTATIONAL CONTINGENCY TEST:

OBSERVED CHI-SQUARE STATISTIC = 64.1834

THE PROBABILITY OF A RANDOM CHI-SQUARE BEING GREATER THAN
 OR EQUAL TO THE OBSERVED CHI-SQUARE = 1.0000

PART II. GEOGRAPHIC DISTANCE ANALYSIS:

GEOGRAPHICAL CENTERS	LATITUDE	LONGITUDE
2-73	24.8561	103.6685
0-88	24.7992	103.3551
0-91	24.8944	103.8791

CLADE 0-88 (Interior)				
TYPE OF DISTANCE	DISTANCE	PROB.<=	PROB.>=	
WITHIN CLADE	254.8648	0.0830	0.9170	
NESTED CLADE	260.4410	0.0960	0.9040	

CLADE 0-91 (Interior)				
TYPE OF DISTANCE	DISTANCE	PROB.<=	PROB.>=	
WITHIN CLADE	294.6040	0.8490	0.1510	
NESTED CLADE	298.4069	0.8790	0.1210	

NO INTERIOR/TIP CLADES EXIST IN THIS GROUP

PERMUTATION ANALYSIS OF 2-74
 BASED ON 1000 RESAMPLES

PART I. PERMUTATIONAL CONTINGENCY TEST:

OBSERVED CHI-SQUARE STATISTIC = 88.2212

THE PROBABILITY OF A RANDOM CHI-SQUARE BEING GREATER THAN
OR EQUAL TO THE OBSERVED CHI-SQUARE = 1.0000

PART II. GEOGRAPHIC DISTANCE ANALYSIS:

GEOGRAPHICAL CENTERS	LATITUDE	LONGITUDE
2-74	24.8887	102.0054
0-89	24.6913	101.8935
0-90	25.5907	102.4033

CLADE 0-89 (Interior)

TYPE OF DISTANCE	DISTANCE	PROB.<=	PROB.>=
WITHIN CLADE	281.8890	0.4750	0.5250
NESTED CLADE	282.5901	0.4870	0.5130

CLADE 0-90 (Interior)

TYPE OF DISTANCE	DISTANCE	PROB.<=	PROB.>=
WITHIN CLADE	269.5201	0.4160	0.5840
NESTED CLADE	281.4332	0.5110	0.4890

NO INTERIOR/TIP CLADES EXIST IN THIS GROUP

PERMUTATION ANALYSIS OF 2-76
BASED ON 1000 RESAMPLES

PART I. PERMUTATIONAL CONTINGENCY TEST:

OBSERVED CHI-SQUARE STATISTIC = 65.8636

THE PROBABILITY OF A RANDOM CHI-SQUARE BEING GREATER THAN
OR EQUAL TO THE OBSERVED CHI-SQUARE = 1.0000

PART II. GEOGRAPHIC DISTANCE ANALYSIS:

GEOGRAPHICAL CENTERS	LATITUDE	LONGITUDE
2-76	23.6471	103.1362
0-83	23.4691	103.1250
0-84	24.4505	103.1867

CLADE 0-83 (Interior)

TYPE OF DISTANCE	DISTANCE	PROB.<=	PROB.>=
WITHIN CLADE	255.2164	0.5960	0.4040
NESTED CLADE	257.8150	0.6710	0.3290

CLADE 0-84 (Interior)				
TYPE OF DISTANCE	DISTANCE	PROB.<=	PROB.>=	
WITHIN CLADE	217.0348	0.1370	0.8630	
NESTED CLADE	232.7673	0.2460	0.7540	

NO INTERIOR/TIP CLADES EXIST IN THIS GROUP

PERMUTATION ANALYSIS OF 2-78
 BASED ON 1000 RESAMPLES

PART I. PERMUTATIONAL CONTINGENCY TEST:

OBSERVED CHI-SQUARE STATISTIC = 102.7588

THE PROBABILITY OF A RANDOM CHI-SQUARE BEING GREATER THAN
 OR EQUAL TO THE OBSERVED CHI-SQUARE = 1.0000

PART II. GEOGRAPHIC DISTANCE ANALYSIS:

GEOGRAPHICAL CENTERS	LATITUDE	LONGITUDE	
2-78	23.1121	103.1404	
0-80	23.2690	103.2173	
0-81	22.8752	103.0243	

CLADE 0-80 (Interior)				
TYPE OF DISTANCE	DISTANCE	PROB.<=	PROB.>=	
WITHIN CLADE	323.8404	0.1540	0.8460	
NESTED CLADE	325.1935	0.1320	0.8680	

CLADE 0-81 (Interior)				
TYPE OF DISTANCE	DISTANCE	PROB.<=	PROB.>=	
WITHIN CLADE	390.1998	0.8500	0.1500	
NESTED CLADE	387.5862	0.8510	0.1490	

NO INTERIOR/TIP CLADES EXIST IN THIS GROUP

PERMUTATION ANALYSIS OF 2-79
 BASED ON 1000 RESAMPLES

PART I. PERMUTATIONAL CONTINGENCY TEST:

OBSERVED CHI-SQUARE STATISTIC = 118.2146

THE PROBABILITY OF A RANDOM CHI-SQUARE BEING GREATER THAN

OR EQUAL TO THE OBSERVED CHI-SQUARE = 1.0000

PART II. GEOGRAPHIC DISTANCE ANALYSIS:

GEOGRAPHICAL CENTERS	LATITUDE	LONGITUDE
2-79	22.5117	102.1616
0-78	22.4590	102.0326
0-79	22.7077	102.6408

CLADE 0-78 (Interior)

TYPE OF DISTANCE	DISTANCE	PROB.<=	PROB.>=
WITHIN CLADE	321.0658	0.7870	0.2130
NESTED CLADE	321.0697	0.7740	0.2260

CLADE 0-79 (Interior)

TYPE OF DISTANCE	DISTANCE	PROB.<=	PROB.>=
WITHIN CLADE	285.2273	0.0900	0.9100
NESTED CLADE	293.2158	0.1380	0.8620

NO INTERIOR/TIP CLADES EXIST IN THIS GROUP

PERMUTATION ANALYSIS OF 2-80
BASED ON 1000 RESAMPLES

PART I. PERMUTATIONAL CONTINGENCY TEST:

OBSERVED CHI-SQUARE STATISTIC = 24.5833

THE PROBABILITY OF A RANDOM CHI-SQUARE BEING GREATER THAN
OR EQUAL TO THE OBSERVED CHI-SQUARE = 1.0000

PART II. GEOGRAPHIC DISTANCE ANALYSIS:

GEOGRAPHICAL CENTERS	LATITUDE	LONGITUDE
2-80	29.2926	111.6766
0-137	28.1188	107.5428
0-138	30.0166	114.2265

CLADE 0-137 (Interior)

TYPE OF DISTANCE	DISTANCE	PROB.<=	PROB.>=
WITHIN CLADE	308.5690	0.0040	0.9960
NESTED CLADE	459.9137	0.5120	0.4880

CLADE 0-138 (Interior)

TYPE OF DISTANCE	DISTANCE	PROB.<=	PROB.>=
WITHIN CLADE	312.8930	0.0700	0.9300
NESTED CLADE	462.6415	0.4800	0.5200

NO INTERIOR/TIP CLADES EXIST IN THIS GROUP

PERMUTATION ANALYSIS OF 2-81
BASED ON 1000 RESAMPLES

PART I. PERMUTATIONAL CONTINGENCY TEST:

OBSERVED CHI-SQUARE STATISTIC = 31.8762

THE PROBABILITY OF A RANDOM CHI-SQUARE BEING GREATER THAN
OR EQUAL TO THE OBSERVED CHI-SQUARE = 1.0000

PART II. GEOGRAPHIC DISTANCE ANALYSIS:

GEOGRAPHICAL CENTERS	LATITUDE	LONGITUDE
2-81	28.7193	110.1930
0-135	29.3851	111.2545
0-136	27.1184	107.6407

CLADE 0-135 (Interior)

TYPE OF DISTANCE	DISTANCE	PROB.<=	PROB.>=
WITHIN CLADE	268.9956	0.0160	0.9840
NESTED CLADE	334.8822	0.0890	0.9110

CLADE 0-136 (Interior)

TYPE OF DISTANCE	DISTANCE	PROB.<=	PROB.>=
WITHIN CLADE	407.9665	0.8530	0.1470
NESTED CLADE	442.1151	0.9550	0.0450

NO INTERIOR/TIP CLADES EXIST IN THIS GROUP

PERMUTATION ANALYSIS OF 2-82
BASED ON 1000 RESAMPLES

PART I. PERMUTATIONAL CONTINGENCY TEST:

OBSERVED CHI-SQUARE STATISTIC = 59.0608

THE PROBABILITY OF A RANDOM CHI-SQUARE BEING GREATER THAN
OR EQUAL TO THE OBSERVED CHI-SQUARE = 1.0000

PART II. GEOGRAPHIC DISTANCE ANALYSIS:

GEOGRAPHICAL CENTERS	LATITUDE	LONGITUDE
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2-82	27.4671	108.4472
0-133	27.2149	108.0221
0-134	28.0650	109.4546

CLADE 0-133 (Interior)

TYPE OF DISTANCE	DISTANCE	PROB.<=	PROB.>=
WITHIN CLADE	380.2284	0.4160	0.5840
NESTED CLADE	378.3461	0.3470	0.6530

CLADE 0-134 (Interior)

TYPE OF DISTANCE	DISTANCE	PROB.<=	PROB.>=
WITHIN CLADE	375.4354	0.4440	0.5560
NESTED CLADE	401.5222	0.6270	0.3730

NO INTERIOR/TIP CLADES EXIST IN THIS GROUP

PERMUTATION ANALYSIS OF 2-83
BASED ON 1000 RESAMPLES

PART I. PERMUTATIONAL CONTINGENCY TEST:

OBSERVED CHI-SQUARE STATISTIC = 33.2787

THE PROBABILITY OF A RANDOM CHI-SQUARE BEING GREATER THAN
OR EQUAL TO THE OBSERVED CHI-SQUARE = 1.0000

PART II. GEOGRAPHIC DISTANCE ANALYSIS:

GEOGRAPHICAL CENTERS	LATITUDE	LONGITUDE
2-83	28.2743	108.1217
0-131	27.8917	107.2271
0-132	28.7810	109.3062

CLADE 0-131 (Interior)

TYPE OF DISTANCE	DISTANCE	PROB.<=	PROB.>=
WITHIN CLADE	387.8553	0.8110	0.1890
NESTED CLADE	383.7466	0.7440	0.2560

CLADE 0-132 (Interior)

TYPE OF DISTANCE	DISTANCE	PROB.<=	PROB.>=
WITHIN CLADE	312.2484	0.0860	0.9140
NESTED CLADE	360.7736	0.2870	0.7130

NO INTERIOR/TIP CLADES EXIST IN THIS GROUP

PERMUTATION ANALYSIS OF 2-84

BASED ON 1000 RESAMPLES

PART I. PERMUTATIONAL CONTINGENCY TEST:

OBSERVED CHI-SQUARE STATISTIC = 59.6781

THE PROBABILITY OF A RANDOM CHI-SQUARE BEING GREATER THAN
OR EQUAL TO THE OBSERVED CHI-SQUARE = 1.0000

PART II. GEOGRAPHIC DISTANCE ANALYSIS:

GEOGRAPHICAL CENTERS	LATITUDE	LONGITUDE
2-84	27.2286	107.3548
0-129	27.0297	107.3789
0-130	27.5195	107.3194

CLADE 0-129 (Interior)

TYPE OF DISTANCE	DISTANCE	PROB.<=	PROB.>=
WITHIN CLADE	428.2177	0.6960	0.3040
NESTED CLADE	427.2267	0.6230	0.3770

CLADE 0-130 (Interior)

TYPE OF DISTANCE	DISTANCE	PROB.<=	PROB.>=
WITHIN CLADE	404.8069	0.3620	0.6380
NESTED CLADE	410.9103	0.3620	0.6380

NO INTERIOR/TIP CLADES EXIST IN THIS GROUP

PERMUTATION ANALYSIS OF 2-85
BASED ON 1000 RESAMPLES

PART I. PERMUTATIONAL CONTINGENCY TEST:

OBSERVED CHI-SQUARE STATISTIC = 100.3750

THE PROBABILITY OF A RANDOM CHI-SQUARE BEING GREATER THAN
OR EQUAL TO THE OBSERVED CHI-SQUARE = 1.0000

PART II. GEOGRAPHIC DISTANCE ANALYSIS:

GEOGRAPHICAL CENTERS	LATITUDE	LONGITUDE
2-85	24.9918	105.6002
0-125	24.0392	104.3577
0-128	25.8694	106.7448

CLADE 0-125 (Interior)

TYPE OF DISTANCE	DISTANCE	PROB.<=	PROB.>=
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WITHIN CLADE	444.4769	0.3790	0.6210
NESTED CLADE	445.1106	0.2750	0.7250

CLADE 0-128 (Interior)

TYPE OF DISTANCE	DISTANCE	PROB.<=	PROB.>=
WITHIN CLADE	425.2250	0.2540	0.7460
NESTED CLADE	462.6224	0.6600	0.3400

NO INTERIOR/TIP CLADES EXIST IN THIS GROUP

PERMUTATION ANALYSIS OF 2-86
 BASED ON 1000 RESAMPLES

PART I. PERMUTATIONAL CONTINGENCY TEST:

OBSERVED CHI-SQUARE STATISTIC = 124.9669

THE PROBABILITY OF A RANDOM CHI-SQUARE BEING GREATER THAN
 OR EQUAL TO THE OBSERVED CHI-SQUARE = 1.0000

PART II. GEOGRAPHIC DISTANCE ANALYSIS:

GEOGRAPHICAL CENTERS	LATITUDE	LONGITUDE
2-86	25.7031	105.9928
0-126	24.9983	105.0387
0-127	27.0297	107.7887

CLADE 0-126 (Interior)

TYPE OF DISTANCE	DISTANCE	PROB.<=	PROB.>=
WITHIN CLADE	409.4153	0.0230	0.9770
NESTED CLADE	412.5506	0.0220	0.9780

CLADE 0-127 (Interior)

TYPE OF DISTANCE	DISTANCE	PROB.<=	PROB.>=
WITHIN CLADE	495.9057	0.8710	0.1290
NESTED CLADE	534.5204	0.9700	0.0300

NO INTERIOR/TIP CLADES EXIST IN THIS GROUP

PERMUTATION ANALYSIS OF 2-100
 BASED ON 1000 RESAMPLES

PART I. PERMUTATIONAL CONTINGENCY TEST:

OBSERVED CHI-SQUARE STATISTIC = 56.1612

THE PROBABILITY OF A RANDOM CHI-SQUARE BEING GREATER THAN
OR EQUAL TO THE OBSERVED CHI-SQUARE = 0.9970

PART II. GEOGRAPHIC DISTANCE ANALYSIS:

GEOGRAPHICAL CENTERS	LATITUDE	LONGITUDE
2-100	24.7857	106.6311
0-164	24.8873	106.7942
0-178	27.1766	111.0540
0-179	20.6046	99.2850

CLADE 0-164 (Interior)

TYPE OF DISTANCE	DISTANCE	PROB.<=	PROB.>=
WITHIN CLADE	517.1821	0.1080	0.8920
NESTED CLADE	519.3187	0.0850	0.9150

CLADE 0-178 (Interior)

TYPE OF DISTANCE	DISTANCE	PROB.<=	PROB.>=
WITHIN CLADE	280.3936	0.5180	0.4820
NESTED CLADE	589.7851	0.5270	0.4730

CLADE 0-179 (Interior)

TYPE OF DISTANCE	DISTANCE	PROB.<=	PROB.>=
WITHIN CLADE	267.7504	0.3620	0.6390
NESTED CLADE	890.4515	0.9940	0.0070

NO INTERIOR/TIP CLADES EXIST IN THIS GROUP

PERMUTATION ANALYSIS OF 2-101
BASED ON 1000 RESAMPLES

PART I. PERMUTATIONAL CONTINGENCY TEST:

OBSERVED CHI-SQUARE STATISTIC = 164.4403

THE PROBABILITY OF A RANDOM CHI-SQUARE BEING GREATER THAN
OR EQUAL TO THE OBSERVED CHI-SQUARE = 1.0000

PART II. GEOGRAPHIC DISTANCE ANALYSIS:

GEOGRAPHICAL CENTERS	LATITUDE	LONGITUDE
2-101	25.6678	103.9046
0-172	25.2645	103.0993
0-173	25.9257	104.2337
0-174	25.3855	104.0395

CLADE 0-172 (Interior)

TYPE OF DISTANCE	DISTANCE	PROB.<=	PROB.>=
WITHIN CLADE	338.6700	0.9320	0.0680
NESTED CLADE	355.9755	0.9740	0.0260
CLADE 0-173 (Interior)			
TYPE OF DISTANCE	DISTANCE	PROB.<=	PROB.>=
WITHIN CLADE	276.9478	0.0730	0.9270
NESTED CLADE	277.8081	0.0660	0.9340
CLADE 0-174 (Interior)			
TYPE OF DISTANCE	DISTANCE	PROB.<=	PROB.>=
WITHIN CLADE	285.2276	0.4010	0.5990
NESTED CLADE	281.8110	0.2890	0.7110

NO INTERIOR/TIP CLADES EXIST IN THIS GROUP

** ANALYSIS FINISHED **
 It took 102.1250 seconds.