

Nickrent et al.—American Journal of Botany 2019– Appendix S5.

NEXUS file of 10 morphological characters relating to inflorescences and plant sexuality for all 163 genera in Santalales.

#NEXUS

[Mesquite version 3.5 (build 888)]

BEGIN TAXA;

TITLE Taxa;

DIMENSIONS NTAX=146;

TAXLABELS

BrachynemaRamiflorum ErythraliumScandens HeisteriaDensifrons
MabureaTrinervis DiogoaZenkeri EngomegomaGordonii ScorodocarpusBorneensis
StrombosiaPustulata StrombosiopsisTetrandra TetrastylidiumPeruvianum
CoulaEdulis MinquartiaGuianensis OchanostachysAmentacea CurupiraTefeensis
MalaniaOleifera XimeniaAmericana DulaciaCandida OlaxScandens
PtychopetalumPetiolum AnacolosaPapuana AptandraTubicina
CathedraAcuminata ChaunochitonKappleri HarmandiaMekongensis
HondurodendronUrceolatum OngokeaGore PhanerodiscusCapuronii
OctoknemaSpecies MisodendrumPunctulatum ArjonaTuberosa
QuinchamaliumChilense SchoepfiaSchreberi NuytsiaFloribunda
AtkinsoniaLigustrina GaiadendronPunctatum AlepisFlavida
AmylotheaDuthiana DecaisninaTriflora ElytrantheAlbida
LepeostegeresLancifolius LepidariaForbesii LoxantheraSpeciosa
LysianaFilifolia MacrosolenCochinchinensis PeraxillaTetrapetala
TupeiaAntarctica DesmariaMutabilis NotantheraHeterophylla
LigariaCuneifolia TristerixCorymbosus AetanthusNodosus
CladocoleaGracilis DendropemonCaribaeus OryctanthusOccidentalis
PassoviaPyrifolia PsittacanthusCalyculatus StruthanthusWoodsonii
TripodanthusAcutifolius IleostylusMicranthus MuellerinaEucalyptoides
CecarriaObtusifolia LoranthusEuropaeus AmyemaGlabra BaratanthusAxanthus
BenthaminaAlyxifolia DactyliophoraNovaeGuineae DiplatiaFurcata
HelicanthesElastica SogeriantheSessiliflora ScurrulaParasitica
TaxillusChinensis DendrophthoeCurvata HelixantheraCylindrica
TolypanthusInvolucratus EmelianthePanganensis ErianthemumDregei
GlobimetulaDinklagei MoquiniellaRubra OliverellaRubroviridis
PhragmantheraCrassicaulis SeptulinaGlaucia SpragueanellaRhamnifolia
ActinanthellaMenyharthii AgelanthusSansibarensis BakerellaSpecies
BerhautiaSenegalensis EnglerinaRamulosa OedinaPendans OncellaAmbigua
OncocalyxSulfureus PlicosepalusSagittiflorus SocratinaBemariensis
TapinanthusConstrictiflorus VanwykiaRemota AgonandraMacrocarpa
AnthobolusLeptomerioides CansjeraLeptostachya ChampereiaManillana
LepionurusSylvestris MelienthaSuavis OpiliaAmentacea
PentarhopalopiliumMarquesii RhopalopiliumPallens UrobotryaSiamensis
ComandraUmbellata GeocaulonLividum BuckleyaDistichophylla
OsyridicarpusSchimperianus ThesiumRamosum AcanthosyrisAsipapote
CervantesiaTomentosa JodinaRhombifolia OkoubakaAubrevillei
PilgerinaMadagascariensis PyrulariaPubera ScleropyrumPentandrum
StaufferiaCapuronii MidaSalicifolia NanodeaMuscosa AntidaphneViscoidea
ColpoosCompressum EubrachionAmbiguum ExocarposSparteus
LepidocerasChilense MyoschilosOblongum NestroniaUmbellula
OmphacomeriaAcerba OsyrisAlba RhoiacarpusCapensis SantalumPaniculatum
AmphorogyneCelastroides ChoretrumPauciflorum DaenikeraCorallina

DendromyzaLedermannii DendrotropheVarians DufrenoyaSphaerocarpa
 LeptomeriaAphylla PhacellariaRigidula SpirogardneraRubescens
 ArceuthobiumOxycedri DendrophthoraSquamigera GinalloaArnottiana
 KorthalsellaLatissima NotothixosSubaureus PhoradendronLeucarpum
 ViscumAlbum

;

END;

BEGIN CHARACTERS;

TITLE Character_Matrix;

DIMENSIONS NCHAR=10;

FORMAT DATATYPE = STANDARD GAP = - MISSING = ? SYMBOLS = " 0 1 2 3

4 5 6 7 8";

CHARSTATELABELS

1 Trios / absent present,

2 Inflorescence_position / axillary terminal,

3 inflorescence_form / fasciculate racemose spicate cymose

paniculate umbellate capitulate glomerate unifloral,

4 Conflorescence / absent present,

5 Dichasia / absent present,

6 Triads / absent present,

7 Bract/bracteole_fidelity' / absent present,

8 Bract/bracteole_persistence' / persistent caducous

accrescent,

9 Plant_sexuality / synoecious monoecious dioecious

polygamous,

10 Flower_sex / bisexual unisexual ;

MATRIX

BrachynemaRamiflorum 0000000000

ErythropalumScandens 103010100(0 1)

HeisteriaDensifrons 000000{0 1}000

MabureaTrinervis 0000001000

DiogoaZenkeri 00(0 1)0001000

EngomegomaGordonii 0000001000

ScorodocarpusBorneensis 00(1 3)1001100

StrombosiaPustulata 00(0 3)0001000

StrombosiopsisTetrandra 00(0 1 2)0001000

TetrastylidiumPeruvianum 0000001000

CoulaEdulis 0010001000

MinquartiaGuianensis 0010001000

OchanostachysAmentacea 0010001000

CurupiraTefeensis 0050001100

MalaniaOleifera 005000??00

XimeniaAmericana 0(0 1)5000{0 1}0{0 2}(0 1)

DulaciaCandida 00(1 4)0001100

OlaxScandens 00(1 4)0001100

PtychopetalumPetiolatum 0010001100

AnacolosaPapuan 00(0 3)0001000

AptandraTubicina 0(0 1)400011(0 2)(0 1)

CathedraAcuminata 0000000200

ChaunochitonKappleri 0(0 1)40001000

HarmandiaMekongensis 0010001011

HondurodendronUrceolatum	00(1 3)1001021
OngokeaGore	0040001000
PhanerodiscusCapuronii	00(0 7)0001000
OctoknemaSpecies	00(1 2)0001021
MisodendrumPunctulatum	0(0 1)(1 2 7)00010(1 2)1
ArjonaTuberosa	0120001000
QuinchamaliumChilense	01(2 6)0001000
SchoepfiaSchreberi	00(1 2)0001000
NuytsiaFloribunda	11(1 3)101103(0 1)
AtkinsoniaLigustrina	0010001000
GaiadendronPunctatum	10(1 3)101{0 1}000
AlepisFlavida	0010001000
AmylothecaDuthiana	10(1 3)1011000
DecaisninaTriflora	10(1 3)1011000
ElytrantheAlbida	0010001000
LepeostegeresLancifolius	1061011000
LepidariaForbesii	0060001000
LoxantheraSpeciosa	1011011000
LysianaFilifolia	0050001000
MacrosolenCochinchinensis	00(1 2)0001000
PeraxillaTetrapetala	0(0 1)20001100
TupeiaAntarctica	11(1 3)1010?21
DesmariaMutabilis	11(3 5)1011000
NotantheraHeterophylla	1(0 1)(1 3)1011000
LigariaCuneifolia	0080001000
TristerixCorymbosus	0(0 1)10001000
AetanthusNoduosus	00(3 5)0001000
CladocoleaGracilis	1(0 1)(1 2 6)10110(0 2)(0 1)
DendropemonCaribaeus	00(1 2 5)0001000
OryctanthusOccidentalis	0(0 1)20001000
PassoviaPyrifolia	1(0 1)(1 2)10110(0 2)(0 1)
PsittacanthusCalyculatus	1(0 1)(1 3 5)1011000
StruthanthusWoodsonii	10(1 2)1011{0 1}21
TripodanthusAcutifolius	11(1 3)1011000
IleostylusMicranthus	10(1 3)1011000
MuellerinaEucalyptoides	11(1 3)1011000
CecarriaObtusifolia	0050001000
LoranthusEuropaeus	00200010(0 2)(0 1)
AmyemaGlabra	10(5 6 8)0011000
BaratranthusAxanthus	00600010(0 2)(0 1)
BenthaminaAlyxifolia	0050001000
DactyliophoraNovaeGuineae	1050011000
DiplatiaFurcata	1060011000
HelicanthesElastica	0080001000
SogeriantheSessiliflora	0080001000
ScurrulaParasitica	0(0 1)(1 5)0001000
TaxillusChinensis	00(1 5)0001000
DendrophthoeCurvata	00(1 2)0001000
HelixantheraCylindrica	00(1 2)0001000
TolypanthusInvolucratus	0060001000
EmelianthePanganensis	0050001000
ErianthemumDregei	0(0 1)(1 2 6)0001000
GlobimetulaDinklagei	0050001000
MoquiniellaRubra	0(0 1)50001000

OliverellaRubroviridis	0050001000
PhragmantheraCrassicaulis	0050001000
SeptulinaGlauca	0050001000
SpragueanellaRhamnifolia	0050001000
ActinanthellaMenyharthii	0050001000
AgelanthusSansibarensis	0(0 1)(5 6)0001000
BakerellaSpecies	0050001000
BerhautiaSenegalensis	0050001000
EnglerinaRamulosa	0050001000
OedinaPendans	00(1 2)0001000
OncellaAmbigua	0010001000
OncocalyxSulfureus	0050001000
PlicosepalusSagittiflorus	0(0 1)50001000
SocratinaBemarivensis	1(0 1)50011000
TapinanthusConstrictiflorus	0050001000
VanwykiaRemota	0050001000
AgonandraMacrocarpa	1(0 1)(1 3)1011021
AnthobolusLeptomerioides	00(1 5)0001021
CansjeraLeptostachya	0020001000
ChampereiaManillana	004000{0 1}03(0 1)
LepionurusSylvestris	?0(1 3)10?1100
MelienthaSuavis	0040001020
OpiliaAmentacea	0011001100
PentarhopalopiliaMarquesii	0050001000
RhopalopiliaPallens	00(1 5)0001000
UrobotryaSiamensis	00(1 3)100{0 1}000
ComandraUmbellata	1140101000
GeocaulonLividum	003000113(0 1)
BuckleyaDistichophylla	1(0 1)(3 5 8)0101021
OsyridicarposSchimperianus	00(1 3)0001100
ThesiumRamosum	1(0 1)(1 3)1(0 1)010(0 2)(0 1)
AcanthosyrisAsipapote	00(2 3)1001100
CervantesiaTomentosa	0(0 1)(1 3)1001000
JodinaRhombifolia	0070001000
OkoubakaAubrevillei	?040?010{0 1}(0 1)
PilgerinaMadagascariensis	0(0 1)10001100
PyrulariaPubera	0(0 1)(1 3)10010{2 3}(0 1)
ScleropyrumPentandrum	00200011{2 3}(0 1)
StaufferiaCapuronii	00(3 4)100112(0 1)
MidaSalicifolia	0010001121
NanodeaMuscosa	0050001000
AntidaphneViscoidea	00(1 2)000{0 1}1(1 2)1
ColpoonCompressum	0(0 1)40001{1 2}00
EubrachionAmbiguum	0020001{0 1}11
ExocarposSparteus	0(0 1)(1 2 8)00010(0 3)(0 1)
LepidocerasChilense	00(1 2 8)00010(1 2)1
MyoschilosOblongum	0020001000
NestroniaUmbellula	00(5 8)000102(0 1)
OmphacomeriaAcerba	0(0 1)(2 8)0001021
OsyrisAlba	00300011(2 3)(0 1)
RhoiacarposCapensis	0(0 1)(3 4)0001000
SantalumPaniculatum	0(0 1)40001000
AmphorogyneCelastroides	00(2 4)0001100
ChoretrumPauciflorum	00(3 8)0001000

DaenikeraCorallina	0140001000
DendromyzaLedermannii	00(7 8)00010(1 2)1
DendrotropheVarians	0(0 1)(1 4 5 8)00011(0 1 2)(0 1)
DufrenoyaSphaerocarpa	00500010(2 3)1
LeptomeriaAphylla	0(0 1)10001100
PhacellariaRigidula	0(0 1)(2 8)000{0 1}0(0 1 2 3)(0 1)
SpirogardneraRubescens	01(2 7)0001100
ArceuthobiumOxycedri	0(0 1)20001021
DendrophthoraSquamigera	0(0 1)200010(1 2)1
GinalloaArnottiana	0(0 1)20001011
KorthalsellaLatissima	0020001011
NotothixosSubaureus	01(2 3)0001011
PhoradendronLeucarpum	0(0 1)200010(1 2)1
ViscumAlbum	0(0 1)200010(1 2)1

;

END;

BEGIN ASSUMPTIONS;

OPTIONS DEFTYPE = unord PolyTcount = MINSTEPS;

TYPESET * UNTITLED = unord: 1- 10;

END;

BEGIN TREES;

Title SantBayesianTree;

ID 016369ea37935;

LINK Taxa = Taxa;

TRANSLATE

[0]	1 BrachynemaRamiflorum,
[1]	2 ErythropalumScandens,
[2]	3 HeisteriaDensifrons,
[3]	4 MabureaTrinervis,
[4]	5 DiogoaZenkeri,
[5]	6 EngomegomaGordonii,
[6]	7 ScorodocarpusBorneensis,
[7]	8 StrombosiaPustulata,
[8]	9 StrombosiopsisTetrandra,
[9]	10 TetrastylidiumPeruvianum,
[10]	11 CoulaEdulis,
[11]	12 MinquartiaGuianensis,
[12]	13 OchanostachysAmentacea,
[13]	14 CurupiraTefeensis,
[14]	15 MalaniaOleifera,
[15]	16 XimeniaAmericana,
[16]	17 DulaciaCandida,
[17]	18 OlaxScandens,
[18]	19 PtychopetalumPetiolatum,
[19]	20 AnacolosaPapuaana,
[20]	21 AptandraTubicina,
[21]	22 CathedraAcuminata,
[22]	23 ChaunochitonKappleri,
[23]	24 HarmandiaMekongensis,
[24]	25 HondurodendronUrceolatum,

[25]	26 OngokeaGore,
[26]	27 PhanerodiscusCapuronii,
[27]	28 OctoknemaSpecies,
[28]	29 MisodendrumPunctulatum,
[29]	30 ArjonaTuberosa,
[30]	31 QuinchamaliumChilense,
[31]	32 SchoepfiaSchreberi,
[32]	33 NuytsiaFloribunda,
[33]	34 AtkinsoniaLigustrina,
[34]	35 GaiadendronPunctatum,
[35]	36 AlepisFlavida,
[36]	37 AmylothecaDuthiana,
[37]	38 DecaisninaTriflora,
[38]	39 ElytrantheAlbida,
[39]	40 LepeostegeresLancifolius,
[40]	41 LepidariaForbesii,
[41]	42 LoxantheraSpeciosa,
[42]	43 LysianaFilifolia,
[43]	44 MacrosolenCochinchinensis,
[44]	45 PeraxillaTetrapetala,
[45]	46 TupeiaAntarctica,
[46]	47 DesmariaMutabilis,
[47]	48 NotantheraHeterophylla,
[48]	49 LigariaCuneifolia,
[49]	50 TristerixCorymbosus,
[50]	51 AetanthusNoduosus,
[51]	52 CladocoleaGracilis,
[52]	53 DendropemonCaribaeus,
[53]	54 OryctanthusOccidentalis,
[54]	55 PassoviaPyrifolia,
[55]	56 PsittacanthusCalyculatus,
[56]	57 StruthanthusWoodsonii,
[57]	58 TripodanthusAcutifolius,
[58]	59 IleostylusMicranthus,
[59]	60 MuellerinaEucalyptoides,
[60]	61 CecarriaObtusifolia,
[61]	62 LoranthusEuropaeus,
[62]	63 AmyemaGlabra,
[63]	64 BaratranthusAxanthus,
[64]	65 BenthaminaAlyxifolia,
[65]	66 DactyliophoraNovaeGuineae,
[66]	67 DiplatiaFurcata,
[67]	68 HelicanthesElastica,
[68]	69 SogeriantheSessiliflora,
[69]	70 ScurrulaParasitica,
[70]	71 TaxillusChinensis,
[71]	72 DendrophthoeCurvata,
[72]	73 HelixantheraCylindrica,
[73]	74 TolypanthusInvolucratus,
[74]	75 EmelianthePanganensis,
[75]	76 ErianthemumDregei,
[76]	77 GlobimetulaDinklagei,
[77]	78 MoquiniellaRubra,
[78]	79 OliverellaRubroviridis,

[79]	80	PhragmantheraCrassicaulis,
[80]	81	SeptulinaGlauca,
[81]	82	SpragueanellaRhamnifolia,
[82]	83	ActinanthellaMenyharthii,
[83]	84	AgelanthusSansibarensis,
[84]	85	BakerellaSpecies,
[85]	86	BerhautiaSenegalensis,
[86]	87	EnglerinaRamulosa,
[87]	88	OedinaPendans,
[88]	89	OncellaAmbigua,
[89]	90	OncocalyxSulfureus,
[90]	91	PlicosepalusSagittiflorus,
[91]	92	SocratinaBemarivensis,
[92]	93	TapinanthusConstrictiflorus,
[93]	94	VanwykiaRemota,
[94]	95	AgonandraMacrocarpa,
[95]	96	AnthobolusLeptomerioides,
[96]	97	CansjeraLeptostachya,
[97]	98	ChampereiaManillana,
[98]	99	LepionurusSylvestris,
[99]	100	MelienthaSuavis,
[100]	101	OpiliaAmentacea,
[101]	102	PentarhopalopiliaMarquesii,
[102]	103	RhopalopiliaPallens,
[103]	104	UrobotryaSiamensis,
[104]	105	ComandraUmbellata,
[105]	106	GeocaulonLividum,
[106]	107	BuckleyaDistichophylla,
[107]	108	OsyridicarposSchimperianus,
[108]	109	ThesiumRamosum,
[109]	110	AcanthosyrisAsipapote,
[110]	111	CervantesiaTomentosa,
[111]	112	JodinaRhombifolia,
[112]	113	OkoubakaAubrevillei,
[113]	114	PilgerinaMadagascariensis,
[114]	115	PyrulariaPubera,
[115]	116	ScleropyrumPentandrum,
[116]	117	StaufferiaCapuronii,
[117]	118	MidaSalicifolia,
[118]	119	NanodeaMuscosa,
[119]	120	AntidaphneViscoidea,
[120]	121	ColpoonCompressum,
[121]	122	EubrachionAmbiguum,
[122]	123	ExocarposSparteus,
[123]	124	LepidocerasChilense,
[124]	125	MyoschilosOblongum,
[125]	126	NestroniaUmbellula,
[126]	127	OmphacomeriaAcerba,
[127]	128	OsyrisAlba,
[128]	129	RhoiacarposCapensis,
[129]	130	SantalumPaniculatum,
[130]	131	AmphorogyneCelastroides,
[131]	132	ChoretrumPauciflorum,
[132]	133	DaenikeraCorallina,

```

[133]          134 DendromyzaLedermannii,
[134]          135 DendrotropheVarians,
[135]          136 DufrenoyaSphaerocarpa,
[136]          137 LeptomeriaAphylla,
[137]          138 PhacellariaRigidula,
[138]          139 SpirogardneraRubescens,
[139]          140 ArceuthobiumOxycedri,
[140]          141 DendrophthoraSquamigera,
[141]          142 GinalloaArnottiana,
[142]          143 KorthalsellaLatissima,
[143]          144 NotothixosSubaureus,
[144]          145 PhoradendronLeucarpum,
[145]          146 ViscumAlbum;

```

```

      TREE UNTITLED =
      (((((((((((((140,144),146),((141,145),(142,143))),((131,133),((132,(137,
139)),((134,135),(136,138))))) , (118,119)),(((120,(122,124)),125),(((121
,129),126),128),130)),(123,127))),(((110,111),112),(((113,116,117),114),
115)),((107,(108,109)),(105,106))),((((((97,104),(101,(102,103))),99),(9
8,100)),96),95)),((((((((((((((83,(84,(89,90))),86,(87,93))),88),(92,
94)),(((75,77),((76,82),79)),78),(80,81))),85,91)),72,74)),70,71)),6
4,73)),((((63,67),66),65),69),68)),59,60)),61,62)),(((51,56),(52,57),
(53,54),55)),58),(49,48,50)),((36,45),((37,42),((38,40),((39,41),44))),
43)),(47,46))),34),35),33),((30,31),32),29))),28),((((20,27),22),(((2
1,26),24),25),23)),((17,18),19)),((14,16),15))),((11,12),13)),(((5,6),(9
,10)),8),7)),((1,4),3),2));

```

END;

```

BEGIN MacClade;
  Version 4.0 84;
  LastModified -685830224;
  FileSettings editor '1' '1' '1' '0';
  Singles 010;
  Editor 00011001111111110010001001 '0' '100' Geneva '9' '186' '1'
all;
  EditorPosition '75' '252' '883' '1133';
  TreeWindowPosition '46' '6' '1139' '1870';
  ListWindow Characters closed Geneva '9' '259' '11' '209' '380' 000;
  ListWindow Taxa closed Geneva '9' '50' '10' '273' '313' 100000;
  ListWindow Trees closed Geneva '9' '50' '10' '129' '379';
  ListWindow TypeSets closed Geneva '9' '50' '10' '276' '490';
  ListWindow WtSets closed Geneva '9' '50' '10' '276' '490';
  ListWindow ExSets closed Geneva '9' '50' '10' '276' '490';
  ListWindow CharSets closed Geneva '9' '50' '10' '276' '490';
  ListWindow TaxSets closed Geneva '9' '50' '10' '276' '490';
  ListWindow CharPartitions closed Geneva '9' '50' '10' '276' '490';
  ListWindow CharPartNames closed Geneva '9' '50' '10' '276' '490';
  ListWindow WtSets closed Geneva '9' '50' '10' '276' '490';
  ChartWindowPosition '52' '30' '1118' '1860';
  StateNamesSymbols open Geneva '9' '10' '44' '5' '192' '429';
  WindowOrder Data States;
  OtherSymbols & / 00 ? -;
  Correlation '0' '0' '1000' '0' '0' 10011010;

```



```

Salmo 00000001;
EditorFile '2';
ExportHTML _ MOSS '100' 110000;
PrettyPrint 10;
EditorToolsPosition '992' '26' '115' '165';
TreeToolsPosition '1028' '9' '126' '138';
TreeWindowProgram 10;
TreeWindow 0000;
Continuous '0' '3' 1;
Calculations 0000001;
SummaryMode '0' '0' 0;
Charts Geneva '9' ( normal ) 0010;
NexusOptions '0' '0' '50' 001011001;
TipLabel '1';
TreeFont Geneva '9' ( normal );
TreeShape 1.0 1.0 1100;
TraceLabels 0101;
ChartColors '0' '0' '65535' '9' '0' 1;
ChartBiggestSpot 1;
ChartPercent 10;
ChartBarWidth '193' 1;
ChartVerticalAxis 10101;
ChartMinMax '0';
TraceAllChangesDisplay '1' 1;
BarsOnBranchesDisplay '0' '0' '60000' '10000' '10000' '10000'
'10000' '60000' '65000' '65000' '65000' '6' '1' 0000101;
ContinuousBranchLabels 0;
AllStatesBranchLabels 1;
IndexNotation '2' 1;
PrintTree 10.00 '2' '2' '2' '2' '2' '2' '2' '2' '2' '2' '2' '2' Geneva
'9' ( normal ) Geneva '10' ( normal ) Geneva '9' ( normal ) Geneva '9' (
normal ) Geneva '9' ( bold ) Geneva '9' ( normal ) Geneva '9' ( normal )
'0' '0' '0' '0' '0' '0' '0' '0' '0' '0' '0' '0' '0' '0' '0' '0' '0' '0'
'0' '0' '0' '0' '0' '0' '0' '0' '0' '0' '0' '0' '1' '1' '1' '1' '0' '30'
'-39' '4' '-40' '0' '1' '2' '1' '8' '0' '0' '0' '2'
1000111000000000000100000111000;
MatchChar 00 .;
EntryInterpretation 01;
ColorOptions 00;
TreeTools '0' '5' '4' '0' '10' '4' '0' 0010011111101110;
EditorTools '0' '0' '0' '1000' '0' '0' '6' '3' '0' 100000101110001;
PairAlign '2' '2' '3' '2' '1' '1' '2' '1' '3' 1010;
BothTools '1';

END;
BEGIN MESQUITECHARMODELS;
ProbModelSet * UNTITLED = 'Mk1 (est.)': 1- 10;
END;

Begin MESQUITE;
MESQUITESCRIPTVERSION 2;
TITLE AUTO;
tell ProjectCoordinator;
timeSaved 1526496867983;

```

```

    getEmployee #mesquite.minimal.ManageTaxa.ManageTaxa;
    tell It;
        setID 0 4406286967801003490;
    endTell;
    getEmployee
#mesquite.charMatrices.ManageCharacters.ManageCharacters;
    tell It;
        setID 0 4453974944122221279;
        mqVersion 350;
        checksumv 0 3 2389232275 null getNumChars 10 numChars
10 getNumTaxa 146 numTaxa 146 short true bits 2305843009213694463
states 511 sumSquaresStatesOnly 1236833.0 sumSquares -
5.072854620270004E19 longCompressibleToShort false usingShortMatrix true
NumFiles 1 NumMatrices 1;
        mqVersion;
    endTell;
    getWindow;
    tell It;
        suppress;
        setResourcesState false false 181;
        setPopoutState 300;
        setExplanationSize 0;
        setAnnotationSize 0;
        setFontIncAnnot 0;
        setFontIncExp 0;
        setSize 2354 1217;
        setLocation 184 43;
        setFont SanSerif;
        setFontSize 10;
        getToolPalette;
        tell It;
        endTell;
        desuppress;
    endTell;
    getEmployee
#mesquite.trees.BasicTreeWindowCoord.BasicTreeWindowCoord;
    tell It;
        makeTreeWindow #4406286967801003490
#mesquite.trees.BasicTreeWindowMaker.BasicTreeWindowMaker;
    tell It;
        suppressEPCResponse;
        setTreeSource
#mesquite.trees.ManyTreesFromFile.ManyTreesFromFile;
    tell It;
        setFilePath Santalales.4runs.part.con.tre
remain ;

        toggleReread on;
        toggleLive on;
    endTell;
    setAssignedID
1419.1526491938866.2056392941139851881;
    getTreeWindow;
    tell It;
        setExplanationSize 30;

```

```

        setAnnotationSize 20;
        setFontIncAnnot 0;
        setFontIncExp 0;
        setSize 2173 1145;
        setLocation 184 43;
        setFont SanSerif;
        setFontSize 10;
        getToolPalette;
        tell It;
            setTool
mesquite.trees.BasicTreeWindowMaker.BasicTreeWindow.interchange;
        endTell;
        setActive;
        getTreeDrawCoordinator
#mesquite.trees.BasicTreeDrawCoordinator.BasicTreeDrawCoordinator;
        tell It;
            suppress;
            setTreeDrawer
#mesquite.trees.BallsNSticks.BallsNSticks;
        tell It;
            setSpotDiameter 22;
            setEdgeWidth 2;
            orientUp;
            useSquare;
            toggleBallsInternal on;
            toggleCosmic off;
            getEmployee
#mesquite.trees.NodeLocsStandard.NodeLocsStandard;
        tell It;
            branchLengthsToggle off;
            toggleScale on;
            toggleBroadScale off;
            toggleCenter off;
            toggleEven off;
            setFixedTaxonDistance 0;
        endTell;
    endTell;
    setBackground White;
    setBranchColor Black;
    showNodeNumbers off;
    showBranchColors on;
    labelBranchLengths off;
    centerBrLenLabels on;
    showBrLensUnspecified on;
    showBrLenLabelsOnTerminals on;
    setBrLenLabelColor 0 0 255;
    setNumBrLenDecimals 6;
    desuppress;
    getEmployee
#mesquite.trees.BasicDrawTaxonNames.BasicDrawTaxonNames;
    tell It;
        setColor Black;
        toggleColorPartition off;
        toggleColorAssigned on;

```

```

toggleShadePartition off;
toggleShowFootnotes on;
toggleNodeLabels on;
toggleCenterNodeNames off;
toggleShowNames on;
namesAngle ?;
endTell;
endTell;
setTreeNumber 1;
setTree
'( (2:0.0427085, (3:0.02410081, (1:0.02750463, 4:0.01660092):0.004513249):0.0
03477896):0.001013096, ( (7:0.01217319, (8:0.01336789, ( (5:0.004335867, 6:0.01
500366):0.003166674, (9:0.005694754, 10:0.005594357):0.002256029):0.0043237
79):0.007253021):0.01625391, ( (13:0.01802596, (11:0.002697131, 12:0.00694082
5):0.003567996):0.0189493, ( (15:0.02685896, (14:0.01572449, 16:0.007823394)
:0.008644097):0.03544873, ( (19:0.03299719, (17:0.01485614, 18:0.007532974):0
.04054625):0.02688586, ( (22:0.005854577, (20:0.01131202, 27:0.01430385):0.00
1154891):0.01826119, (23:0.05219487, (25:0.02878665, (24:0.02963278, (21:0.02
516465, 26:0.02918349):0.01757082):0.03968739):0.005464258):0.004446421):0
.02031069):0.002541969):0.003825554, (28:0.0214238, ( (29:0.0825034, (32:0.0
2533931, (30:0.03384895, 31:0.08882582):0.01854477):0.0474148):0.007878924,
(33:0.02226749, (35:0.01289728, (34:0.007172023, ( (48:0.04150229, 49:0.05795
538, 50:0.04703986):0.002771896, (58:0.007571858, ( (51:0.05205885, 56:0.01789
671):0.006125793, (52:0.009348946, 57:0.005681727):0.004835886, (55:0.023897
54, (53:0.006202831, 54:0.01820412):0.006005294):0.00432092):0.0016298):0.0
1131874):0.001973718, ( (46:0.0213921, 47:0.01404063):0.00107007, ( (36:0.0071
90135, 45:0.007611418):0.006318201, (43:0.009517098, ( (37:0.007054879, 42:0.0
2294456):0.003170522, ( (38:0.01699148, 40:0.005686135):0.002805668, (44:0.01
21007, (39:0.01073139, 41:0.01979183):0.004144357):0.003252529):0.001475249
):0.0008105262):0.007817517):0.006128277):0.001176937, ( (61:0.02571164, 62:
0.0157517):0.02019881, ( (59:0.01250594, 60:0.01712963):0.01215547, ( (68:0.01
356892, (69:0.01426989, (65:0.01133621, (66:0.009424083, (63:0.007867561, 67:0
.02994285):0.01343063):0.001599559):0.001878193):0.002534126):0.00223282,
( (64:0.01610416, 73:0.01444377):0.001484292, ( (70:0.01269943, 71:0.01477214)
:0.01140238, ( (72:0.01682223, 74:0.01111839):0.002602108, ( (85:0.01664849, 91
:0.02688919):0.001126855, ( (80:0.009666983, 81:0.009902721):0.004217473, (7
8:0.01559778, ( (75:0.01089482, 77:0.01301508):0.002120723, (79:0.01716177, (7
6:0.0006842856, 82:0.001991244):0.009207693):0.003809529):0.0004696961):0.
0008284521):0.003654568, ( (92:0.01342894, 94:0.01462536):0.005044885, (88:0.
02509804, ( (86:0.02413697, (87:0.01622932, 93:0.01006168):0.008708425):0.001
74835, (83:0.01397605, (84:0.01165147, (89:0.01321346, 90:0.004157121):0.0152
5226):0.003326409):0.001435535):0.003244698):0.002119706):0.001082576):0.
0009747848):0.0009900539):0.002470467):0.002273083):0.0008662721):0.01574
521):0.002431362):0.0126683):0.0012039):0.001173796):0.01541704):0.038108
49):0.01115658, ( (95:0.00998847, (96:0.02525982, ( (98:0.003909671, 100:0.0104
6099):0.002472736, (99:0.02345278, ( (97:0.03805008, 104:0.007890372):0.00586
2827, (101:0.01085338, (102:0.01426165, 103:0.01040789):0.004365877):0.00478
3535):0.001756922):0.002365024):0.001183329):0.001432778):0.04728913, ( ( (
105:0.03424393, 106:0.01559407):0.05050821, (107:0.04443823, (108:0.02170408
, 109:0.03722297):0.03419057):0.01240168):0.002776742, ( (112:0.01055929, (11
0:0.007075878, 111:0.01036565):0.002891359):0.01454774, (115:0.01104199, (11
4:0.01100786, (113:0.01176738, 116:0.006294174, 117:0.005870705):0.004901482
):0.002864104):0.01238289):0.02752898):0.002020981, ( ( (123:0.008402135, 127
:0.01663574):0.03592075, ( (125:0.01126086, (120:0.06142188, (122:0.04871511,

```

```
124:0.04307347):0.007792467):0.006559554):0.001226136,(130:0.02576722,(12
8:0.01047803,(126:0.01536183,(121:0.005390924,129:0.01063383):0.006793014
):0.002178334):0.007212577):0.003970426):0.002536427):0.01473929,((118:0.
005071126,119:0.01181805):0.06091803,(((131:0.005346879,133:0.009525287):
0.01003141,((132:0.02675158,(137:0.0160738,139:0.01231259):0.01014149):0.
005733366,((134:0.01425918,135:0.005531996):0.002390216,(136:0.01192842,1
38:0.008286299):0.007989143):0.01216924):0.00372061):0.01338631,(((141:0.
0184675,145:0.04221785):0.04703868,(142:0.0112905,143:0.0283928):0.036652
88):0.00841395,(146:0.08319793,(144:0.08700833,140:0.137159):0.01152686):
0.009101481):0.05249529):0.01176002):0.002178264):0.004257561):0.00658749
7):0.008001691):0.01621891):0.00162924):0.003521508):0.003979309):0.00101
3096);';
```

```
        setDrawingSizeMode 0;
        toggleLegendFloat on;
        scale 0;
        toggleTextOnTree off;
        togglePrintName on;
        showWindow;
        newAssistant
#mesquite.ancstates.TraceCharacterHistory.TraceCharacterHistory;
    tell It;
        suspend ;
        setDisplayMode
#mesquite.ancstates.ShadeStatesOnTree.ShadeStatesOnTree;
    tell It;
        toggleLabels off;
        togglePredictions off;
        toggleGray off;
    endTell;
    setHistorySource
#mesquite.ancstates.RecAncestralStates.RecAncestralStates;
    tell It;
        getCharacterSource
#mesquite.charMatrices.CharSrcCoordObed.CharSrcCoordObed;
    tell It;
        setCharacterSource
#mesquite.charMatrices.StoredCharacters.StoredCharacters;
    tell It;
        setDataSet
#4453974944122221279;
        endTell;
    endTell;
    setMethod
#mesquite.parsimony.ParsAncestralStates.ParsAncestralStates;
    tell It;
        setModelSource
#mesquite.parsimony.CurrentParsModels.CurrentParsModels;
        toggleMPRsMode off;
    endTell;
    toggleShowSelectedOnly off;
endTell;
setCharacter 1;
setMapping 1;
toggleShowLegend on;
```

```

        setColorMode 0;
        toggleWeights on;
        setInitialOffsetX 4;
        setInitialOffsetY -273;
        setLegendWidth 142;
        setLegendHeight 161;
        resume ;
    endTell;
endTell;
desuppresseEPCResponse;
getEmployee
#mesquite.trees.ColorBranches.ColorBranches;
    tell It;
        setColor Red;
        removeColor off;
    endTell;
    getEmployee
#mesquite.ornamental.BranchNotes.BranchNotes;
    tell It;
        setAlwaysOn off;
    endTell;
    getEmployee
#mesquite.ornamental.ColorTreeByPartition.ColorTreeByPartition;
    tell It;
        colorByPartition off;
    endTell;
    getEmployee
#mesquite.ornamental.DrawTreeAssocDoubles.DrawTreeAssocDoubles;
    tell It;
        setOn on;
        toggleShow consensusFrequency;
        toggleShow bootstrapFrequency;
        toggleShow posteriorProbability;
        toggleShow consensusFrequency;
        toggleShow posteriorProbability;
        toggleShow bootstrapFrequency;
        setDigits 4;
        setThreshold ?;
        writeAsPercentage off;
        toggleCentred off;
        toggleHorizontal on;
        toggleWhiteEdges on;
        toggleShowOnTerminals on;
        setFontSize 10;
        setOffset 0 0;
    endTell;
    getEmployee
#mesquite.ornamental.DrawTreeAssocStrings.DrawTreeAssocStrings;
    tell It;
        setOn on;
        toggleCentred on;
        toggleHorizontal on;
        setFontSize 10;
        setOffset 0 0;

```

```

        toggleShowOnTerminals on;
    endTell;
    getEmployee
#mesquite.trees.TreeInfoValues.TreeInfoValues;
    tell It;
        panelOpen false;
    endTell;
    endTell;
    endTell;
    getEmployee
#mesquite.charMatrices.BasicDataWindowCoord.BasicDataWindowCoord;
    tell It;
        showDataWindow #4453974944122221279
#mesquite.charMatrices.BasicDataWindowMaker.BasicDataWindowMaker;
    tell It;
        getWindow;
    tell It;
        setExplanationSize 30;
        setAnnotationSize 20;
        setFontIncAnnot 0;
        setFontIncExp 0;
        setSize 2173 1145;
        setLocation 184 43;
        setFont SanSerif;
        setFontSize 10;
        getToolPalette;
    tell It;
    endTell;
    setTool
mesquite.charMatrices.BasicDataWindowMaker.BasicDataWindow.arrow;
    colorCells
#mesquite.charMatrices.NoColor.NoColor;
    colorRowNames
#mesquite.charMatrices.TaxonGroupColor.TaxonGroupColor;
    colorColumnNames
#mesquite.charMatrices.CharGroupColor.CharGroupColor;
    colorText
#mesquite.charMatrices.NoColor.NoColor;
    setBackground White;
    toggleShowNames on;
    toggleShowTaxonNames on;
    toggleTight off;
    toggleThinRows off;
    toggleShowChanges on;
    toggleSeparateLines off;
    toggleShowStates on;
    toggleAutoWCharNames on;
    toggleAutoTaxonNames off;
    toggleShowDefaultCharNames off;
    toggleConstrainCW on;
    toggleBirdsEye off;
    toggleShowPaleGrid off;
    toggleShowPaleCellColors off;
    toggleShowPaleExcluded off;

```

```

        togglePaleInapplicable on;
        toggleShowBoldCellText off;
        toggleAllowAutosize on;
        toggleColorsPanel off;
        toggleDiagonal on;
        setDiagonalHeight 80;
        toggleLinkedScrolling on;
        toggleScrollLinkedTables off;
    endTell;
    showWindow;
    getWindow;
    tell It;
        forceAutosize;
    endTell;
    getEmployee
#mesquite.charMatrices.AlterData.AlterData;
    tell It;
        toggleBySubmenus off;
    endTell;
    getEmployee
#mesquite.charMatrices.ColorByState.ColorByState;
    tell It;
        setStateLimit 9;
        toggleUniformMaximum on;
    endTell;
    getEmployee
#mesquite.charMatrices.ColorCells.ColorCells;
    tell It;
        setColor Red;
        removeColor off;
    endTell;
    getEmployee
#mesquite.categ.StateNamesStrip.StateNamesStrip;
    tell It;
        showStrip off;
    endTell;
    getEmployee
#mesquite.charMatrices.AnnotPanel.AnnotPanel;
    tell It;
        togglePanel off;
    endTell;
    getEmployee
#mesquite.charMatrices.CharReferenceStrip.CharReferenceStrip;
    tell It;
        showStrip off;
    endTell;
    getEmployee
#mesquite.charMatrices.QuickKeySelector.QuickKeySelector;
    tell It;
        autotabOff;
    endTell;
    getEmployee
#mesquite.charMatrices.SelSummaryStrip.SelSummaryStrip;
    tell It;

```



```
                showStrip off;
            endTell;
            getEmployee
#mesquite.categ.SmallStateNamesEditor.SmallStateNamesEditor;
            tell It;
                panelOpen true;
            endTell;
        endTell;
    endTell;
endTell;
end;
```