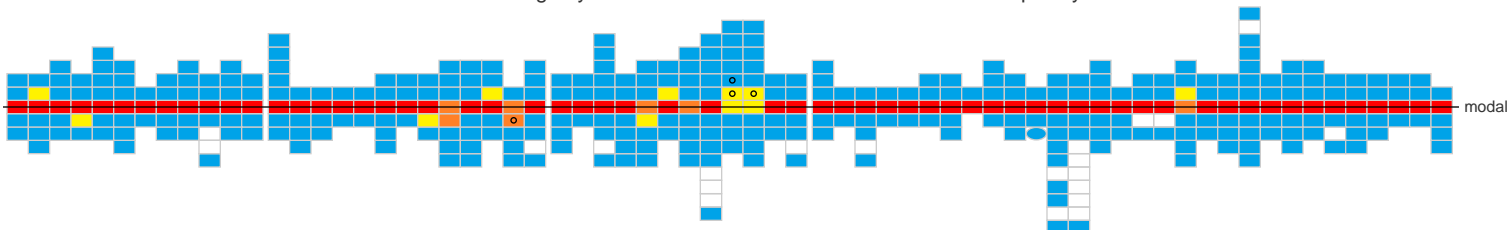


R-L21

This is the modal haplotype for the whole tree including any subtrees.

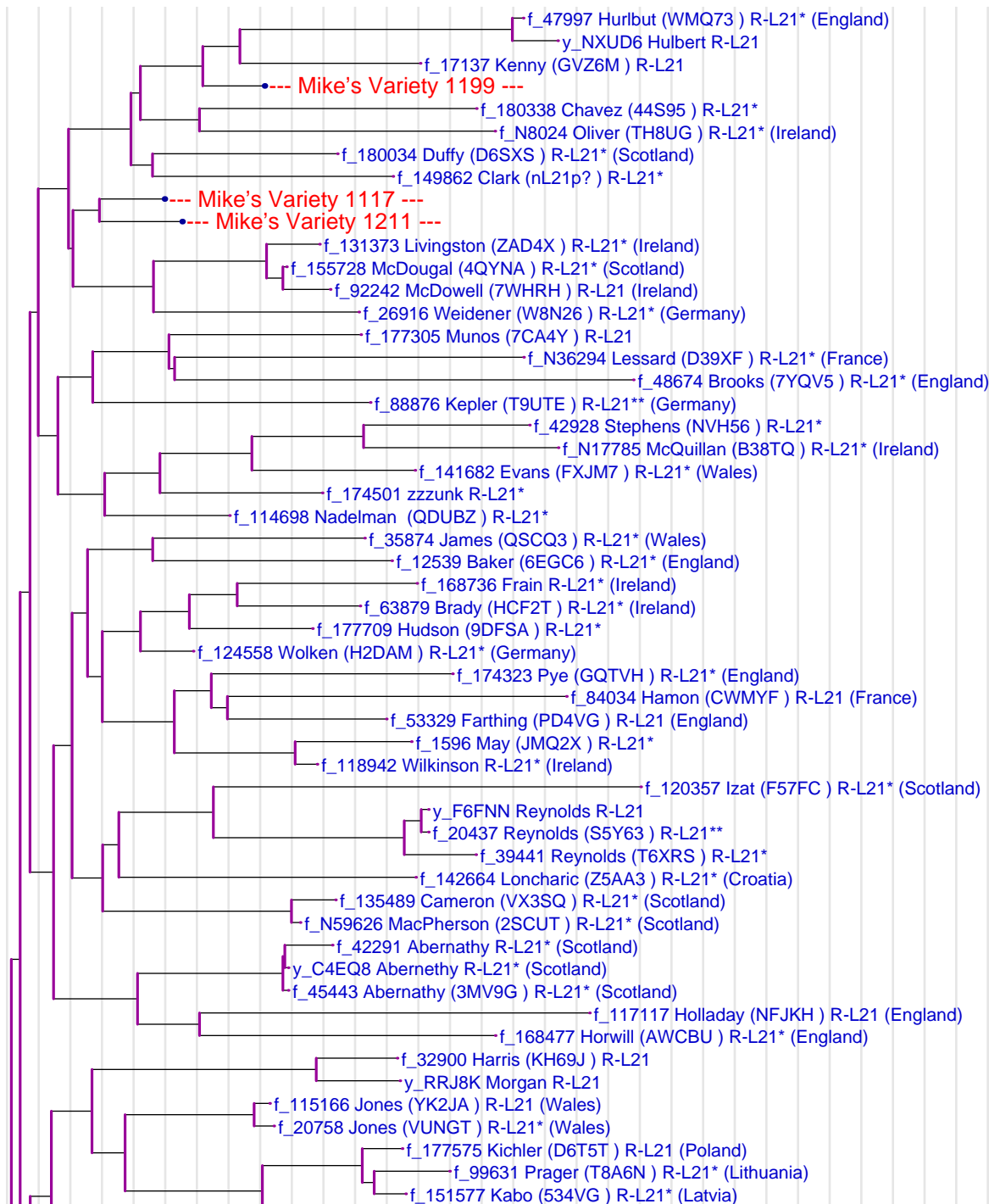
393	390	19	391	385a	385b	426	388	439	389i	392	389i-1	458	459a	459b	455	454	447	437	448	449	464a	464b	464c	464d	460	H4	YCA IIa	YCA IIb	466	607	576	570	CDYb	CDYb	442	438	531	578	395S1a	395S1b	590	537	641	472	406S1	511	425	413a	413b	557	594	436	490	534	450	444	481	520	446	617	568	487	572	640	492	565
13	24	14	11	14	12	12	12	13	13	16	17	9	10	11	11	25	15	19	30	15	15	17	17	11	11	19	23	16	15	18	17	36	38	12	12	11	9	15	16	8	8	10	10	8	10	10	12	23	23	16	10	12	12	15	8	12	22	20	13	12	11	13	11	12	12	

This is the marker distribution for the whole tree including any subtrees. The color indicates the relative frequency of the alleles.

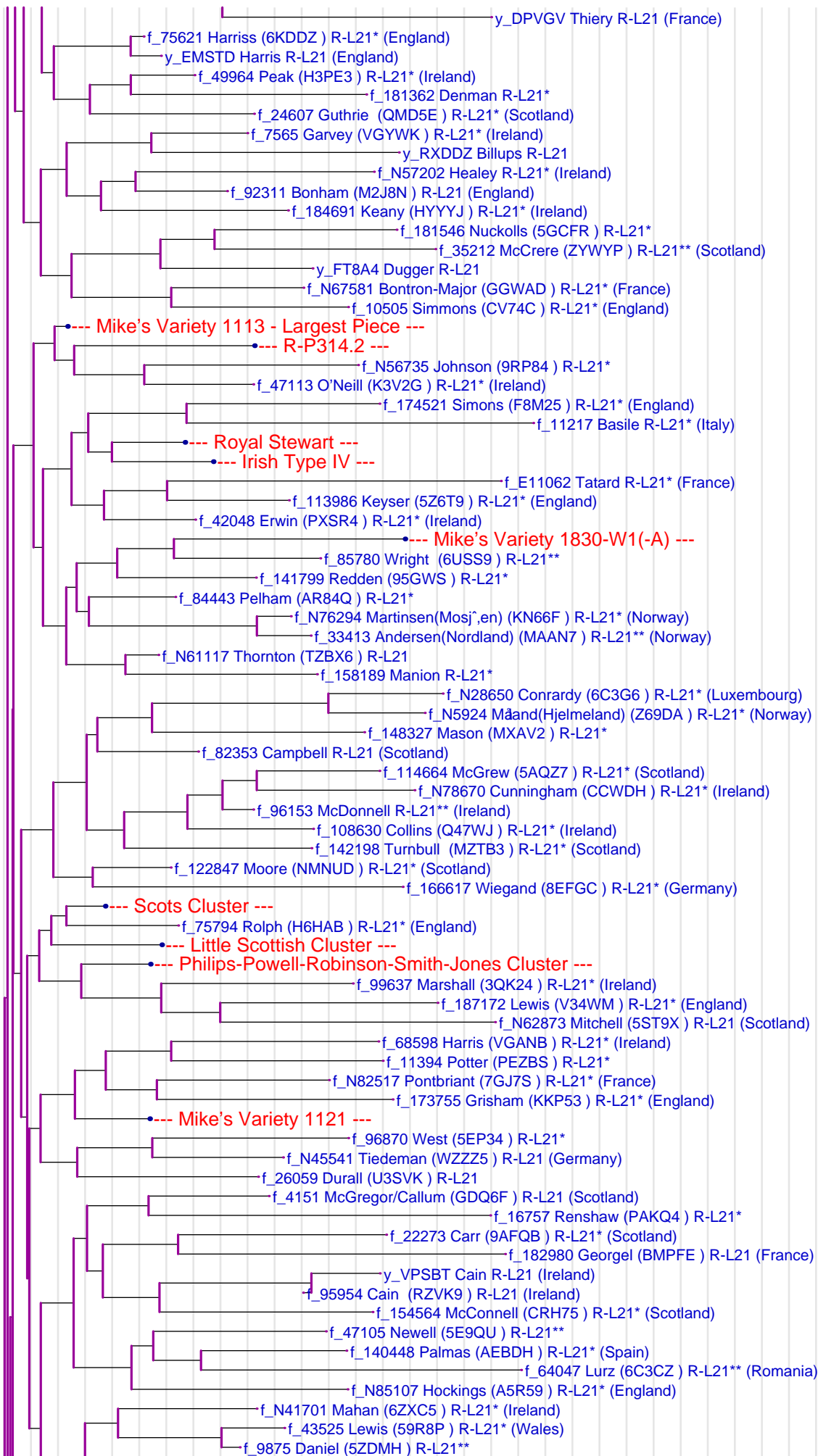


Age Analysis

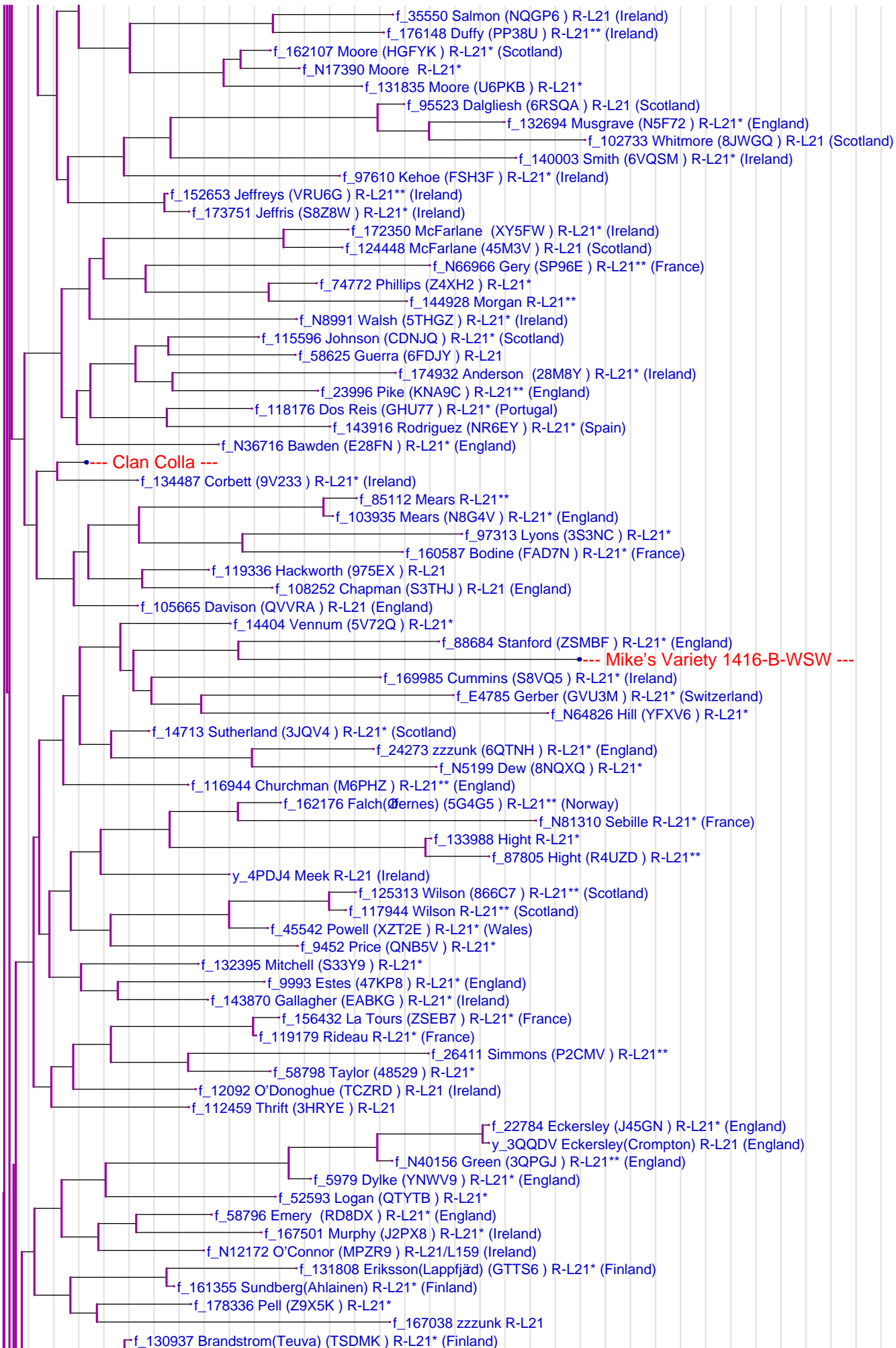
Total number of members	Total number of markers	Total number of mutations	Mutation fraction	Age estimate (in generations)	Age estimate (in years)
1483	99361	24516	24.67%	140.63±14.07	3515.75±497.36



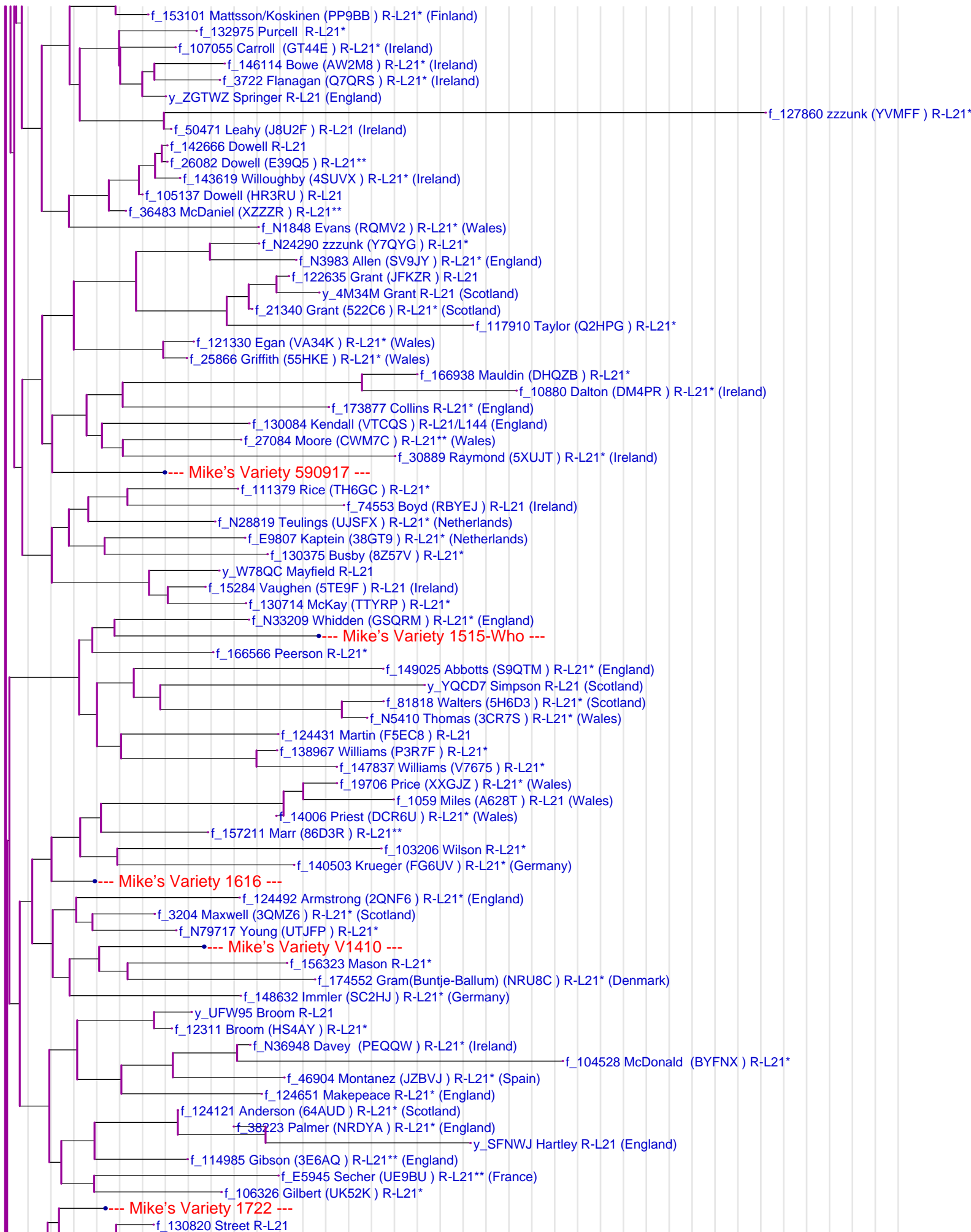
The vertical grey lines are separated 10 generations apart.



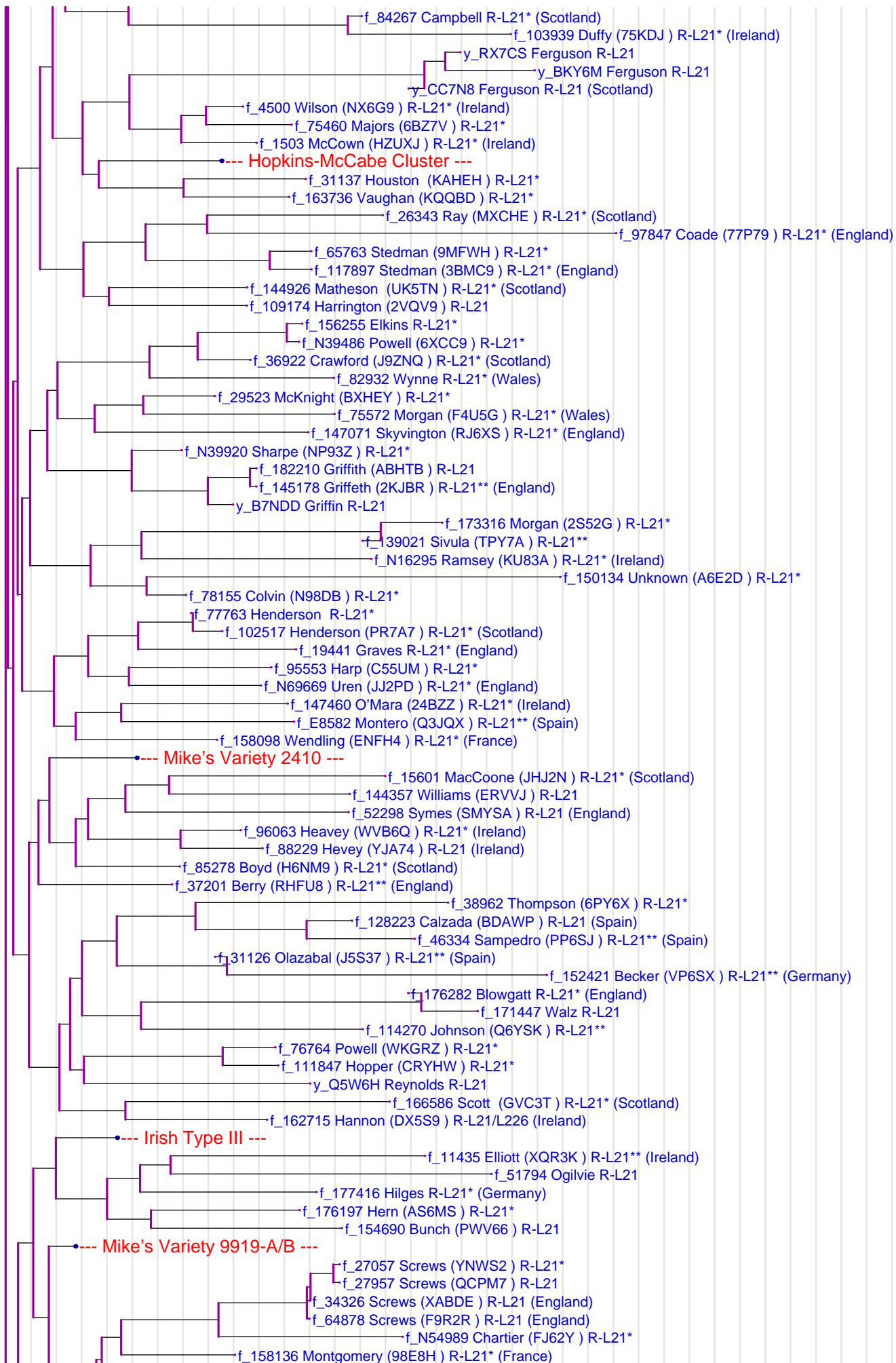
The vertical grey lines are separated 10 generations apart.



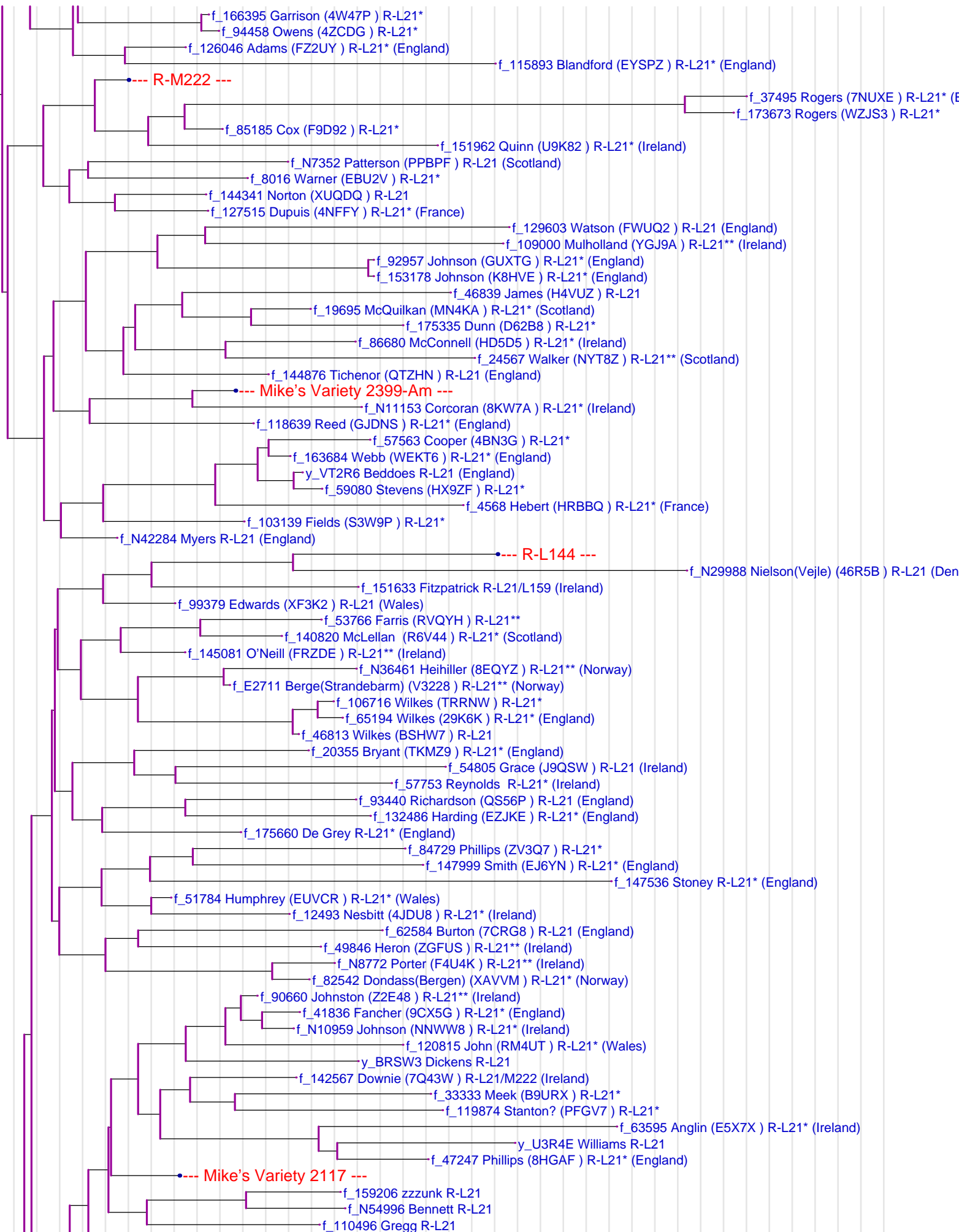
The vertical grey lines are separated 10 generations apart.



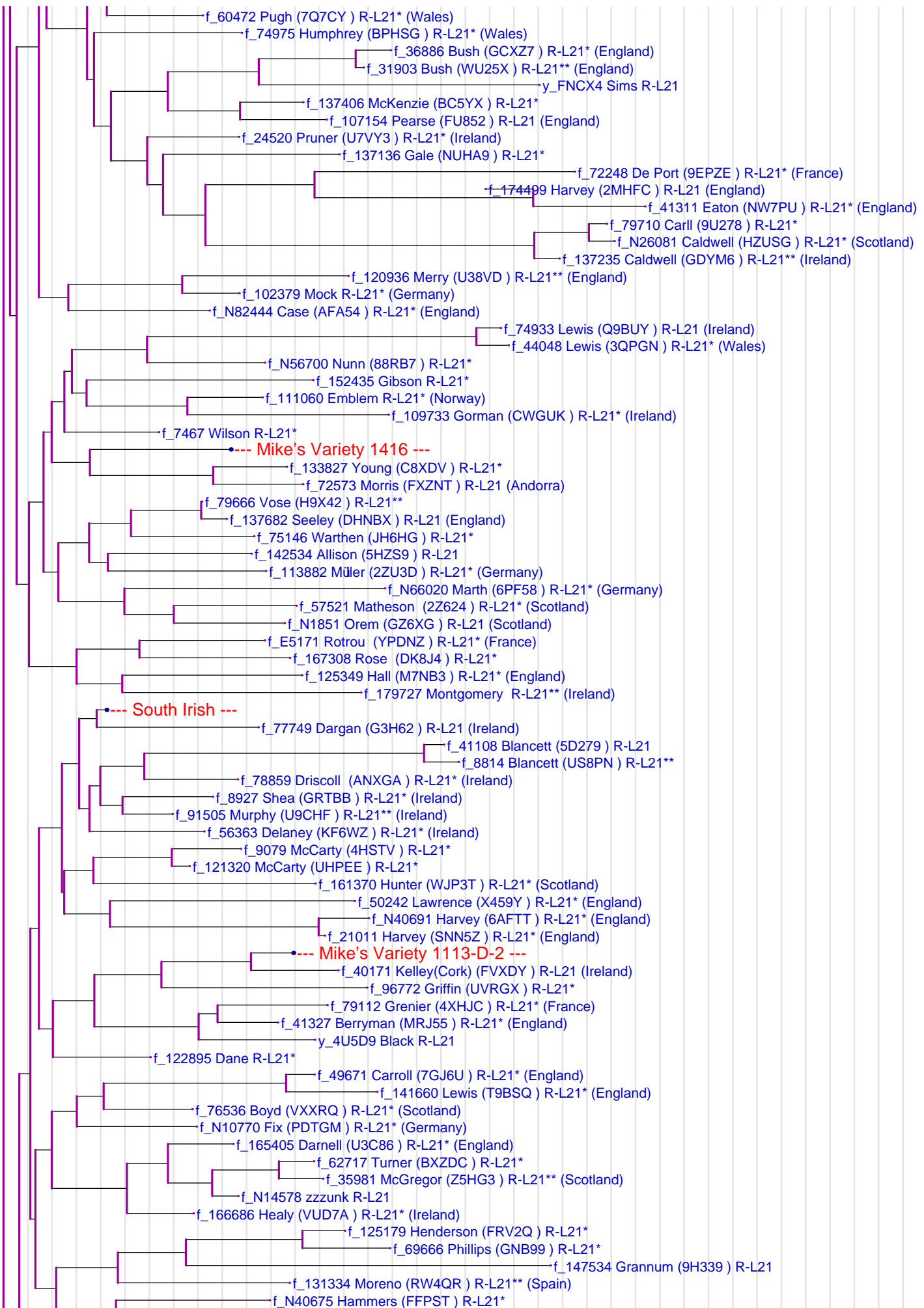
The vertical grey lines are separated 10 generations apart.



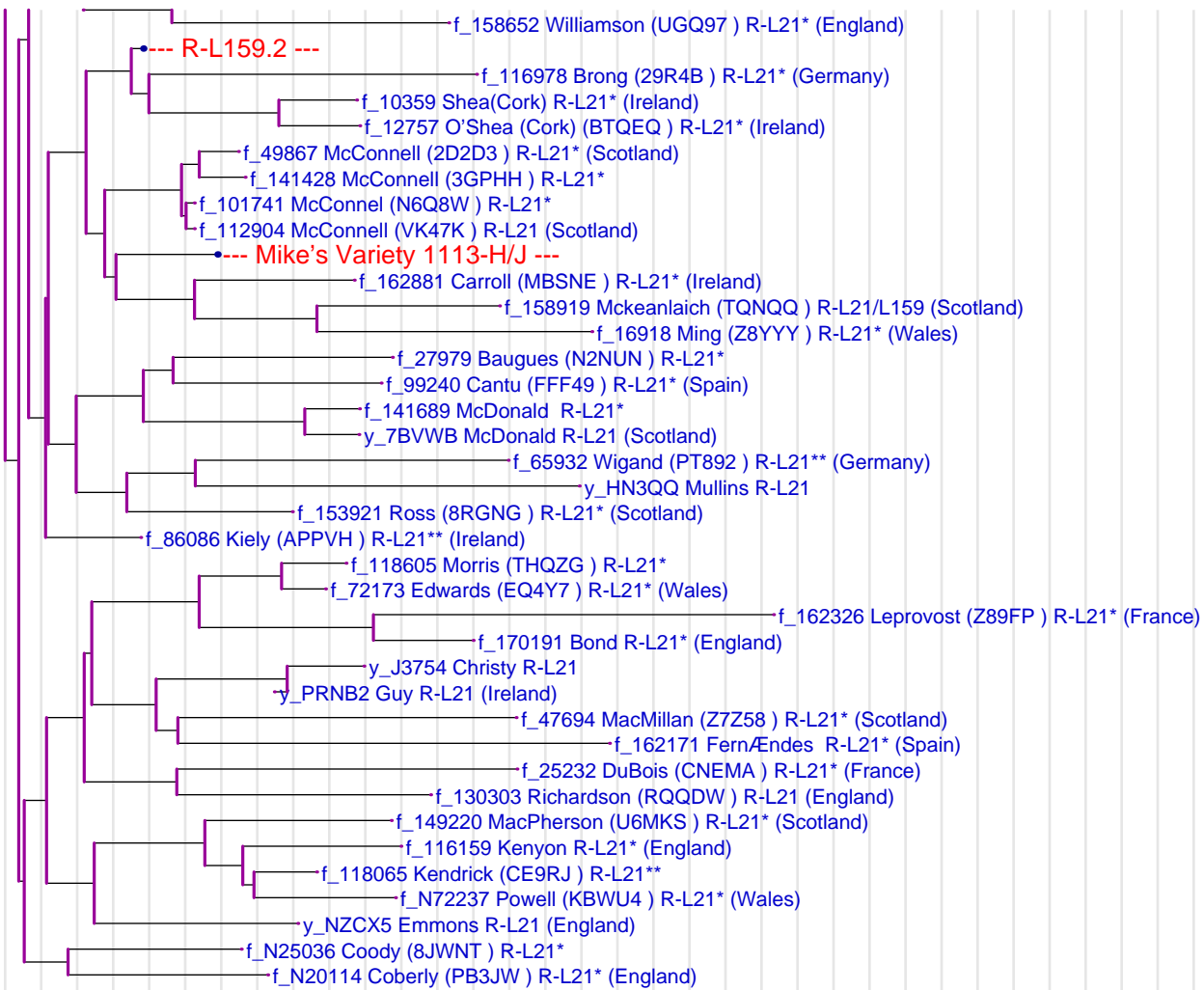
The vertical grey lines are separated 10 generations apart.



The vertical grey lines are separated 10 generations apart.



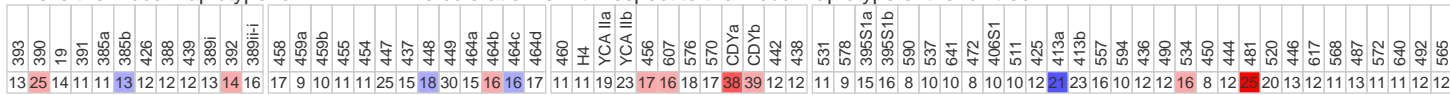
The vertical grey lines are separated 10 generations apart.



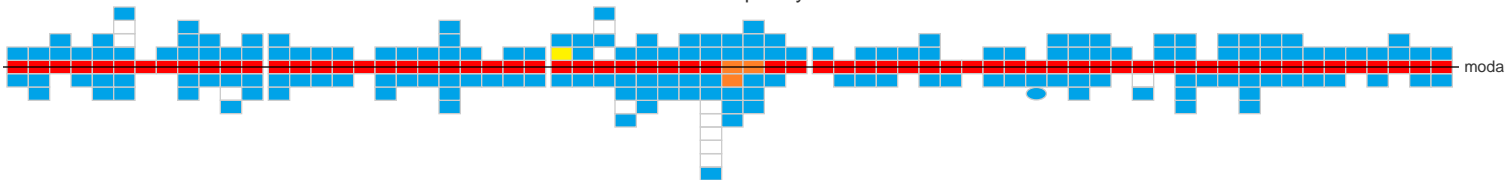
The vertical grey lines are separated 10 generations apart.

R-M222

This is the modal haplotype for R-M222. The coloration is with respect to the modal haplotype of the full tree.

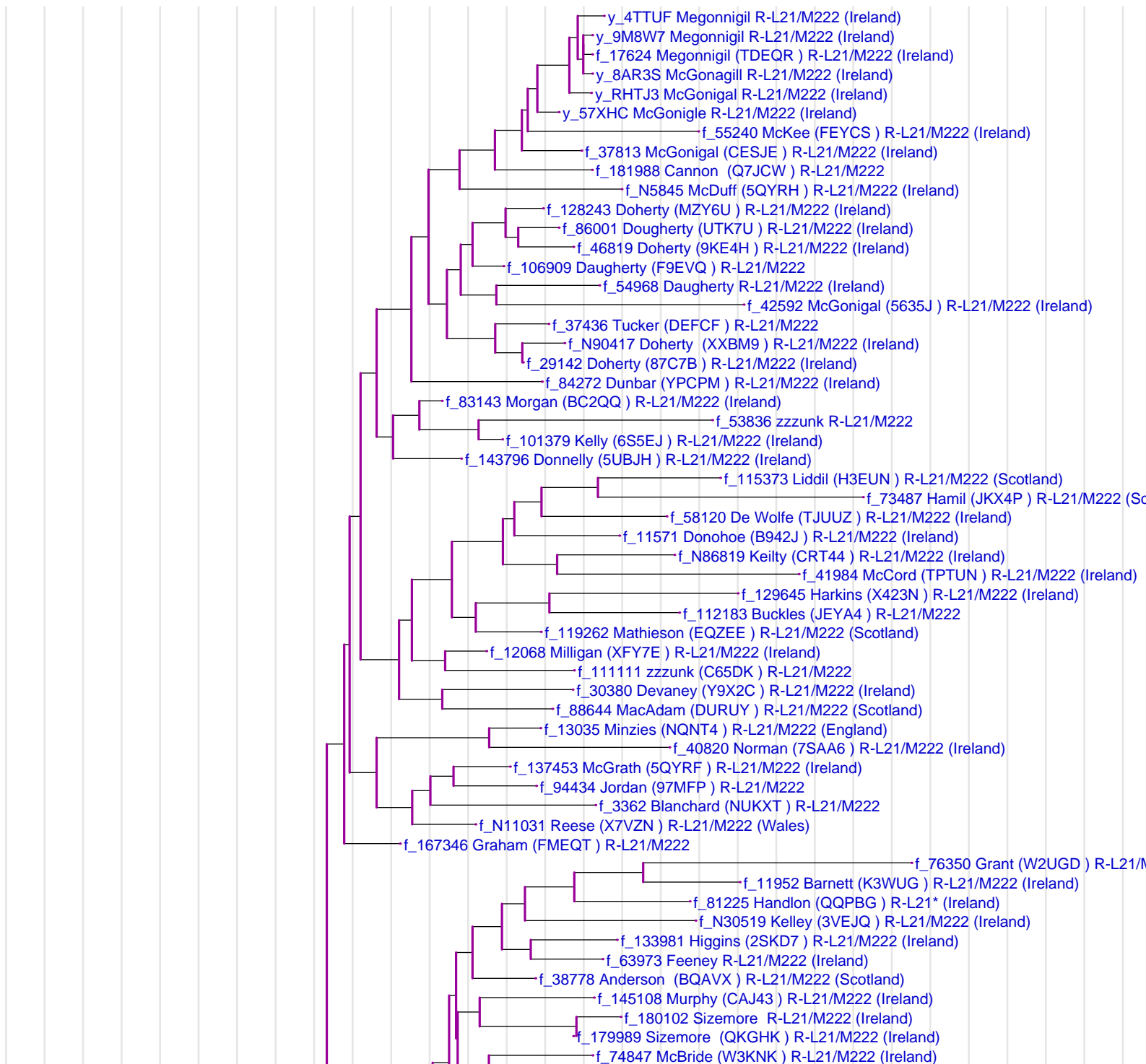


This is the marker distribution for R-M222. The color indicates the relative frequency of the alleles.

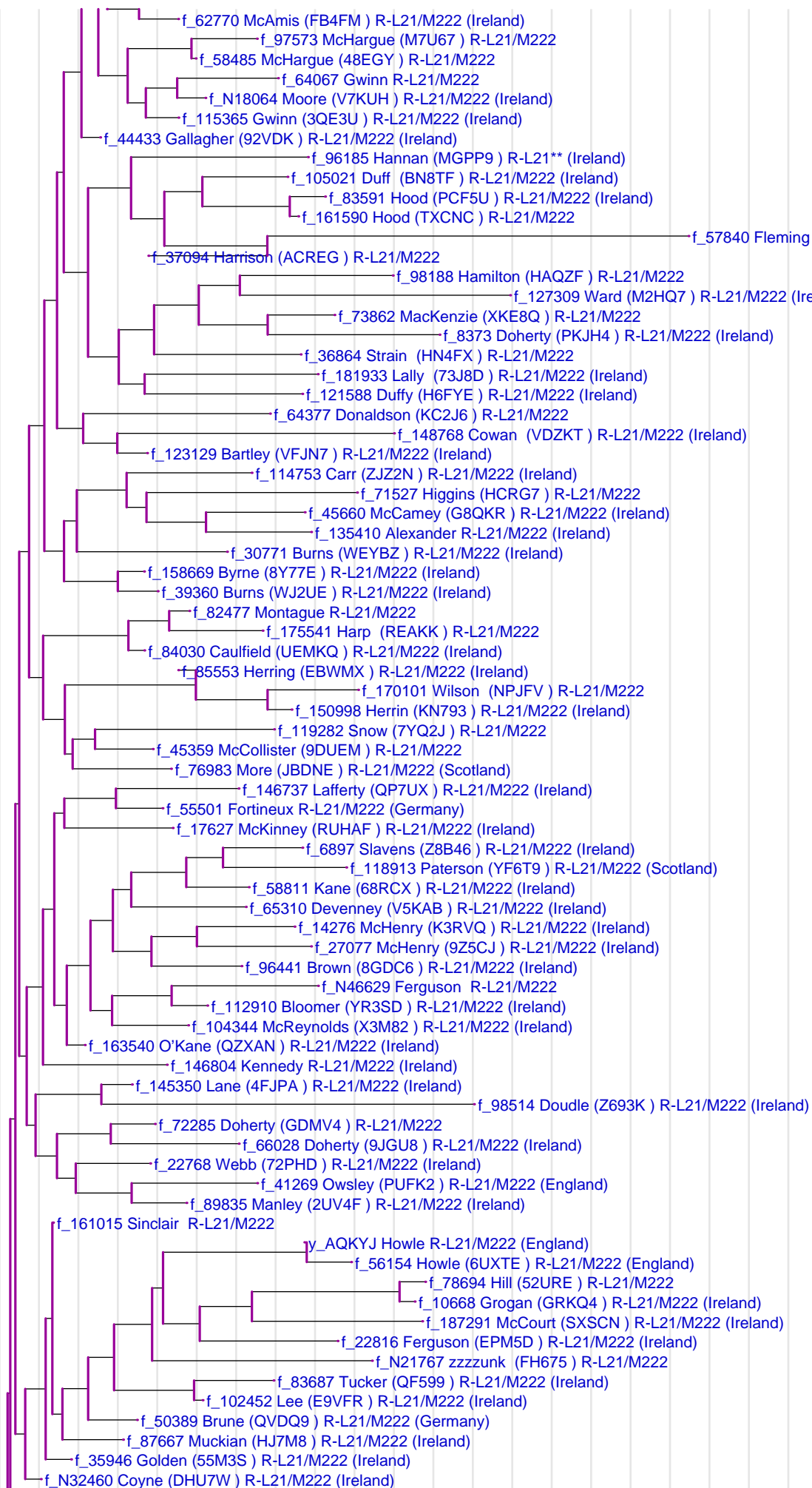


Age Analysis

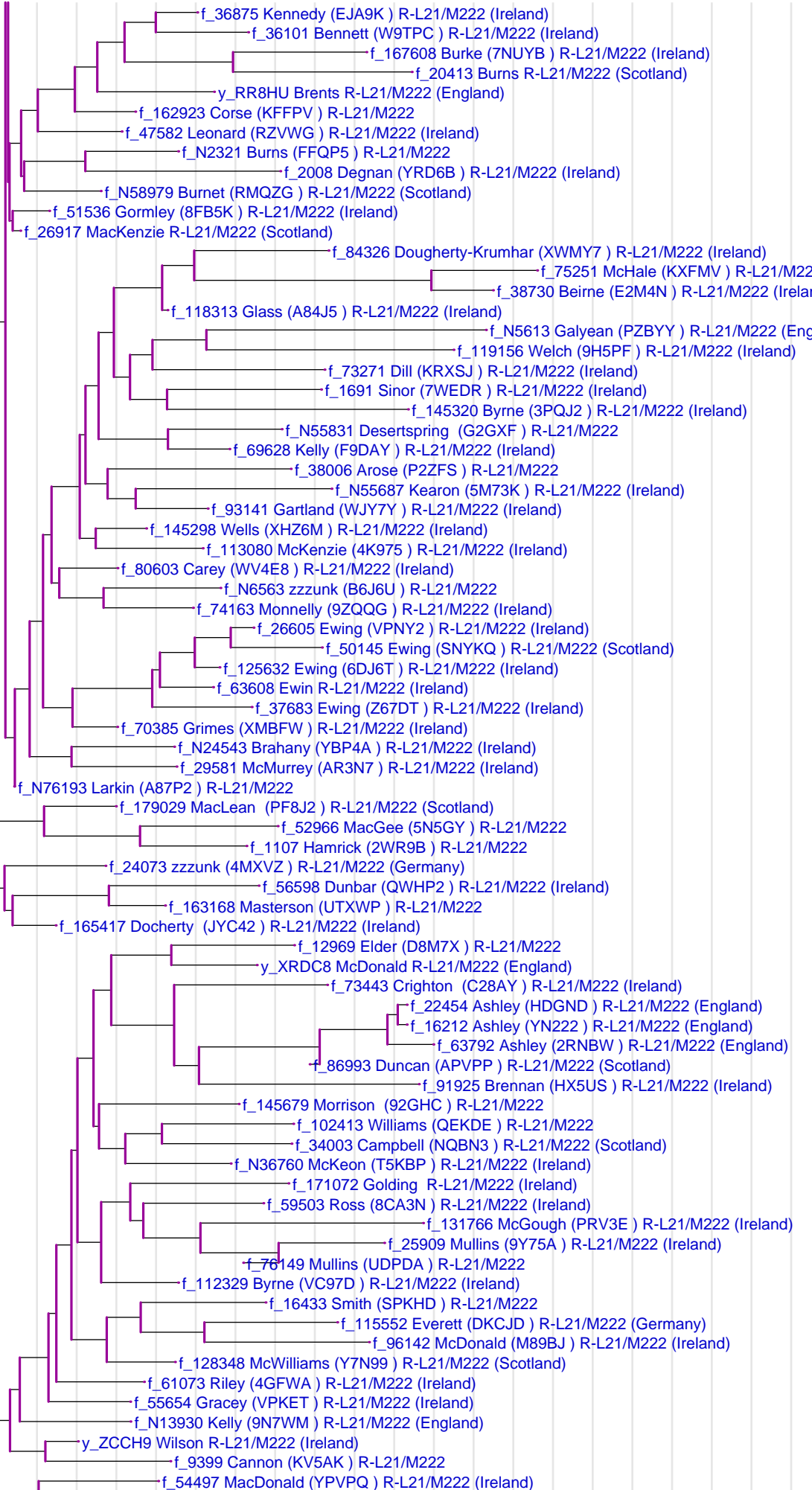
Total number of members	Total number of markers	Total number of mutations	Mutation fraction	Age estimate (in generations)	Age estimate (in years)
312	20904	2361	11.29%	59.85±6.00	1496.22±211.879



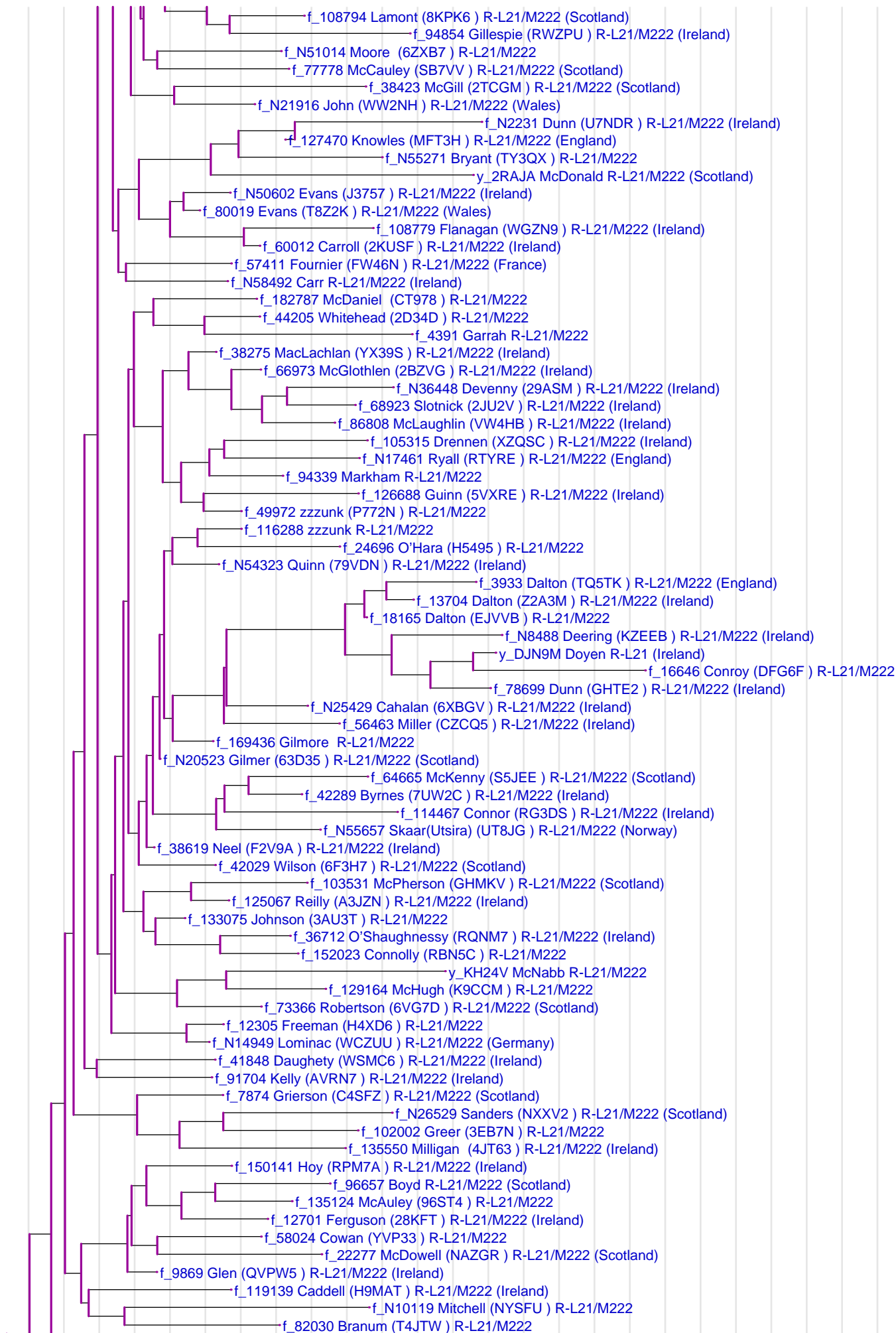
The vertical grey lines are separated 10 generations apart.



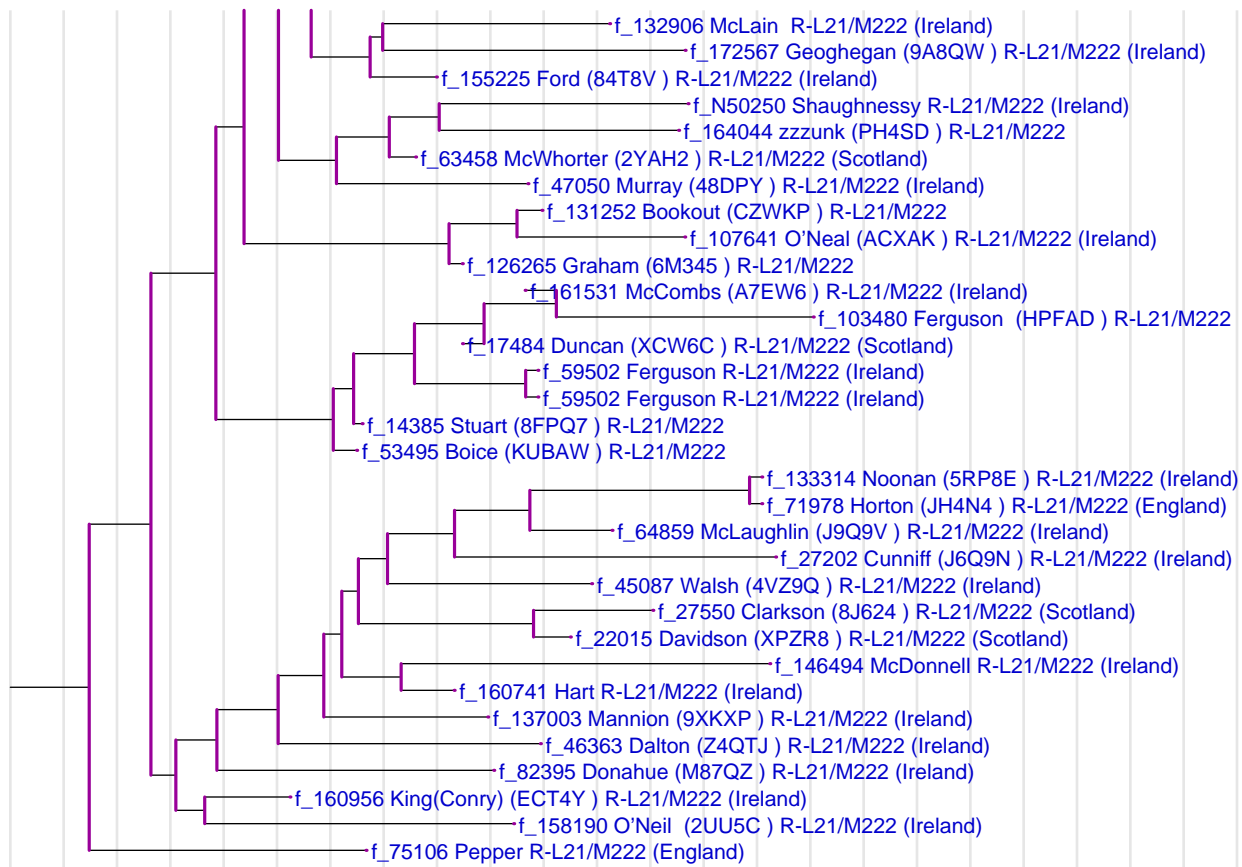
The vertical grey lines are separated 10 generations apart.



The vertical grey lines are separated 10 generations apart.



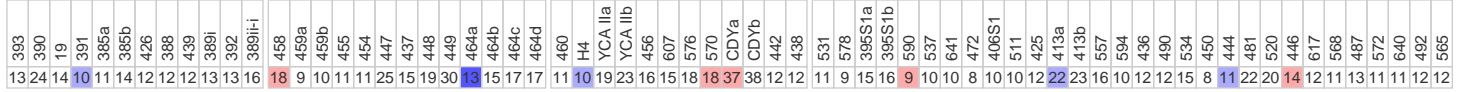
The vertical grey lines are separated 10 generations apart.



The vertical grey lines are separated 10 generations apart.

Little Scottish Cluster

This is the modal haplotype for Little Scottish Cluster. The coloration is with respect to the modal haplotype of the full tree.

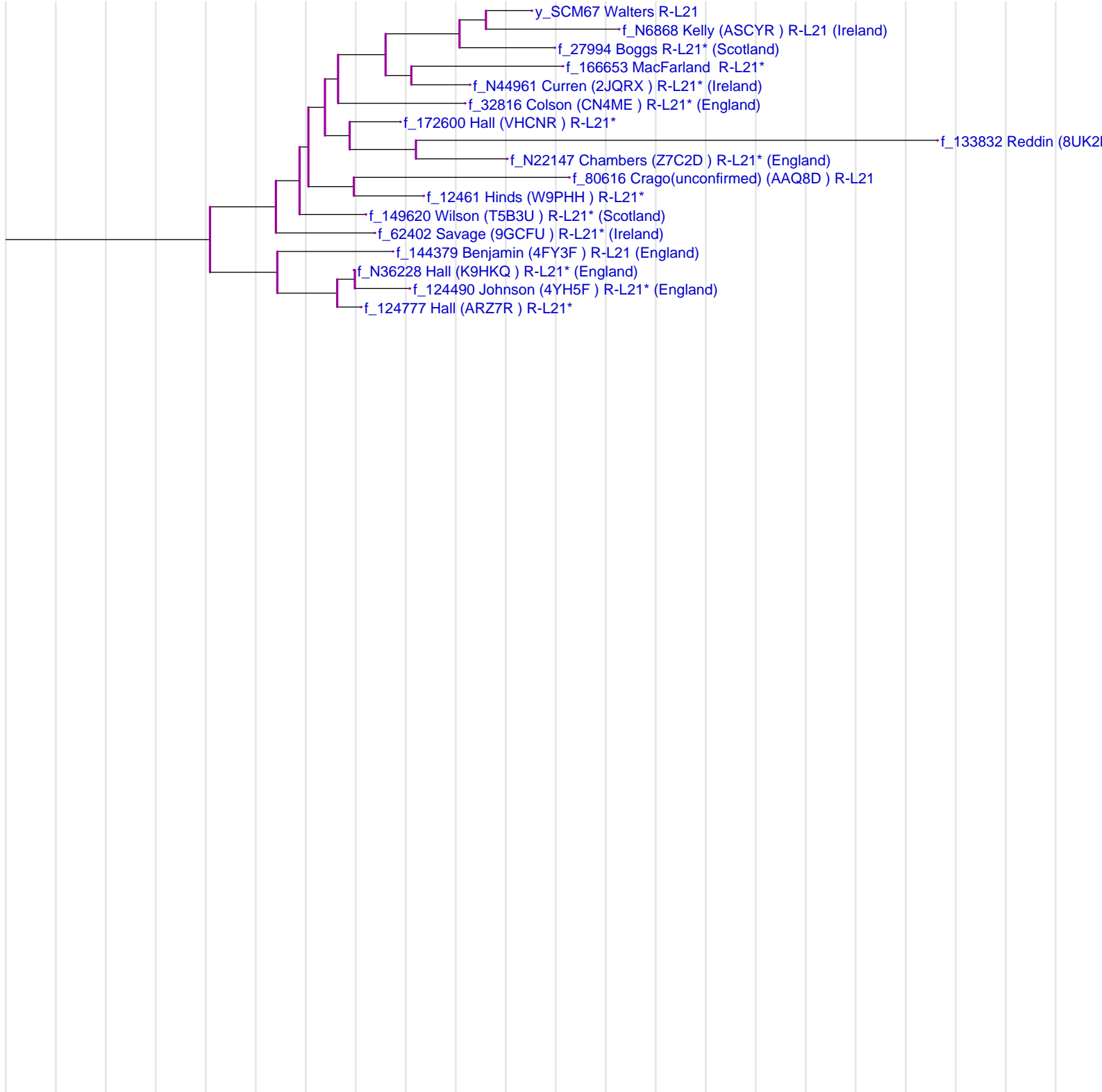


This is the marker distribution for Little Scottish Cluster. The color indicates the relative frequency of the alleles.



Age Analysis

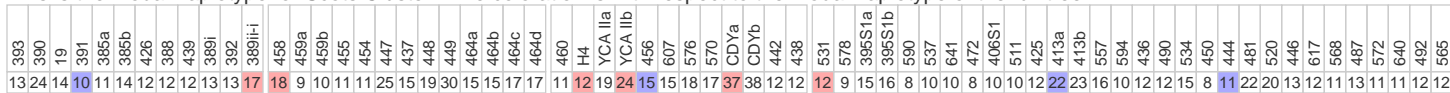
Total number of members	Total number of markers	Total number of mutations	Mutation fraction	Age estimate (in generations)	Age estimate (in years)
17	1139	100	8.78%	45.91±4.81	1147.81±166.162



The vertical grey lines are separated 10 generations apart.

Scots Cluster

This is the modal haplotype for Scots Cluster. The coloration is with respect to the modal haplotype of the full tree.

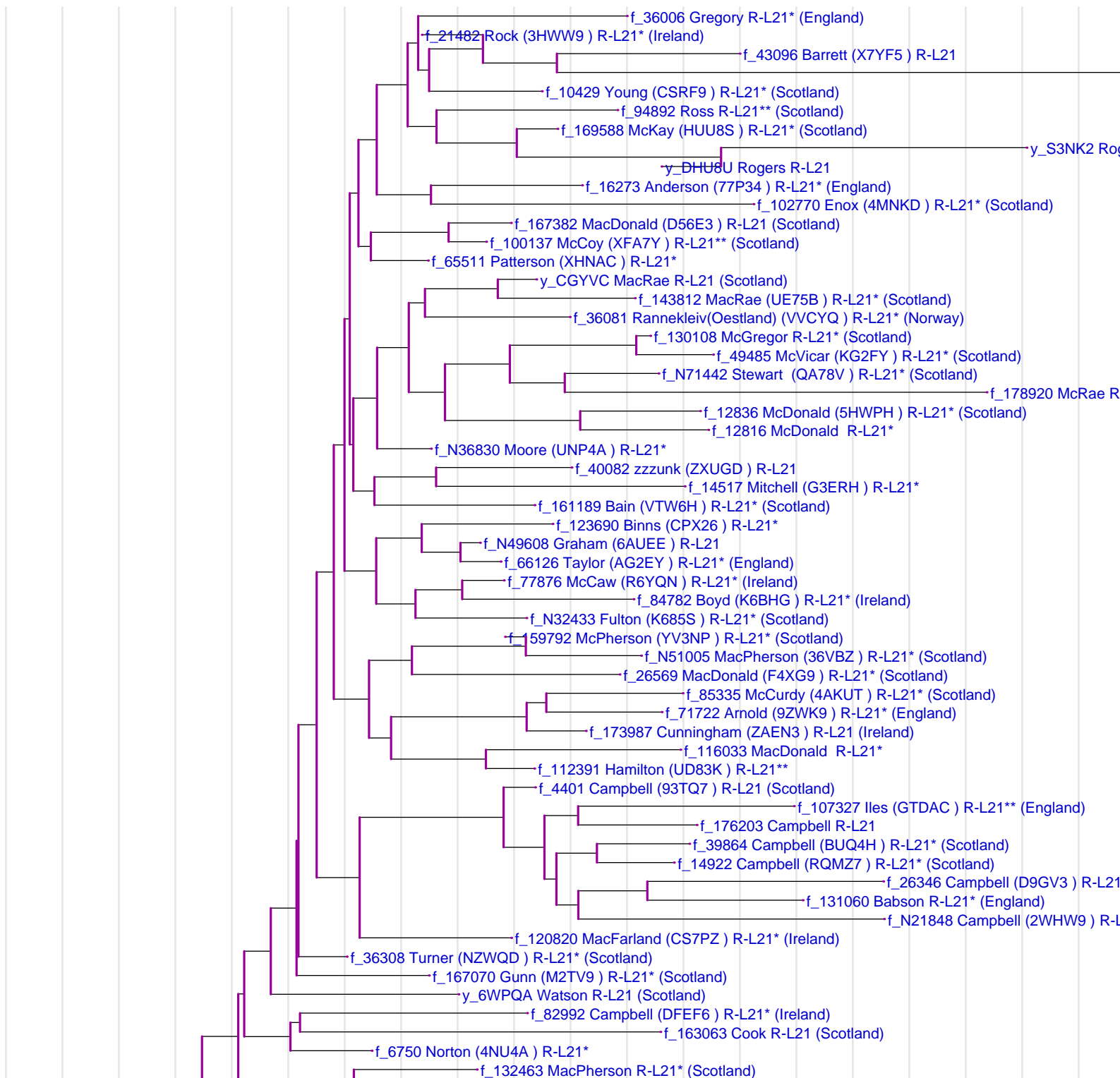


This is the marker distribution for Scots Cluster. The color indicates the relative frequency of the alleles.

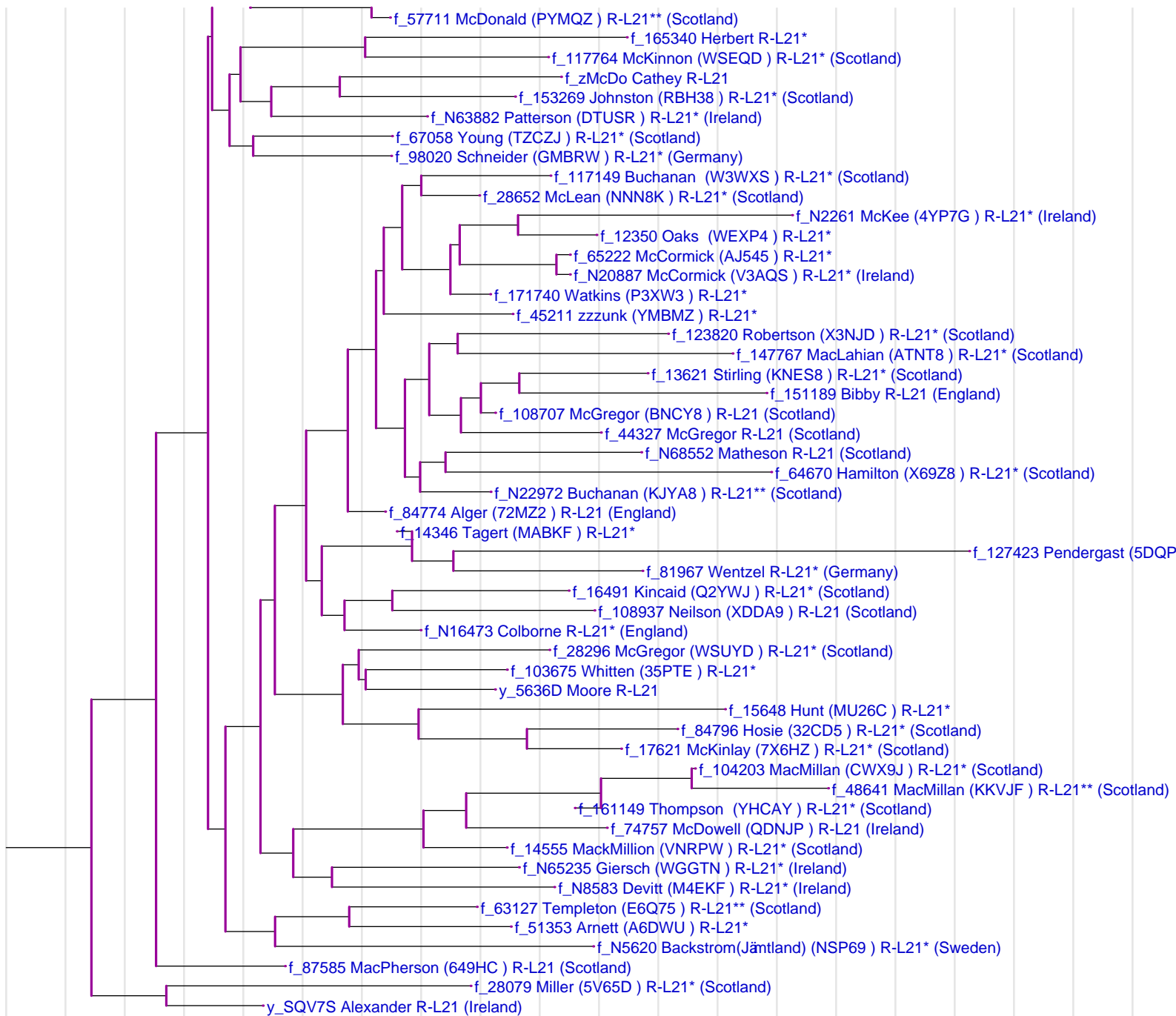


Age Analysis

Total number of members	Total number of markers	Total number of mutations	Mutation fraction	Age estimate (in generations)	Age estimate (in years)
108	7236	786	10.86%	57.43±5.79	1435.69±203.816



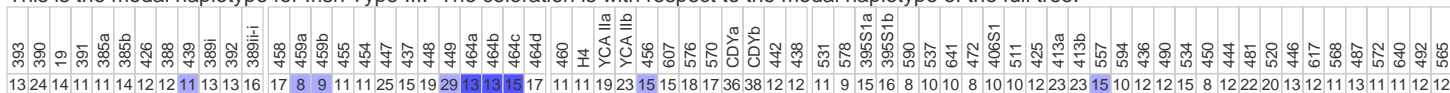
The vertical grey lines are separated 10 generations apart.



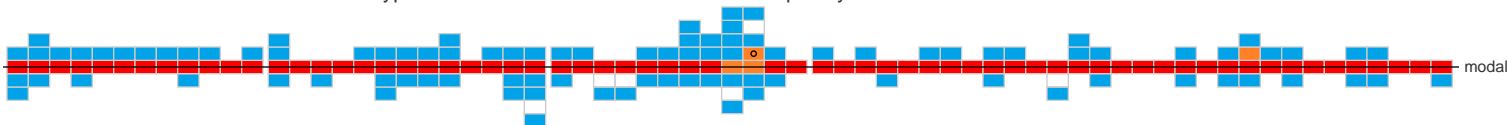
The vertical grey lines are separated 10 generations apart.

Irish Type III

This is the modal haplotype for Irish Type III. The coloration is with respect to the modal haplotype of the full tree.

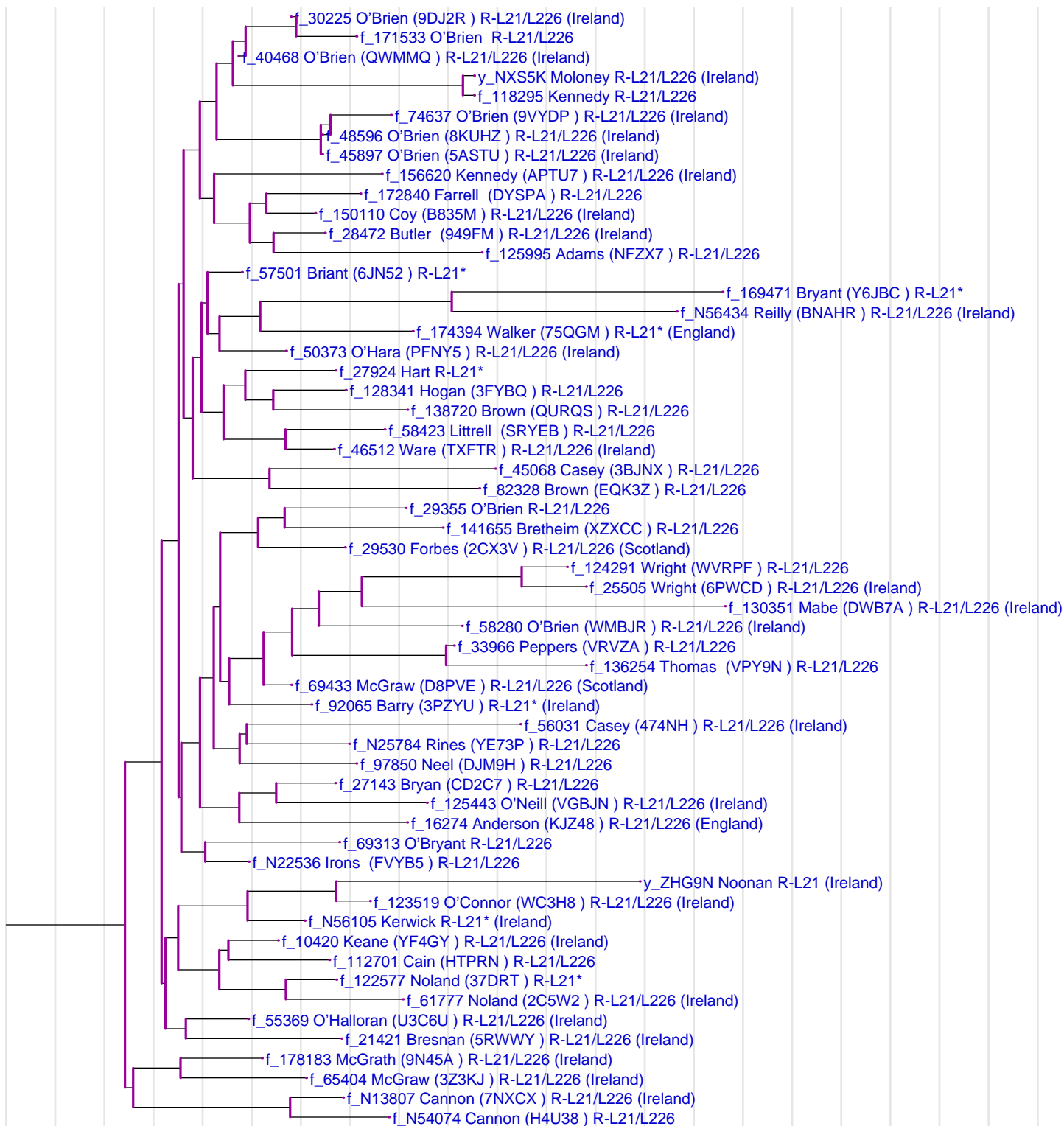


This is the marker distribution for Irish Type III. The color indicates the relative frequency of the alleles.



Age Analysis

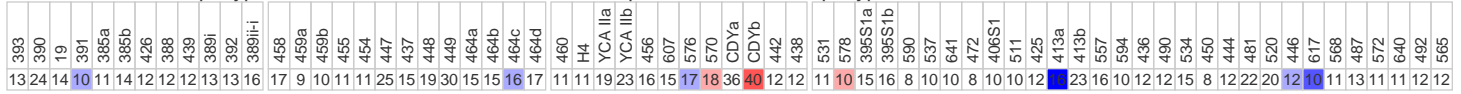
Total number of members	Total number of markers	Total number of mutations	Mutation fraction	Age estimate (in generations)	Age estimate (in years)
57	3819	370	9.69%	50.91±5.16	1272.65±181.271



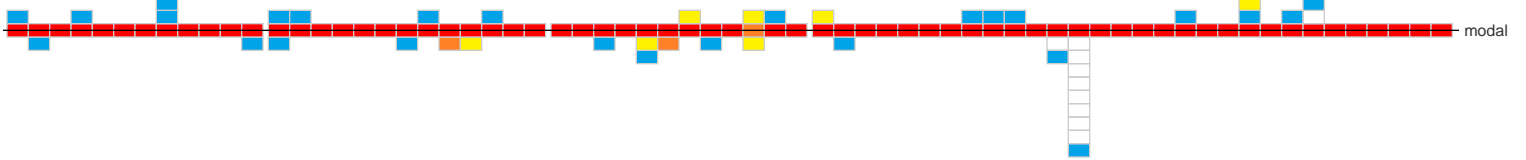
The vertical grey lines are separated 10 generations apart.

R-L144

This is the modal haplotype for R-L144. The coloration is with respect to the modal haplotype of the full tree.



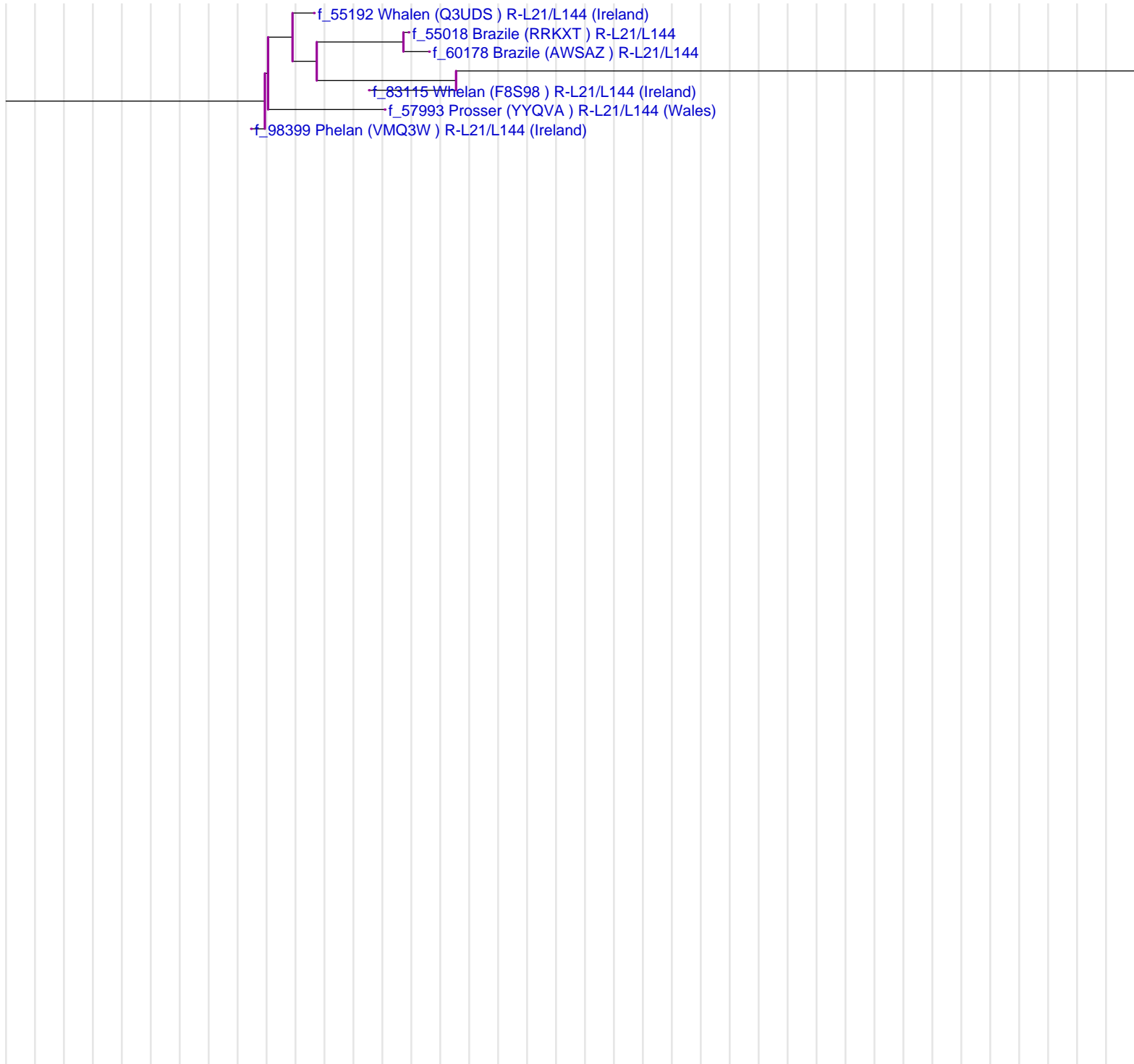
This is the marker distribution for R-L144. The color indicates the relative frequency of the alleles.



Age Analysis

Total number of members	Total number of markers	Total number of mutations	Mutation fraction	Age estimate (in generations)	Age estimate (in years)
7	469	61	13.01%	69.55±7.75	1738.71±260.334

Note: Mr. Sanchez's haplotype is nothing like the other R-L144 haplotypes, and should not be included here. Mike Walsh has him classified as Variety 1113-M12.



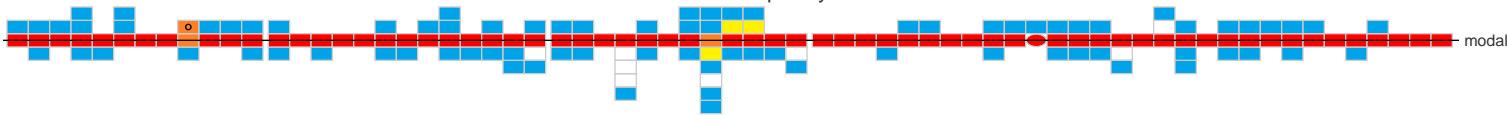
The vertical grey lines are separated 10 generations apart.

Clan Colla

This is the modal haplotype for Clan Colla. The coloration is with respect to the modal haplotype of the full tree.

393	390	19	391	385a	385b	426	388	439	389i	392	389i-1	458	459a	459b	455	454	447	437	448	449	464a	464b	464c	464d	460	H4	YCA IIa	YCA IIb	456	607	576	570	CDYa	CDYb	442	438	531	578	395S1a	395S1b	590	537	641	472	406S1	511	425	413a	413b	557	594	436	490	534	450	444	481	520	446	617	568	487	572	640	492	565
13	24	14	11	11	15	12	12	13	13	13	16	17	9	10	11	11	25	15	19	28	15	15	17	17	11	11	19	23	16	15	18	19	36	37	12	12	11	9	15	16	8	10	10	10	8	10	9	22	23	16	10	12	12	16	8	12	22	20	13	12	11	13	11	11	12	12

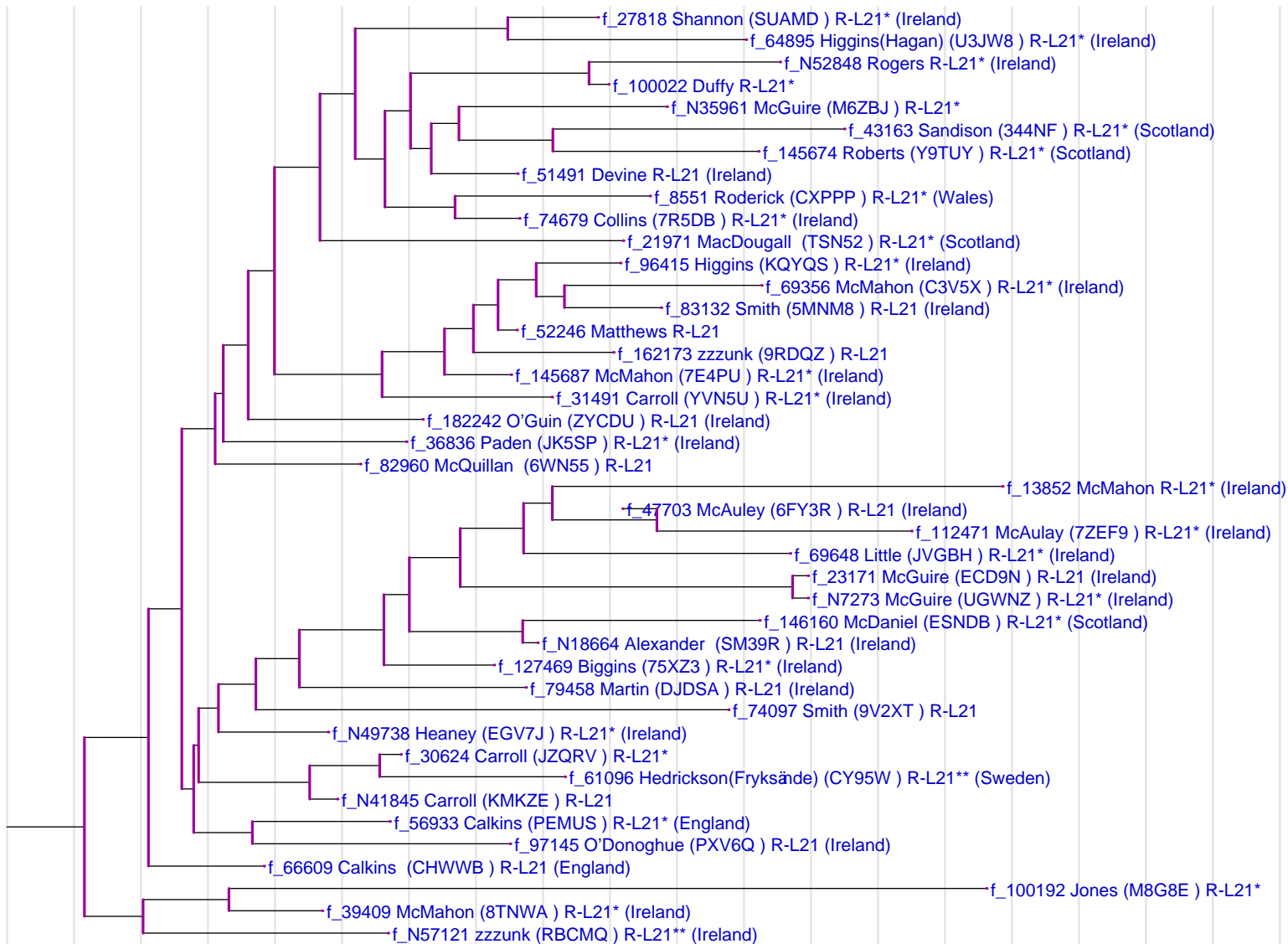
This is the marker distribution for Clan Colla. The color indicates the relative frequency of the alleles.



Age Analysis

Total number of members	Total number of markers	Total number of mutations	Mutation fraction	Age estimate (in generations)	Age estimate (in years)
42	2814	284	10.09%	53.14±5.42	1328.53±189.716

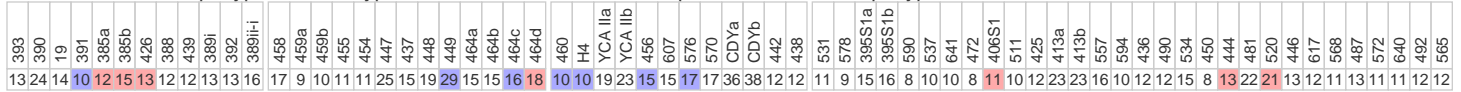
Note: Jones (f100192) isn't null for DYS 425, and so perhaps shouldn't be considered a part of this cluster.



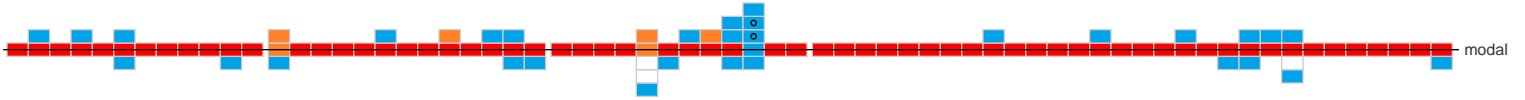
The vertical grey lines are separated 10 generations apart.

Irish Type IV

This is the modal haplotype for Irish Type IV. The coloration is with respect to the modal haplotype of the full tree.



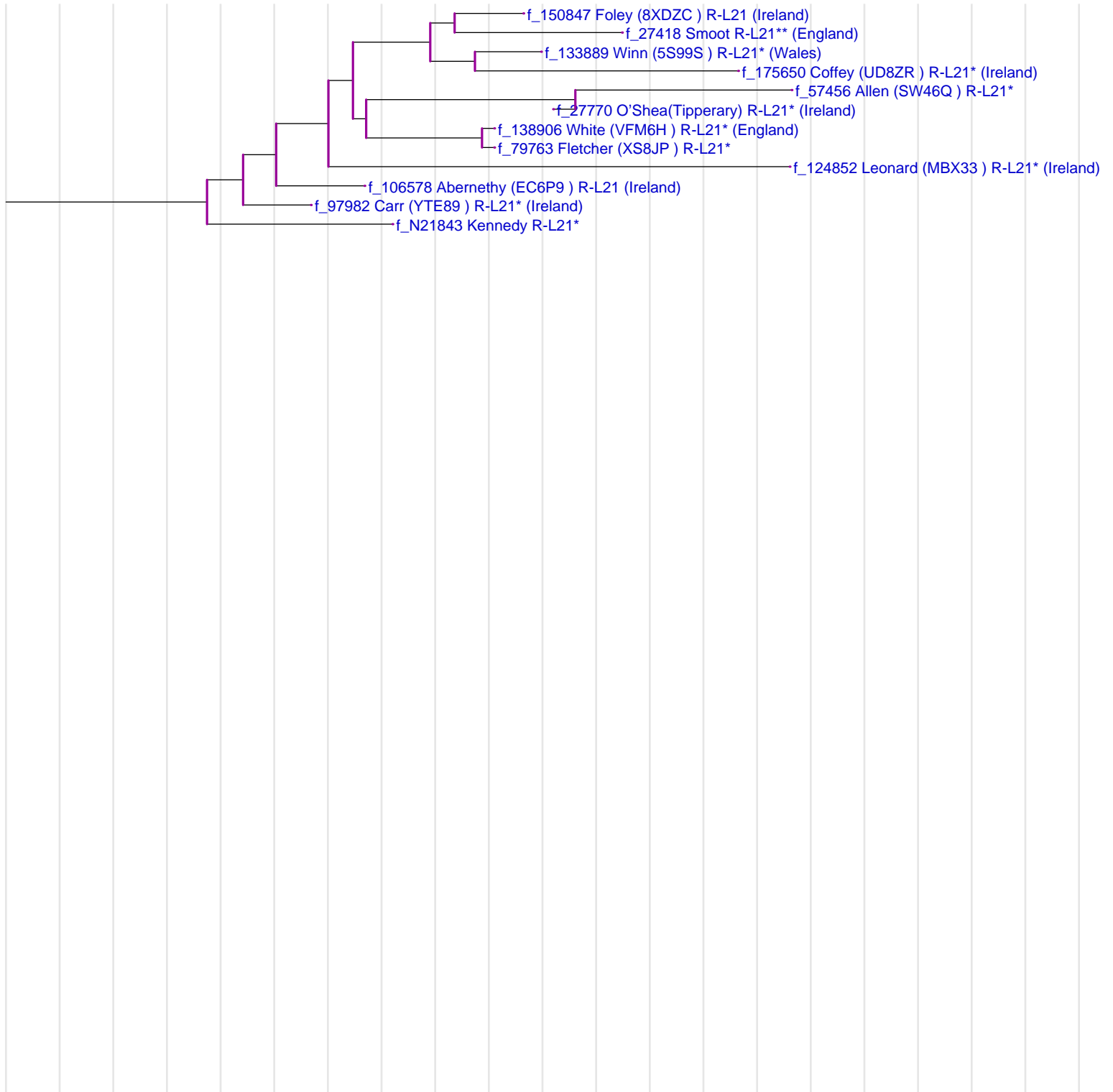
This is the marker distribution for Irish Type IV. The color indicates the relative frequency of the alleles.



Age Analysis

Total number of members	Total number of markers	Total number of mutations	Mutation fraction	Age estimate (in generations)	Age estimate (in years)
12	804	82	10.20%	53.73±5.73	1343.32±196.391

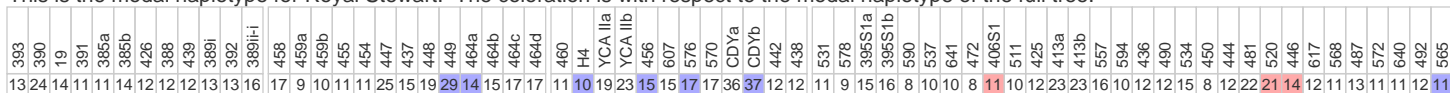
Note: This is Mike's Variety 1310-T4



The vertical grey lines are separated 10 generations apart.

Royal Stewart

This is the modal haplotype for Royal Stewart. The coloration is with respect to the modal haplotype of the full tree.



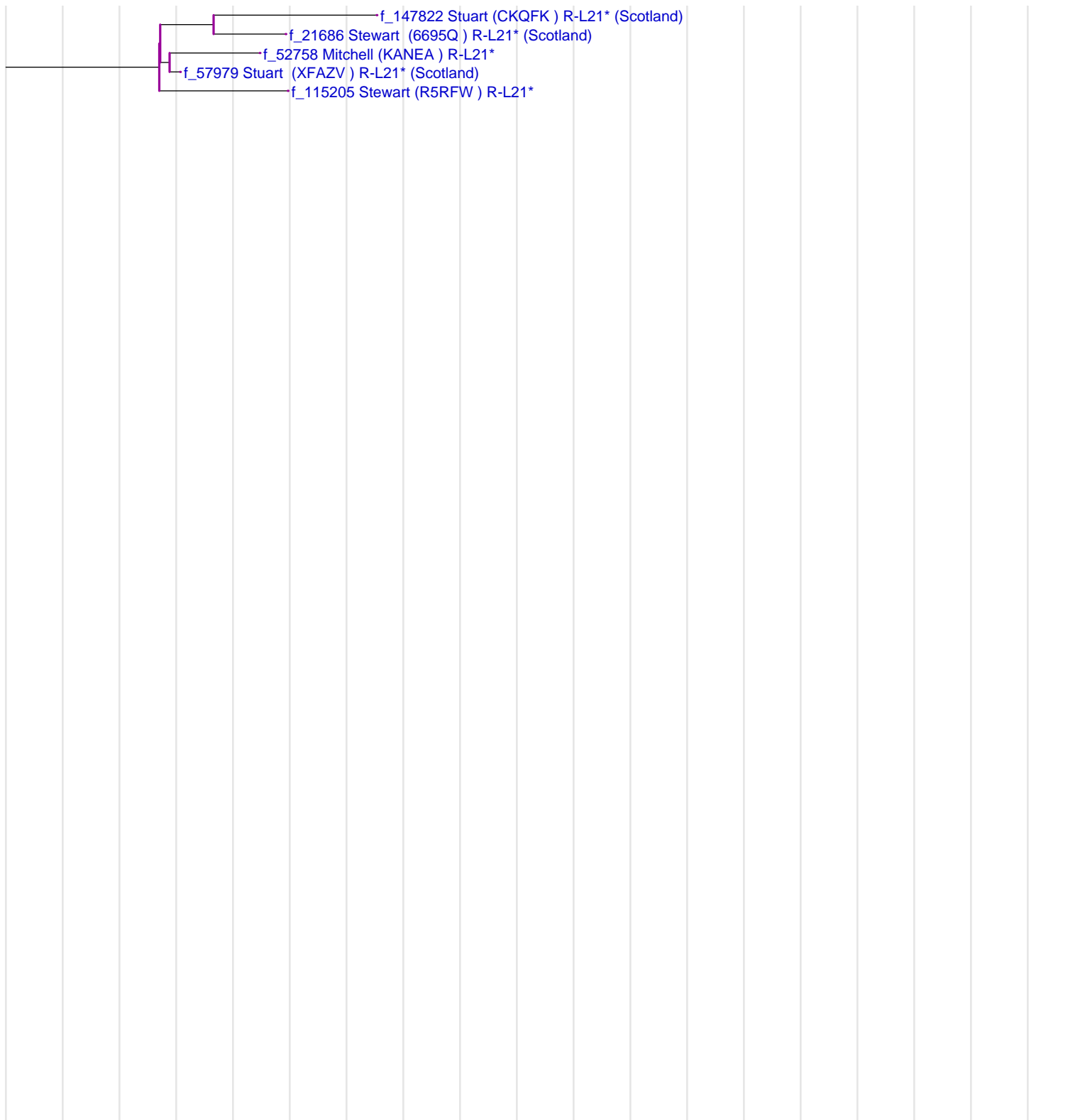
This is the marker distribution for Royal Stewart. The color indicates the relative frequency of the alleles.



Age Analysis

Total number of members	Total number of markers	Total number of mutations	Mutation fraction	Age estimate (in generations)	Age estimate (in years)
5	335	15	4.48%	22.90±2.62	572.517±87.0531

Note: This is essentially Mike's Variety 1110



The vertical grey lines are separated 10 generations apart.

Philips-Powell-Robinson-Smith-Jones Cluster

This is the modal haplotype for Philips-Powell-Robinson-Smith-Jones Cluster. The coloration is with respect to the modal haplotype of the full tree.

393	390	19	391	385a	385b	426	388	439	389i	392	389i-1	458	459a	459b	455	454	447	437	448	449	464a	464b	464c	464d	460	H4	YCA IIa	YCA IIb	456	607	576	570	CDYa	CDYb	442	438	531	578	395S1a	395S1b	590	537	641	472	406S1	511	425	413a	413b	557	594	436	490	534	450	444	481	520	446	617	568	487	572	640	492	565	
13	24	14	11	14	12	12	12	13	13	16	17	9	10	11	11	25	15	19	30	15	15	17	17	11	11	19	23	15	14	18	17	34	39	13	12	11	9	15	16	8	10	10	8	10	10	12	23	23	16	10	10	12	15	15	8	11	22	21	13	12	11	13	11	11	12	12	

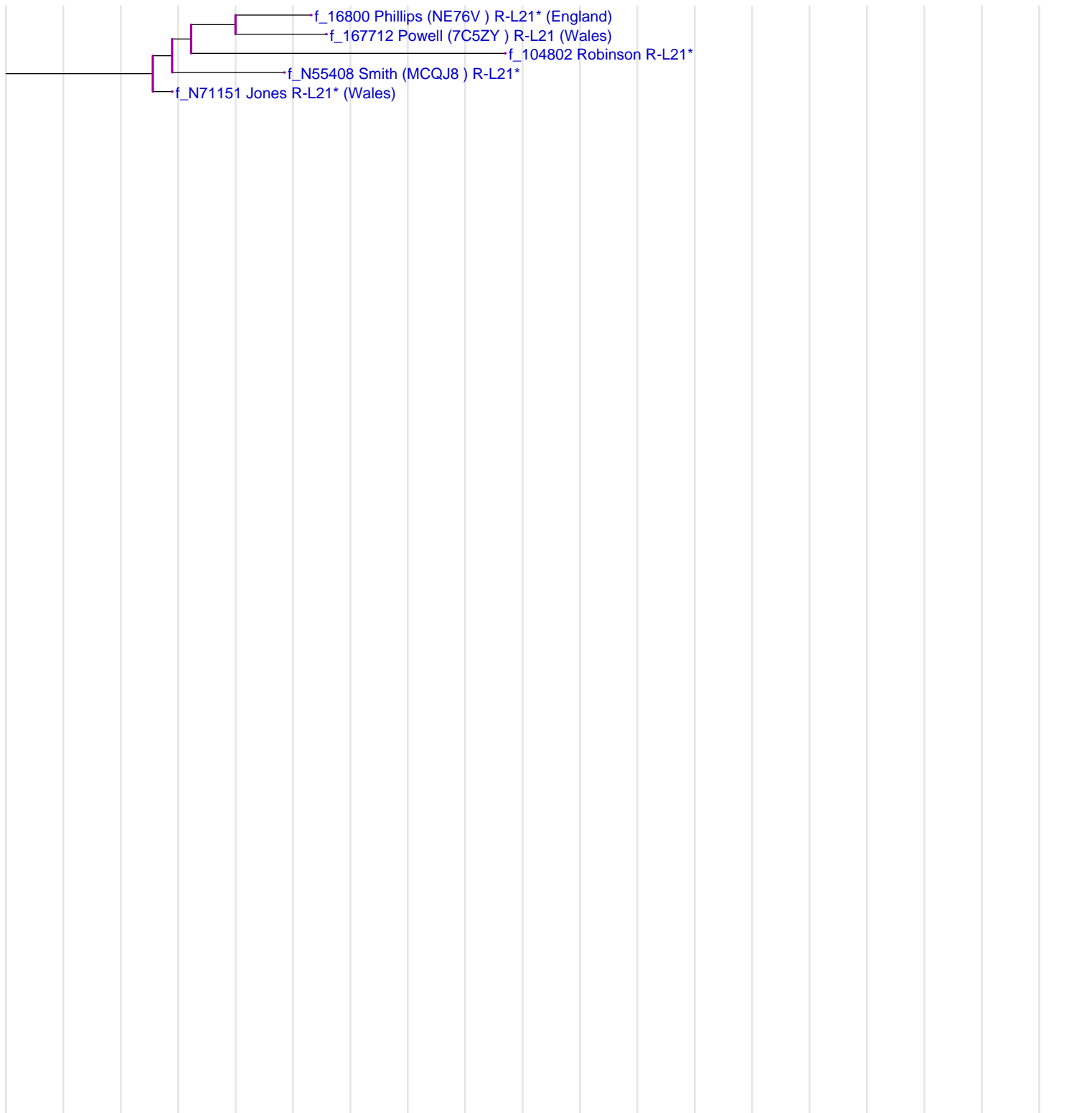
This is the marker distribution for Philips-Powell-Robinson-Smith-Jones Cluster. The color indicates the relative frequency of the alleles.



Age Analysis

Total number of members	Total number of markers	Total number of mutations	Mutation fraction	Age estimate (in generations)	Age estimate (in years)
5	335	19	5.67%	29.19±3.35	729.641±111.032

Note: Mike Walsh has identified this cluster as Variety 1514, but he has two clusters labeled with that same name.



The vertical grey lines are separated 10 generations apart.

Mike's Variety 2410

This is the modal haplotype for Mike's Variety 2410. The coloration is with respect to the modal haplotype of the full tree.

393	390	19	391	385a	385b	426	388	439	389i	392	389i-i	458	459a	459b	455	454	447	437	448	449	464a	464b	464c	464d	460	H4	YCA IIa	YCA IIb	456	607	576	570	CDYa	CDYb	442	438	531	578	395S1a	395S1b	590	537	641	472	406S1	511	425	413a	413b	557	594	436	490	534	450	444	481	520	446	617	568	487	572	640	492	565		
13	24	14	11	11	15	12	12	12	13	13	16	17	9	10	11	11	25	15	20	30	15	16	17	17	11	10	19	24	15	15	18	18	16	36	39	12	12	11	9	15	16	8	10	10	8	10	10	12	23	23	16	10	12	12	12	16	8	12	22	20	13	12	11	13	11	11	12	12

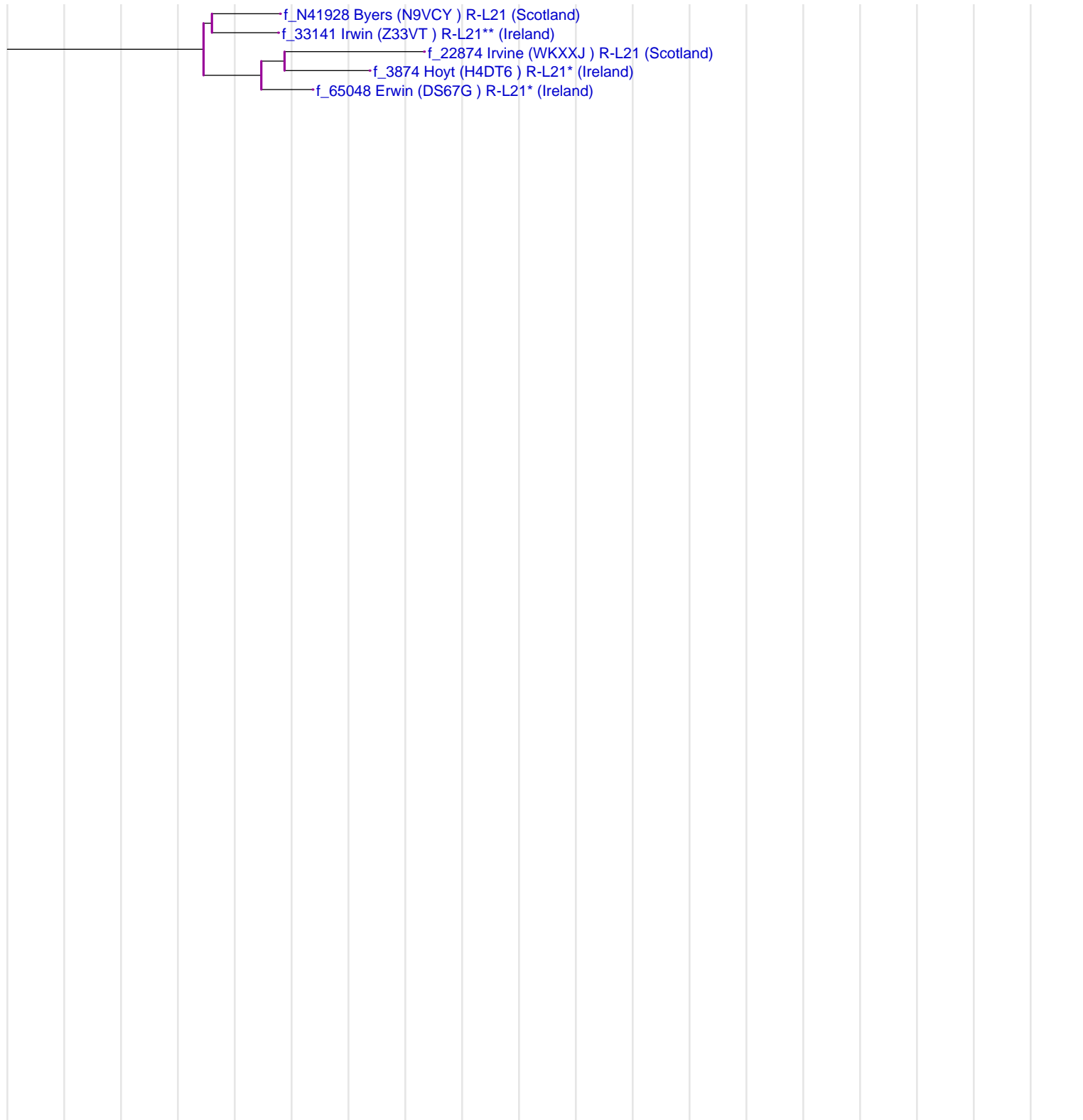
This is the marker distribution for Mike's Variety 2410. The color indicates the relative frequency of the alleles.



Age Analysis

Total number of members	Total number of markers	Total number of mutations	Mutation fraction	Age estimate (in generations)	Age estimate (in years)
5	335	14	4.18%	21.34±2.44	533.535±81.1098

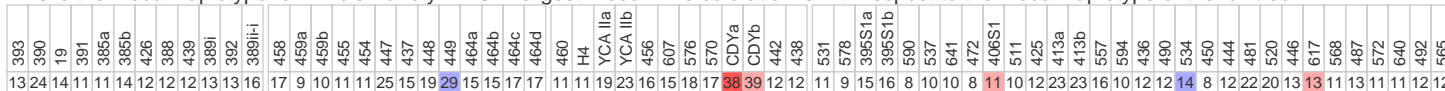
Note: This cluster does not include Lewis (f44100), although Mike has him classified as 2410 also.



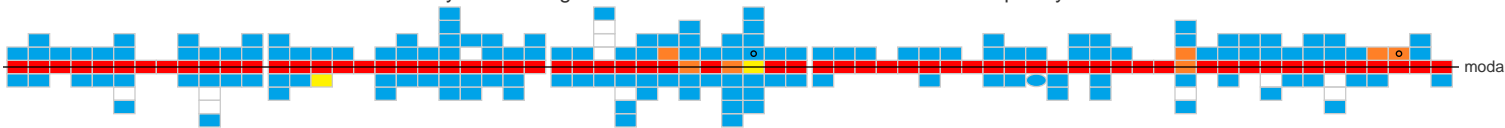
The vertical grey lines are separated 10 generations apart.

Mike's Variety 1113 - Largest Piece

This is the modal haplotype for Mike's Variety 1113 - Largest Piece. The coloration is with respect to the modal haplotype of the full tree.



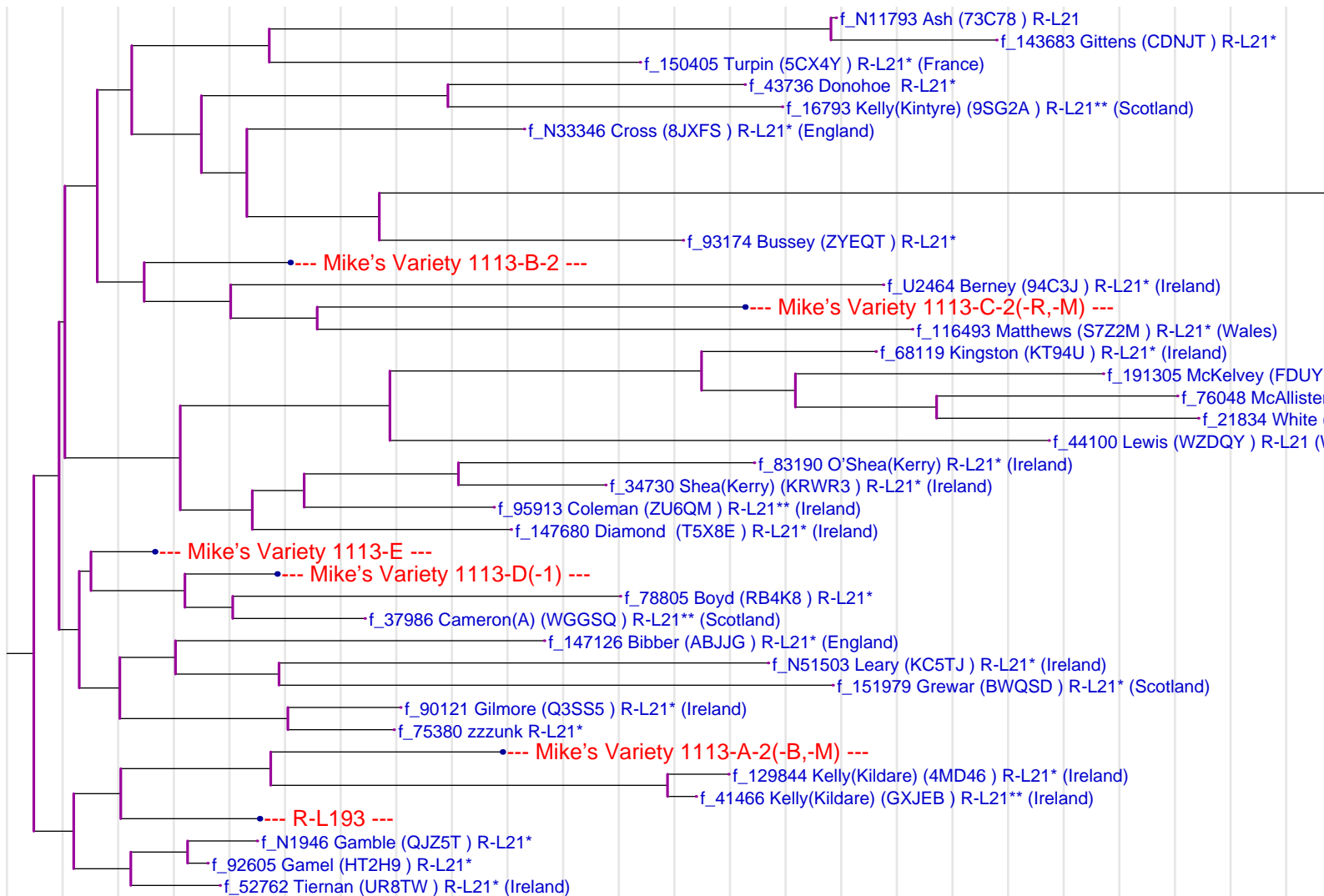
This is the marker distribution for Mike's Variety 1113 - Largest Piece. The color indicates the relative frequency of the alleles.



Age Analysis

Total number of members	Total number of markers	Total number of mutations	Mutation fraction	Age estimate (in generations)	Age estimate (in years)
120	8040	1608	20.00%	111.07±11.19	2776.75±394.167

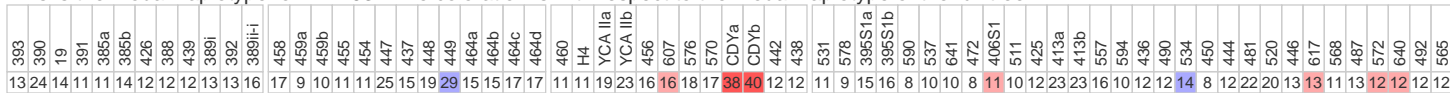
Note: The 1113 Cluster appears as several pieces on the tree. This is the largest piece.



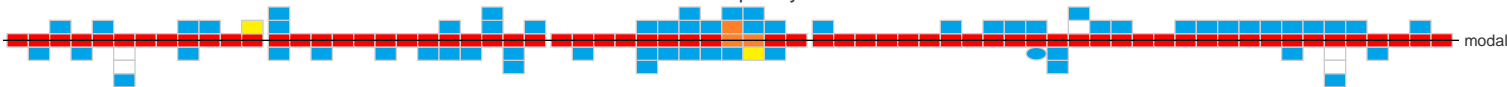
The vertical grey lines are separated 10 generations apart.

R-L193

This is the modal haplotype for R-L193. The coloration is with respect to the modal haplotype of the full tree.



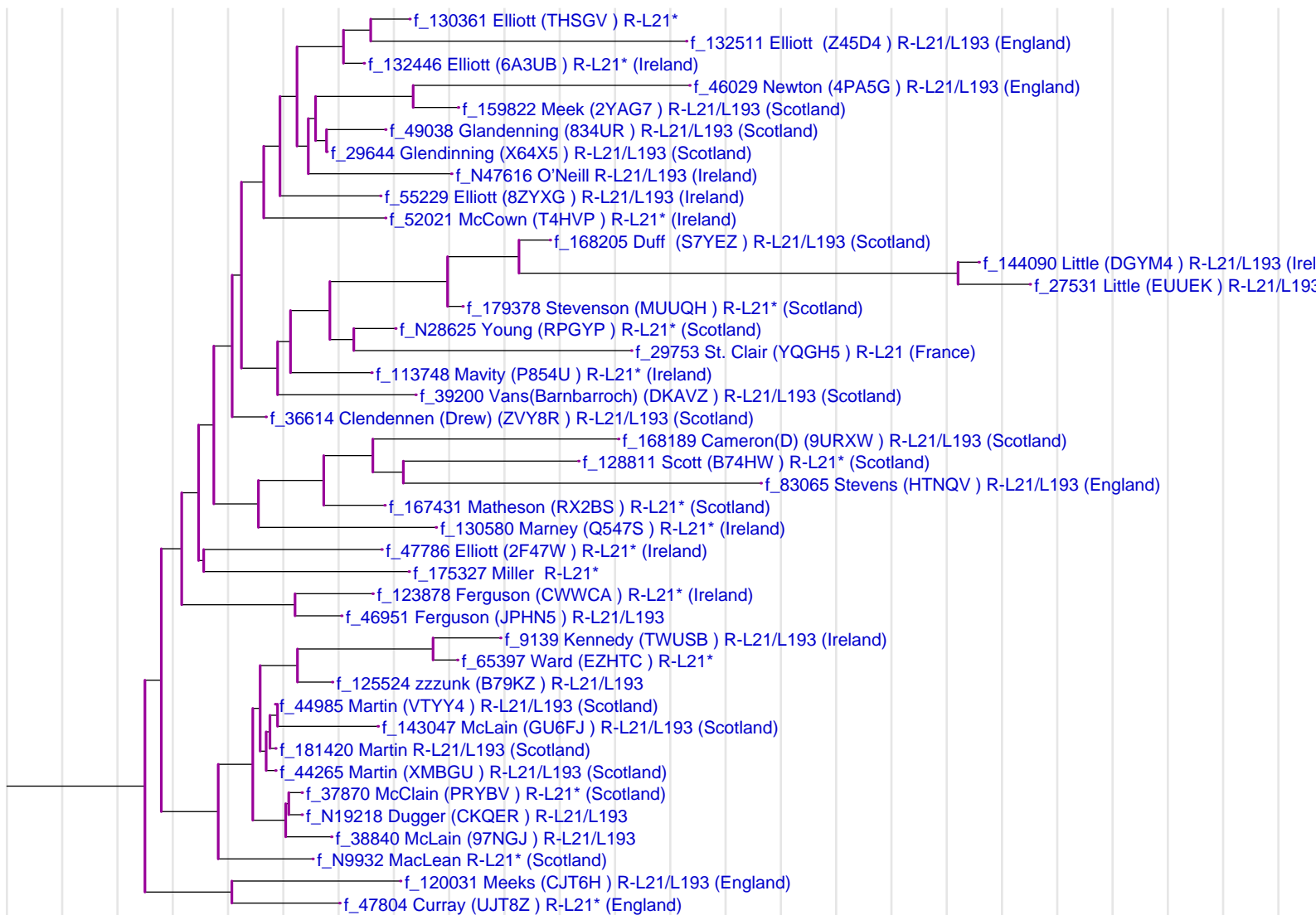
This is the marker distribution for R-L193. The color indicates the relative frequency of the alleles.



Age Analysis

Total number of members	Total number of markers	Total number of mutations	Mutation fraction	Age estimate (in generations)	Age estimate (in years)
41	2747	232	8.45%	44.09±4.50	1102.21±157.41

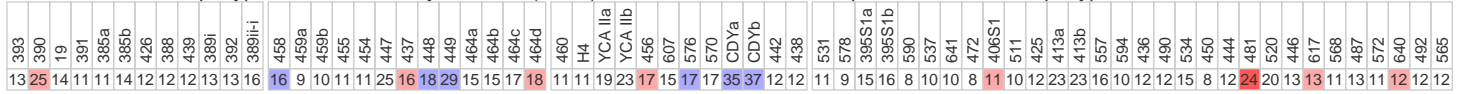
Note: Unlike everyone else in the cluster, MacLean (N9932) has DYS 572 = 11 and not 12.



The vertical grey lines are separated 10 generations apart.

Mike's Variety 1113-A-2(-B,-M)

This is the modal haplotype for Mike's Variety 1113-A-2(-B,-M). The coloration is with respect to the modal haplotype of the full tree.

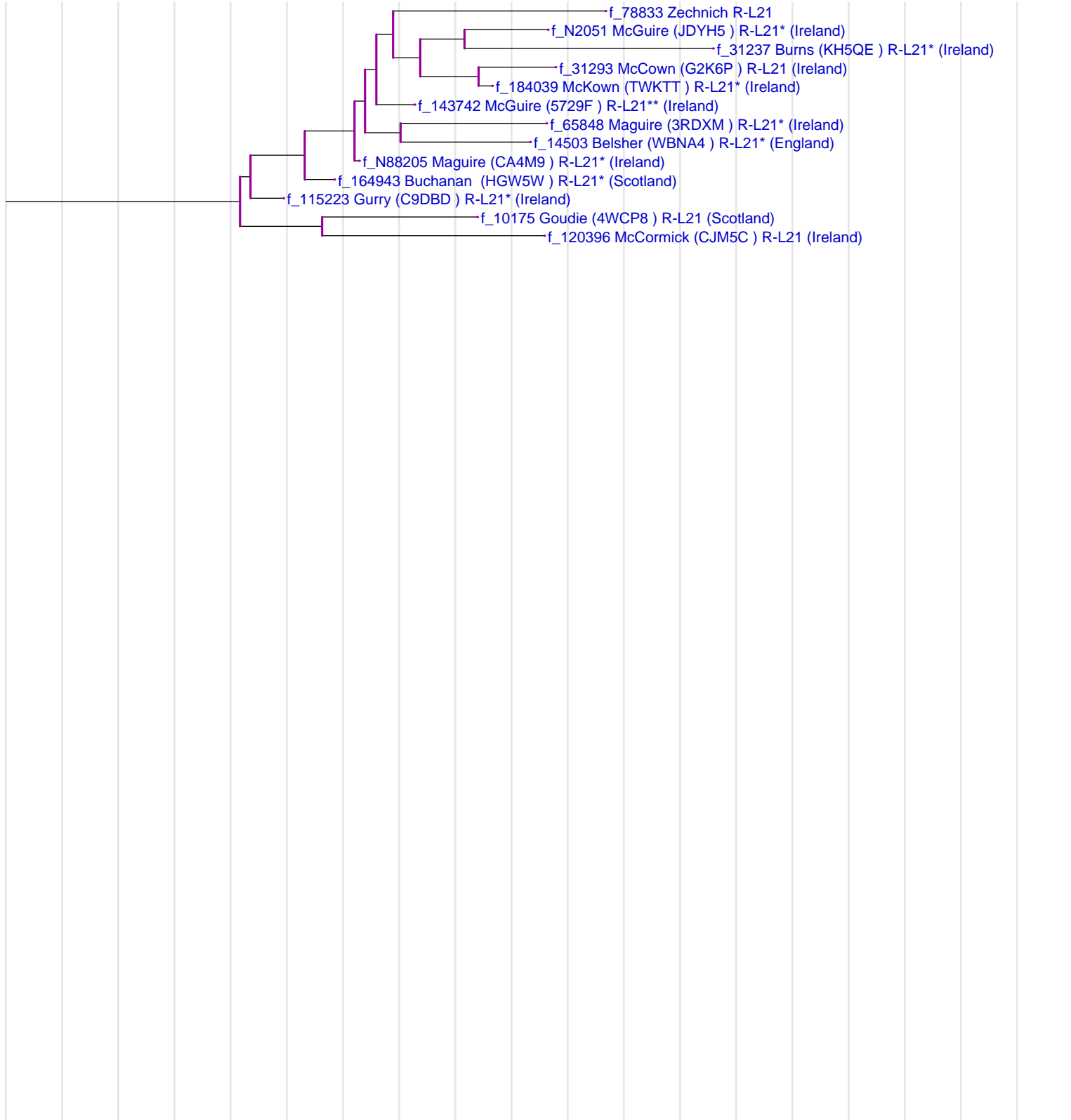


This is the marker distribution for Mike's Variety 1113-A-2(-B,-M). The color indicates the relative frequency of the alleles.



Age Analysis

Total number of members	Total number of markers	Total number of mutations	Mutation fraction	Age estimate (in generations)	Age estimate (in years)
13	871	58	6.66%	34.44±3.65	861.034±125.445



The vertical grey lines are separated 10 generations apart.

Mike's Variety 1113-B-2

This is the modal haplotype for Mike's Variety 1113-B-2. The coloration is with respect to the modal haplotype of the full tree.

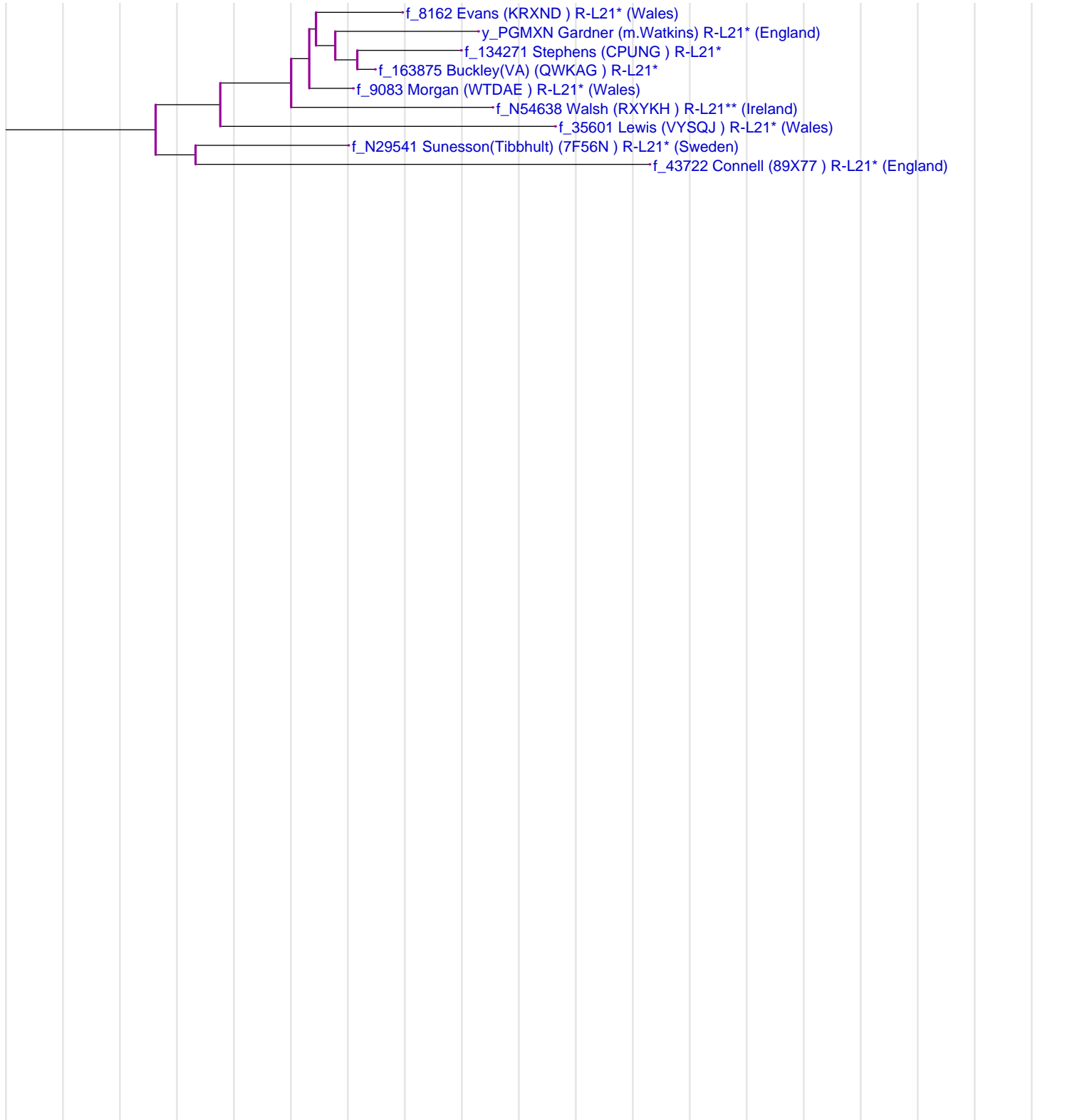
393	390	391	385a	385b	426	388	439	389i	392	389f-i	458	459a	459b	455	454	447	437	448	449	464a	464b	464c	464d	460	H4	YCA IIa	YCA IIb	456	607	576	570	CDYa	CDYb	442	438	531	578	395S1a	395S1b	590	537	641	472	406S1	511	425	413a	413b	557	594	436	490	534	450	444	481	520	446	617	568	487	572	640	492	565
13	24	15	11	14	12	12	13	13	16	17	9	10	11	11	25	15	19	31	15	15	17	17	11	11	18	23	16	15	18	18	38	39	12	12	11	9	15	15	8	10	10	8	11	10	12	23	23	16	10	12	12	15	8	13	22	20	13	13	11	13	11	11	12	12	

This is the marker distribution for Mike's Variety 1113-B-2. The color indicates the relative frequency of the alleles.



Age Analysis

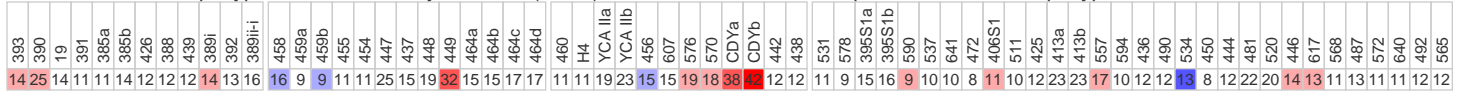
Total number of members	Total number of markers	Total number of mutations	Mutation fraction	Age estimate (in generations)	Age estimate (in years)
9	603	49	8.13%	42.35±4.60	1058.75±156.307



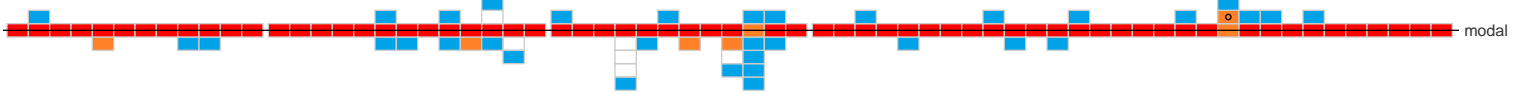
The vertical grey lines are separated 10 generations apart.

Mike's Variety 1113-C-2(-R,-M)

This is the modal haplotype for Mike's Variety 1113-C-2(-R,-M). The coloration is with respect to the modal haplotype of the full tree.



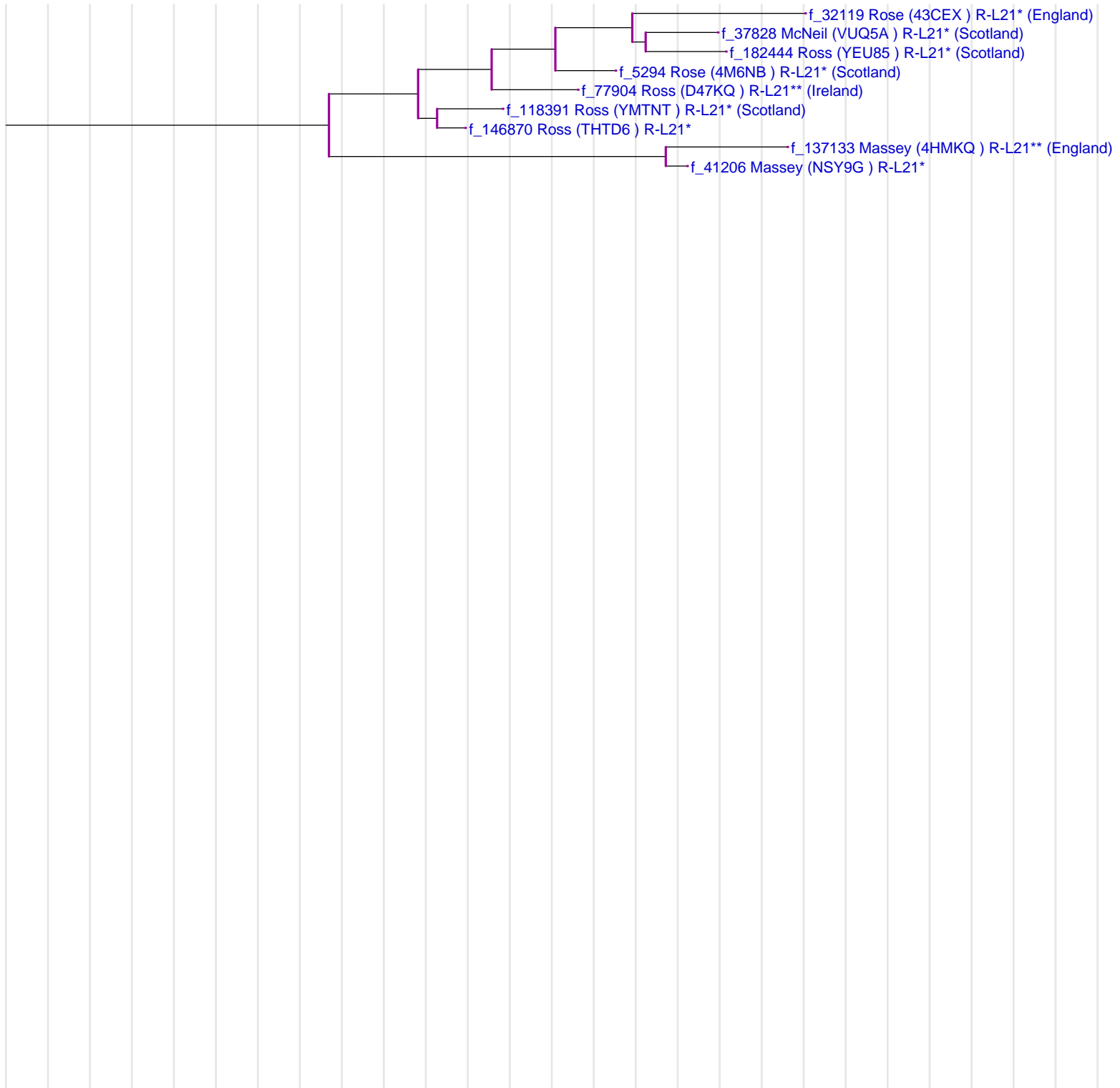
This is the marker distribution for Mike's Variety 1113-C-2(-R,-M). The color indicates the relative frequency of the alleles.



Age Analysis

Total number of members	Total number of markers	Total number of mutations	Mutation fraction	Age estimate (in generations)	Age estimate (in years)
9	603	72	11.94%	63.49±6.91	1587.18±234.679

Note: The Masseys are 1113-C-2-M, while the Roses (or Rosses) are 1113-C-2-R.



The vertical grey lines are separated 10 generations apart.

Mike's Variety 1113-E

This is the modal haplotype for Mike's Variety 1113-E. The coloration is with respect to the modal haplotype of the full tree.

393	390	19	391	385a	385b	426	388	439	389i	392	389i-i	458	459a	459b	455	454	447	437	448	449	464a	464b	464c	464d	460	H4	YCA IIa	YCA IIb	456	607	576	570	CDYa	CDYb	442	438	531	578	395S1a	395S1b	590	537	641	472	406S1	511	425	413a	413b	557	594	436	490	534	450	444	481	520	446	617	568	487	572	640	492	565
13	24	14	11	14	12	12	12	13	13	16	17	9	10	11	11	25	15	18	29	15	15	17	18	11	11	19	23	16	15	18	17	36	37	12	12	11	9	15	16	8	10	10	8	11	10	12	23	23	16	10	12	12	15	8	12	22	20	13	13	11	13	11	11	12	12	

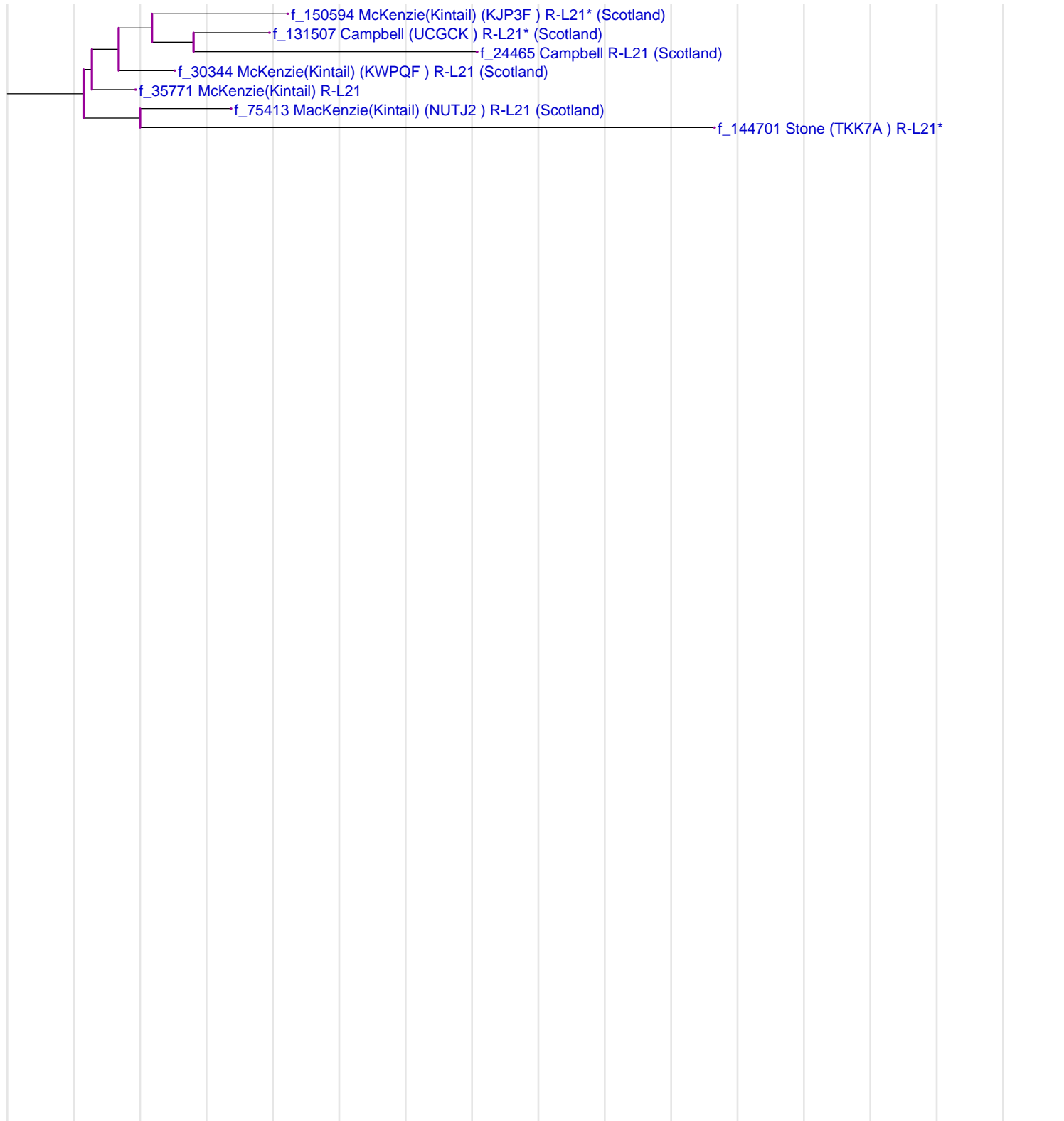
This is the marker distribution for Mike's Variety 1113-E. The color indicates the relative frequency of the alleles.



Age Analysis

Total number of members	Total number of markers	Total number of mutations	Mutation fraction	Age estimate (in generations)	Age estimate (in years)
7	469	29	6.18%	31.90±3.53	797.572±119.012

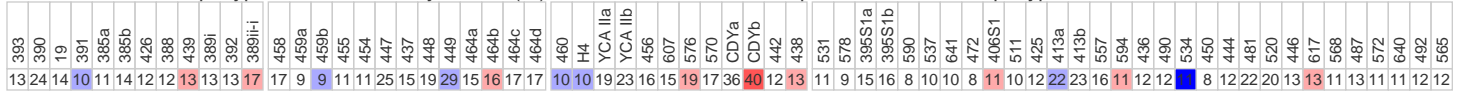
Note: Stone is not 1113-E although he is 1113.



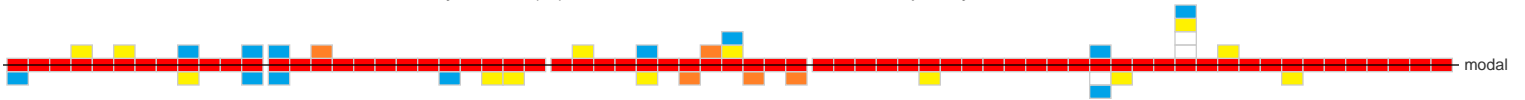
The vertical grey lines are separated 10 generations apart.

Mike's Variety 1113-D(-1)

This is the modal haplotype for Mike's Variety 1113-D(-1). The coloration is with respect to the modal haplotype of the full tree.



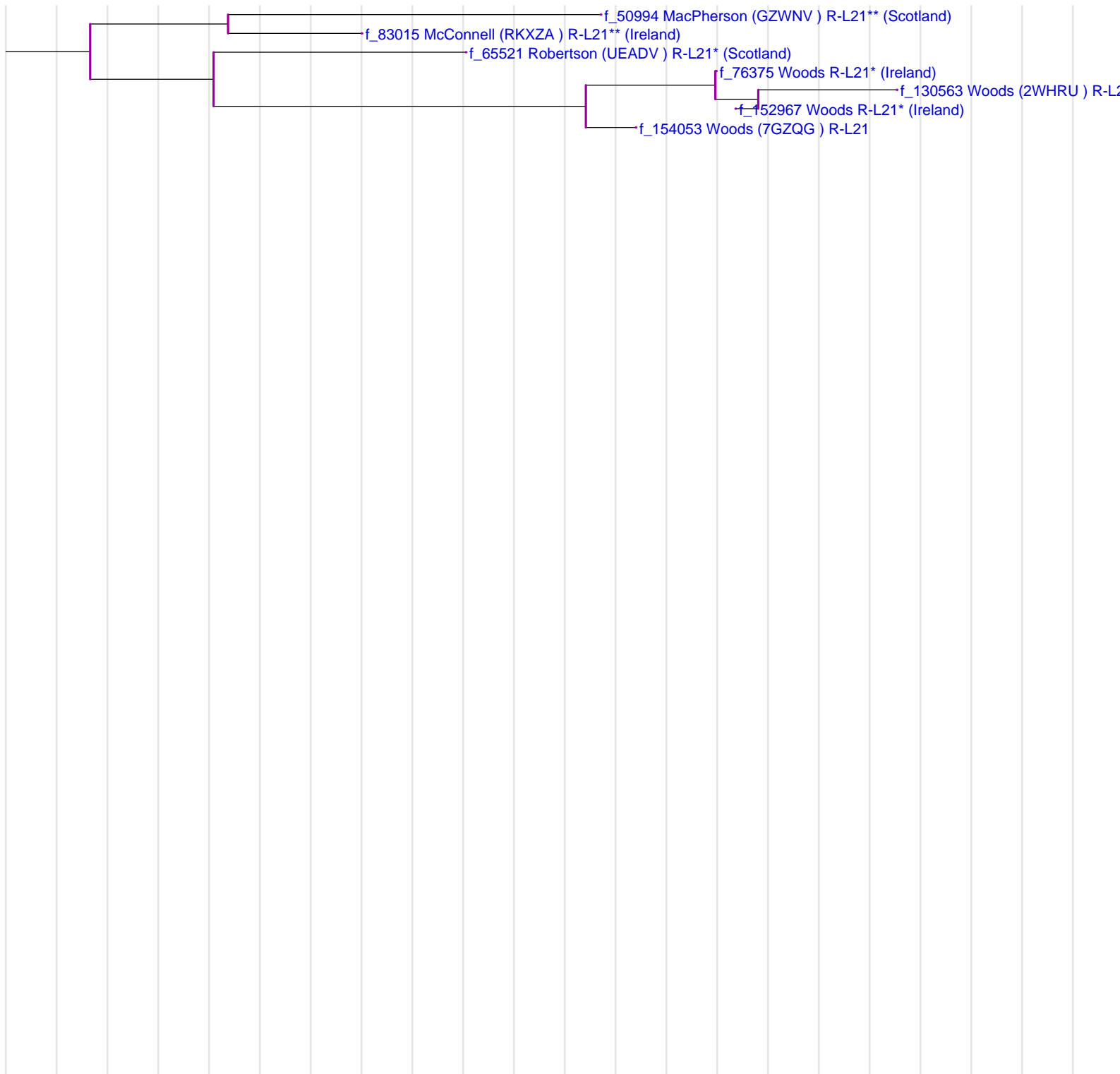
This is the marker distribution for Mike's Variety 1113-D(-1). The color indicates the relative frequency of the alleles.



Age Analysis

Total number of members	Total number of markers	Total number of mutations	Mutation fraction	Age estimate (in generations)	Age estimate (in years)
7	469	61	13.01%	69.55±7.75	1738.71±260.334

Note: McConnell and MacPherson are what Mike classifies as Variety 1113-D-1.



The vertical grey lines are separated 10 generations apart.

R-P314.2

This is the modal haplotype for R-P314.2. The coloration is with respect to the modal haplotype of the full tree.

393	390	19	391	385a	385b	426	388	439	389i	392	389i-i	458	459a	459b	455	454	447	437	448	449	464a	464b	464c	464d	460	H4	YCA IIa	YCA IIb	456	607	576	570	CDYa	CDYb	442	438	531	578	395S1a	395S1b	590	537	641	472	406S1	511	425	413a	413b	557	594	436	490	534	444	444	481	520	446	617	568	487	572	640	492	565		
13	23	14	11	11	14	12	13	13	13	13	15	17	9	10	11	11	26	15	19	29	15	15	16	17	10	11	19	23	16	15	18	18	37	38	12	12	11	9	16	16	8	8	10	10	8	11	10	12	23	23	16	16	10	12	12	15	8	12	22	20	13	12	11	13	11	11	12	12

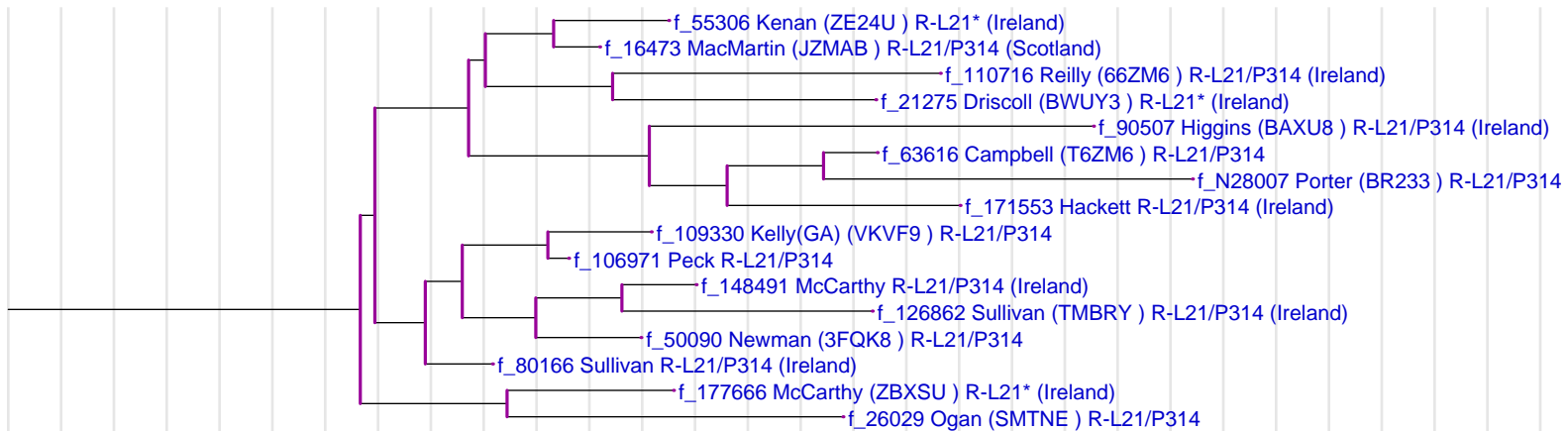
This is the marker distribution for R-P314.2. The color indicates the relative frequency of the alleles.



Age Analysis

Total number of members	Total number of markers	Total number of mutations	Mutation fraction	Age estimate (in generations)	Age estimate (in years)
16	1072	155	14.46%	77.92±8.20	1947.95±282.772

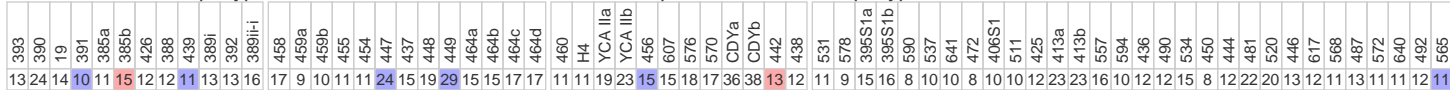
Note: Mike Walsh has divided R-P314.2 into two groups, those with *DYS617*=12, and those with *DYS617*=13.



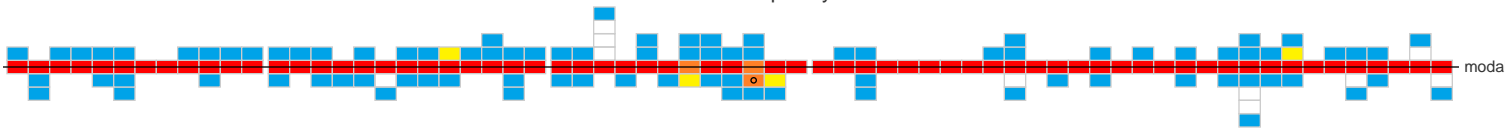
The vertical grey lines are separated 10 generations apart.

South Irish

This is the modal haplotype for South Irish. The coloration is with respect to the modal haplotype of the full tree.



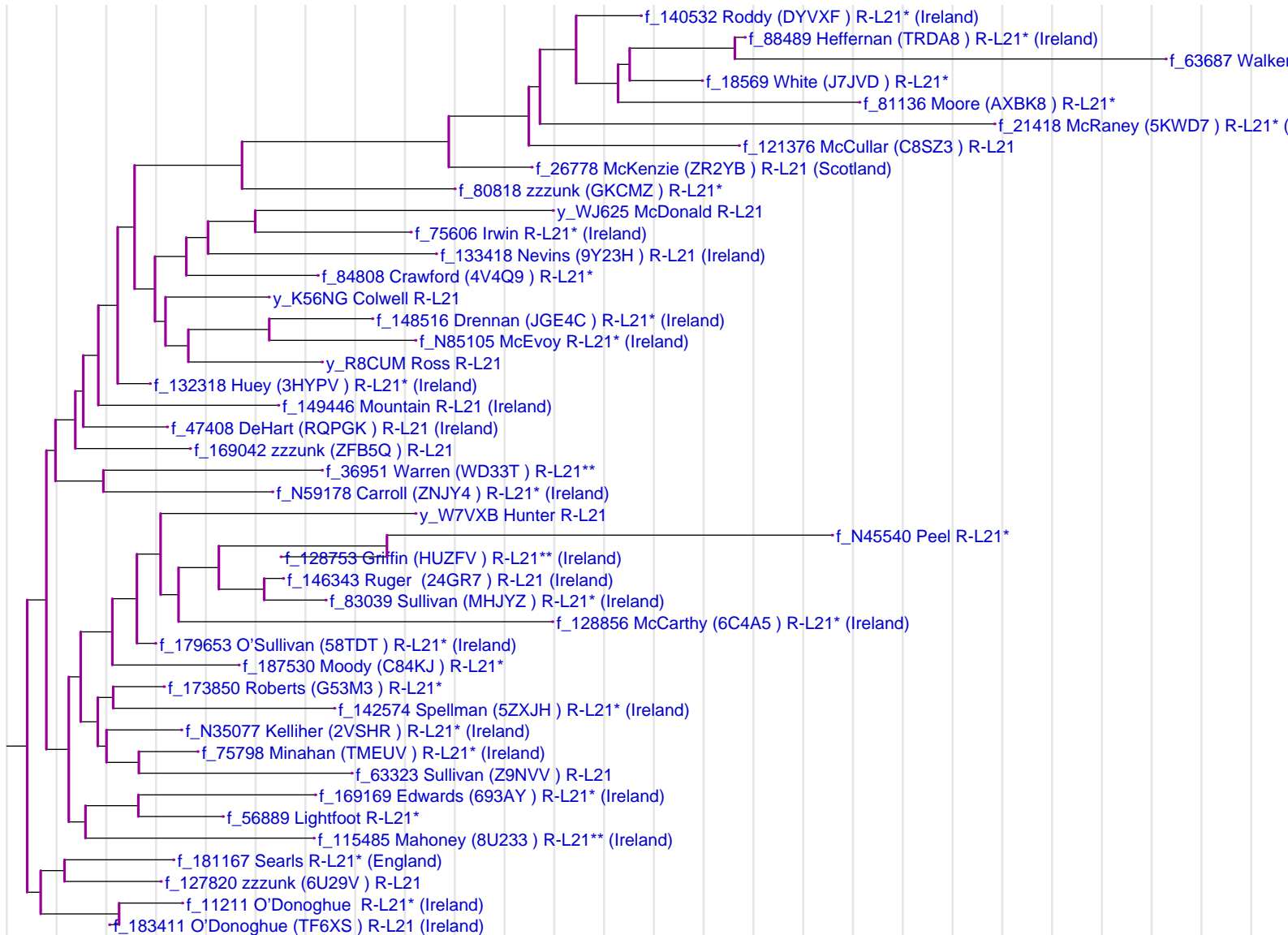
This is the marker distribution for South Irish. The color indicates the relative frequency of the alleles.



Age Analysis

Total number of members	Total number of markers	Total number of mutations	Mutation fraction	Age estimate (in generations)	Age estimate (in years)
43	2881	330	11.45%	60.75±6.19	1518.68±216.847

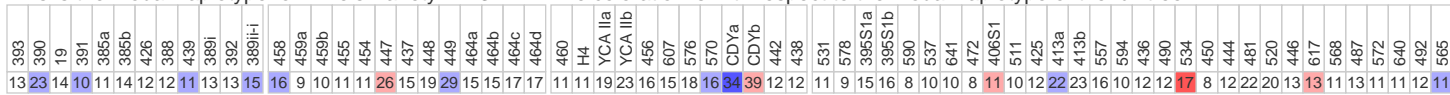
Note: This is Mike's Variety 1511-A-T2. It's not clear who should be included in this cluster near to where it connects to rest of tree.



The vertical grey lines are separated 10 generations apart.

Mike's Variety 1113-D-2

This is the modal haplotype for Mike's Variety 1113-D-2. The coloration is with respect to the modal haplotype of the full tree.

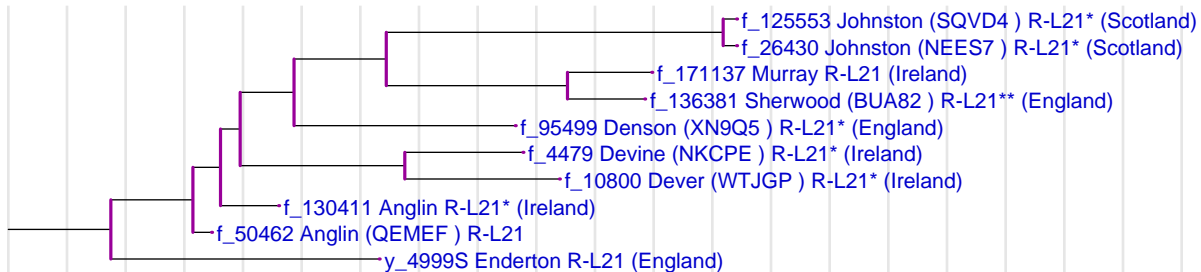


This is the marker distribution for Mike's Variety 1113-D-2. The color indicates the relative frequency of the alleles.



Age Analysis

Total number of members	Total number of markers	Total number of mutations	Mutation fraction	Age estimate (in generations)	Age estimate (in years)
10	670	74	11.04%	58.45±6.31	1461.21±215.061



The vertical grey lines are separated 10 generations apart.

R-L159.2

This is the modal haplotype for R-L159.2. The coloration is with respect to the modal haplotype of the full tree.

393	390	19	391	385a	385b	426	388	439	389i	392	389i-1	458	459a	459b	455	454	447	437	448	449	464a	464b	464c	464d	460	H4	YCA IIa	YCA IIb	466	607	576	576	570	CDYa	CDYb	442	438	531	578	395S1a	395S1b	590	590	590	590	641	472	406S1	511	425	413a	413b	557	594	436	490	534	444	444	481	520	446	617	568	487	572	640	492	565
13	24	14	11	11	14	12	12	12	14	13	16	17	9	10	11	11	25	15	18	30	15	15	17	17	11	11	19	23	16	15	18	18	39	40	11	12	11	9	15	16	8	10	10	10	8	10	10	12	23	23	17	10	10	12	12	15	8	12	22	20	14	12	11	13	11	11	12	12	

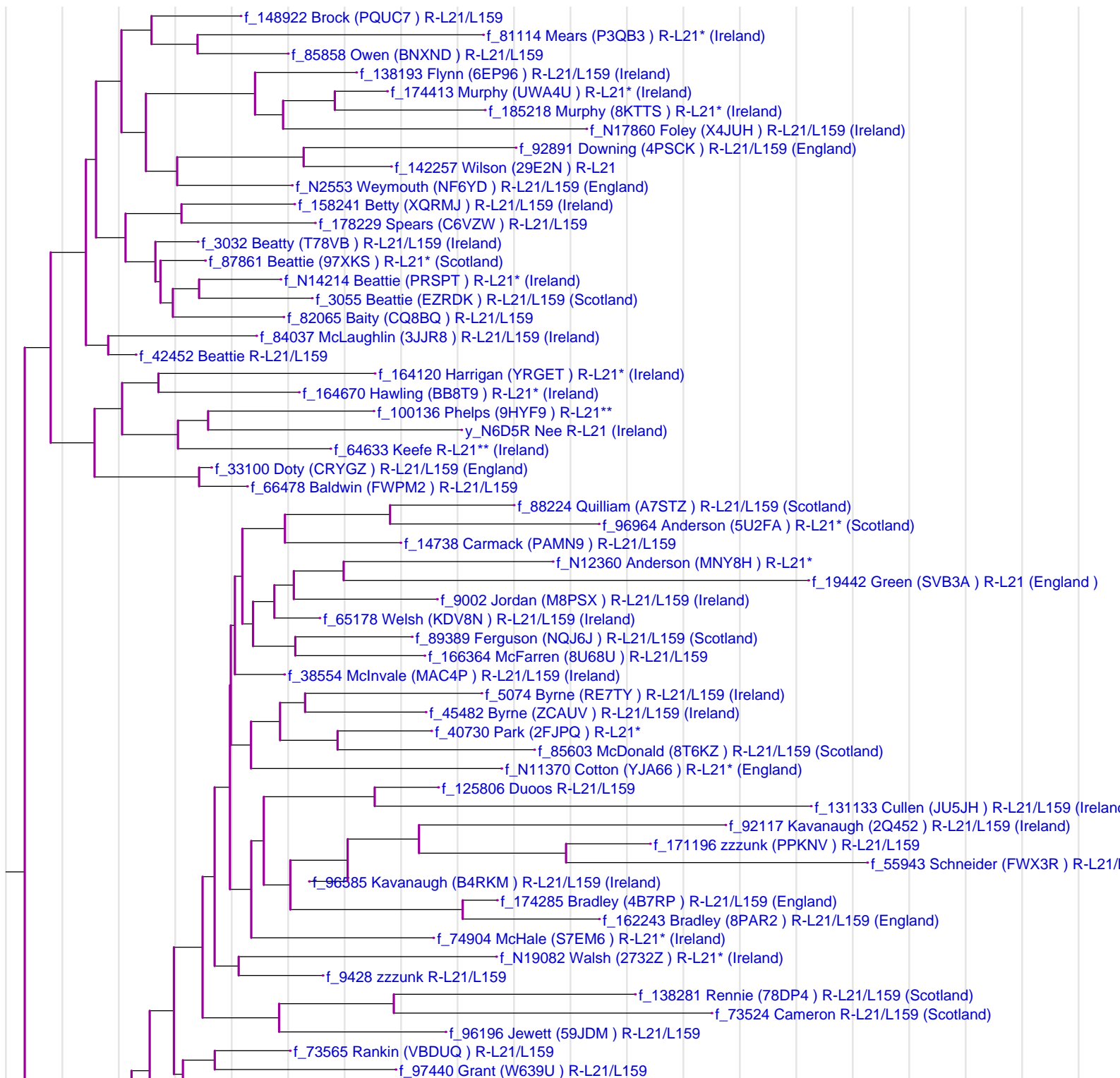
This is the marker distribution for R-L159.2. The color indicates the relative frequency of the alleles.



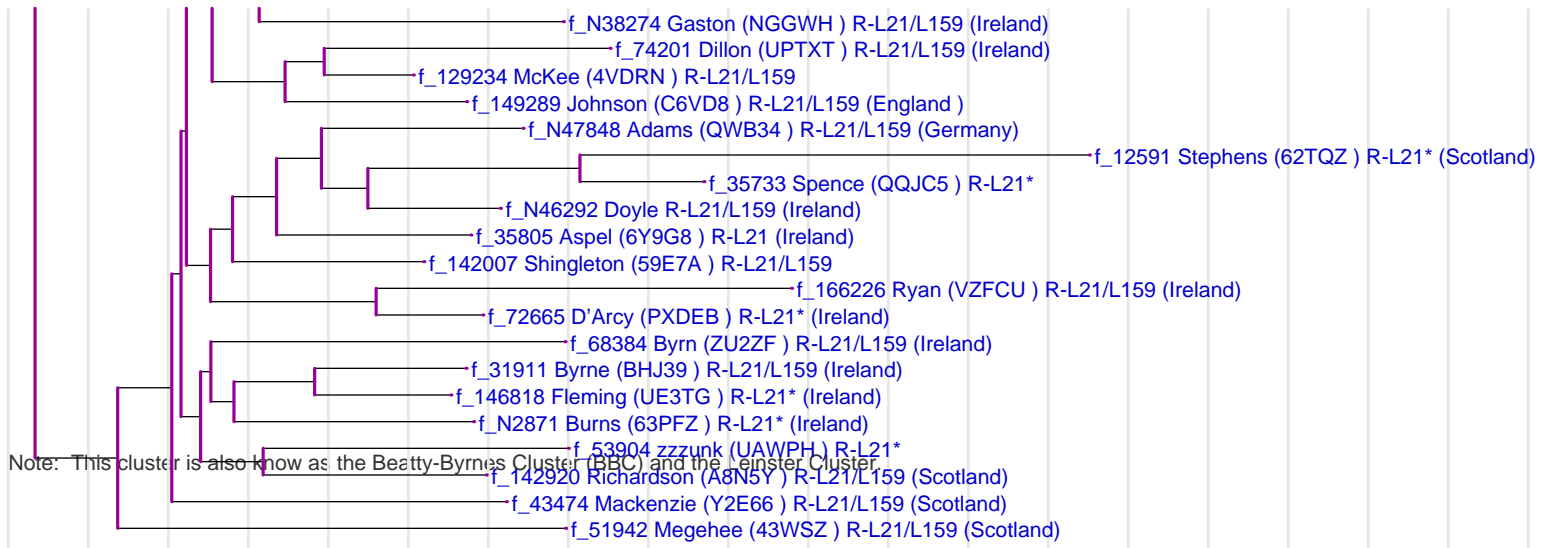
Age Analysis

Total number of members	Total number of markers	Total number of mutations	Mutation fraction	Age estimate (in generations)	Age estimate (in years)
77	5159	551	10.68%	56.41±5.70	1410.29±200.514

Note: This cluster is also known as the Beatty-Byrnes Cluster (BBC) and the Leinster Cluster.



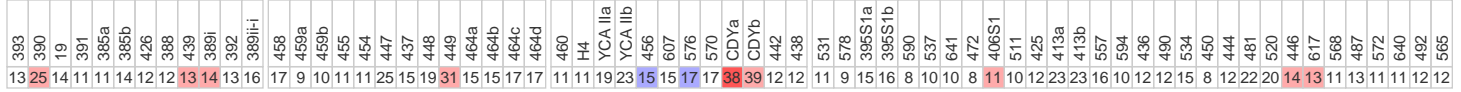
The vertical grey lines are separated 10 generations apart.



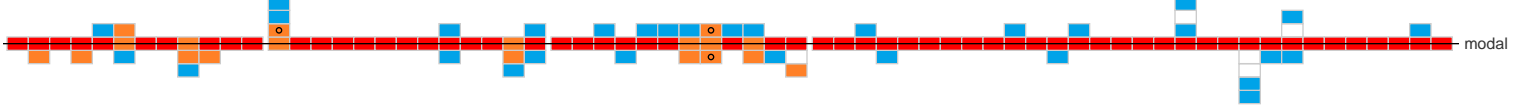
The vertical grey lines are separated 10 generations apart.

Mike's Variety 1113-H/J

This is the modal haplotype for Mike's Variety 1113-H/J. The coloration is with respect to the modal haplotype of the full tree.



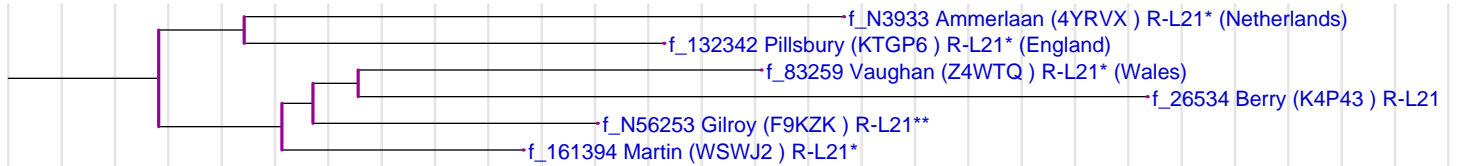
This is the marker distribution for Mike's Variety 1113-H/J. The color indicates the relative frequency of the alleles.



Age Analysis

Total number of members	Total number of markers	Total number of mutations	Mutation fraction	Age estimate (in generations)	Age estimate (in years)
6	402	70	17.41%	95.34±10.85	2383.62±361.019

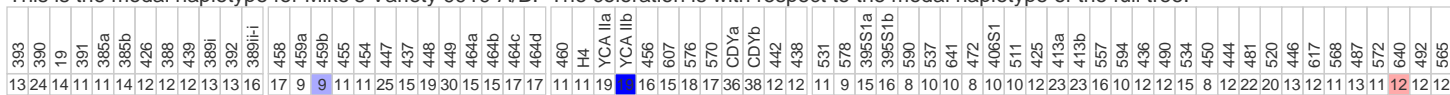
Note: Members of this cluster belong to either Mike's Variety 1113, 1113-H or 1113-J.



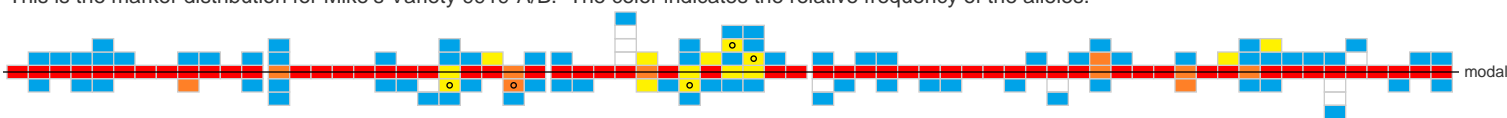
The vertical grey lines are separated 10 generations apart.

Mike's Variety 9919-A/B

This is the modal haplotype for Mike's Variety 9919-A/B. The coloration is with respect to the modal haplotype of the full tree.

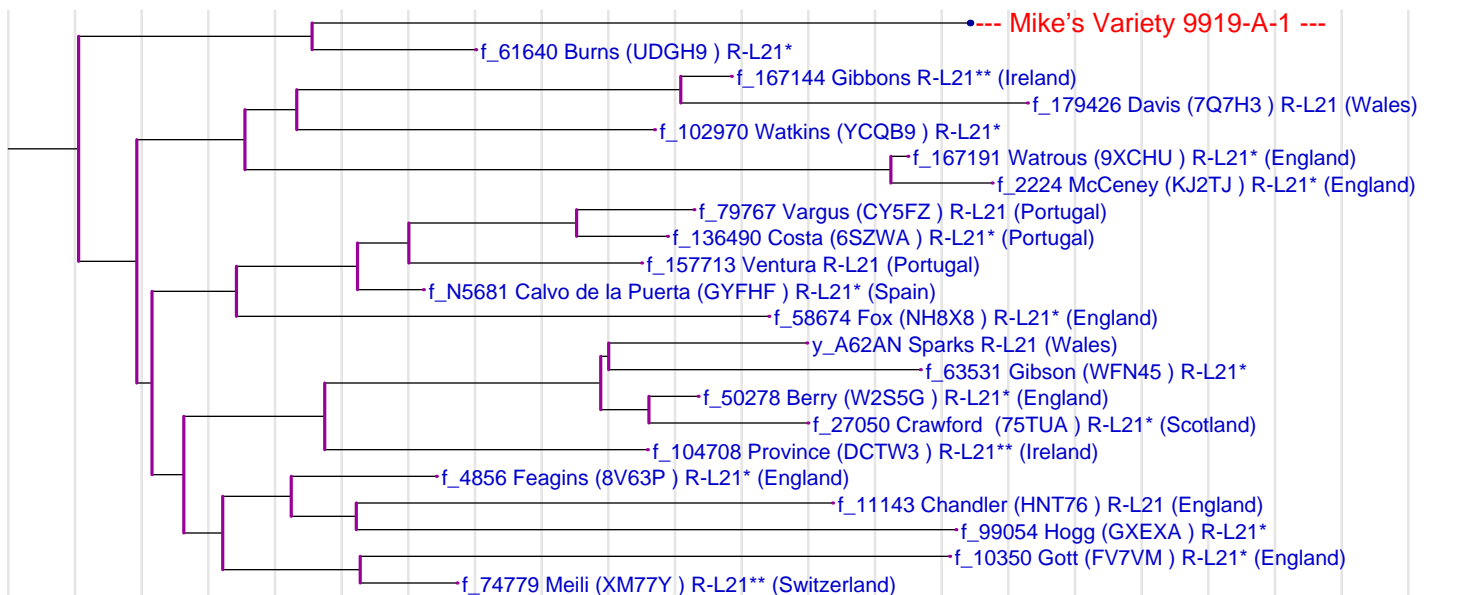


This is the marker distribution for Mike's Variety 9919-A/B. The color indicates the relative frequency of the alleles.



Age Analysis

Total number of members	Total number of markers	Total number of mutations	Mutation fraction	Age estimate (in generations)	Age estimate (in years)
28	1876	387	20.63%	114.96±11.86	2874.02±412.986



The vertical grey lines are separated 10 generations apart.

Mike's Variety 9919-A-1

This is the modal haplotype for Mike's Variety 9919-A-1. The coloration is with respect to the modal haplotype of the full tree.

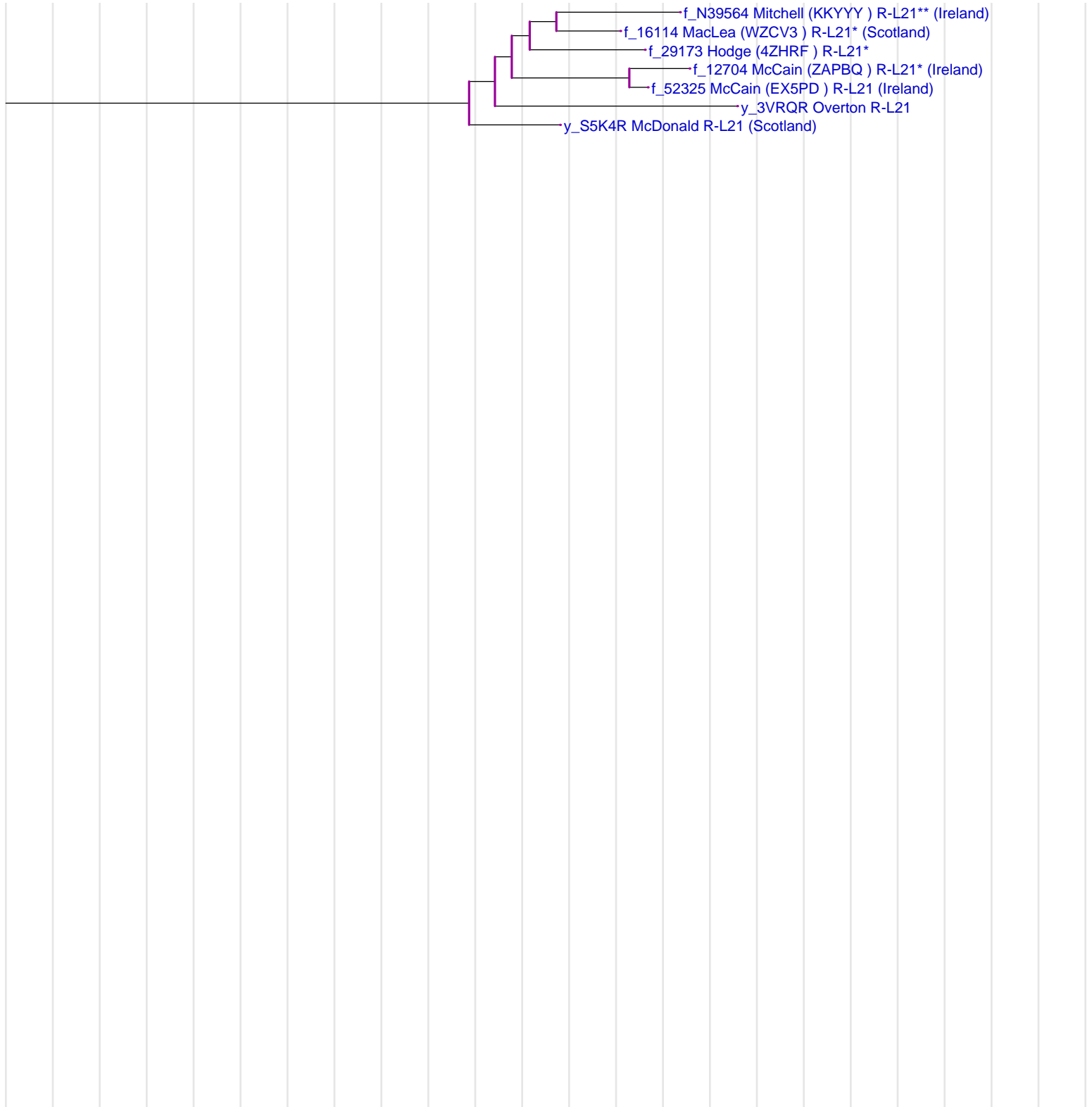
393	390	19	391	385a	385b	426	388	439	389i	392	389i-i	458	459a	459b	455	454	447	437	448	449	464a	464b	464c	464d	460	H4	YCA IIa	YCA IIb	456	607	576	570	CDYa	CDYb	442	438	531	578	395S1a	395S1b	590	537	641	472	406S1	511	425	413a	413b	557	594	436	490	534	450	444	481	520	446	617	568	487	572	640	492	565	
13	24	14	11	11	14	12	12	12	13	13	16	16	9	9	11	11	25	15	19	31	15	16	16	17	11	11	19	19	17	15	20	17	38	40	12	12	11	9	16	17	8	10	10	8	10	10	10	12	23	23	16	10	12	12	14	8	13	24	22	13	12	11	13	11	12	12	12

This is the marker distribution for Mike's Variety 9919-A-1. The color indicates the relative frequency of the alleles.



Age Analysis

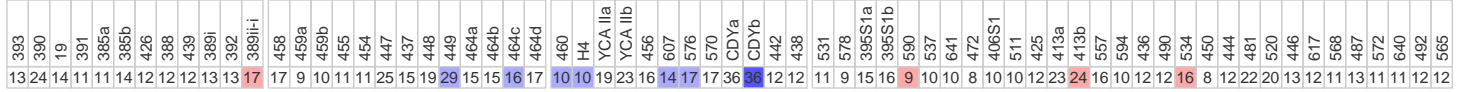
Total number of members	Total number of markers	Total number of mutations	Mutation fraction	Age estimate (in generations)	Age estimate (in years)
7	469	34	7.25%	37.61±4.17	940.25±140.376



The vertical grey lines are separated 10 generations apart.

Mike's Variety 590917

This is the modal haplotype for Mike's Variety 590917. The coloration is with respect to the modal haplotype of the full tree.

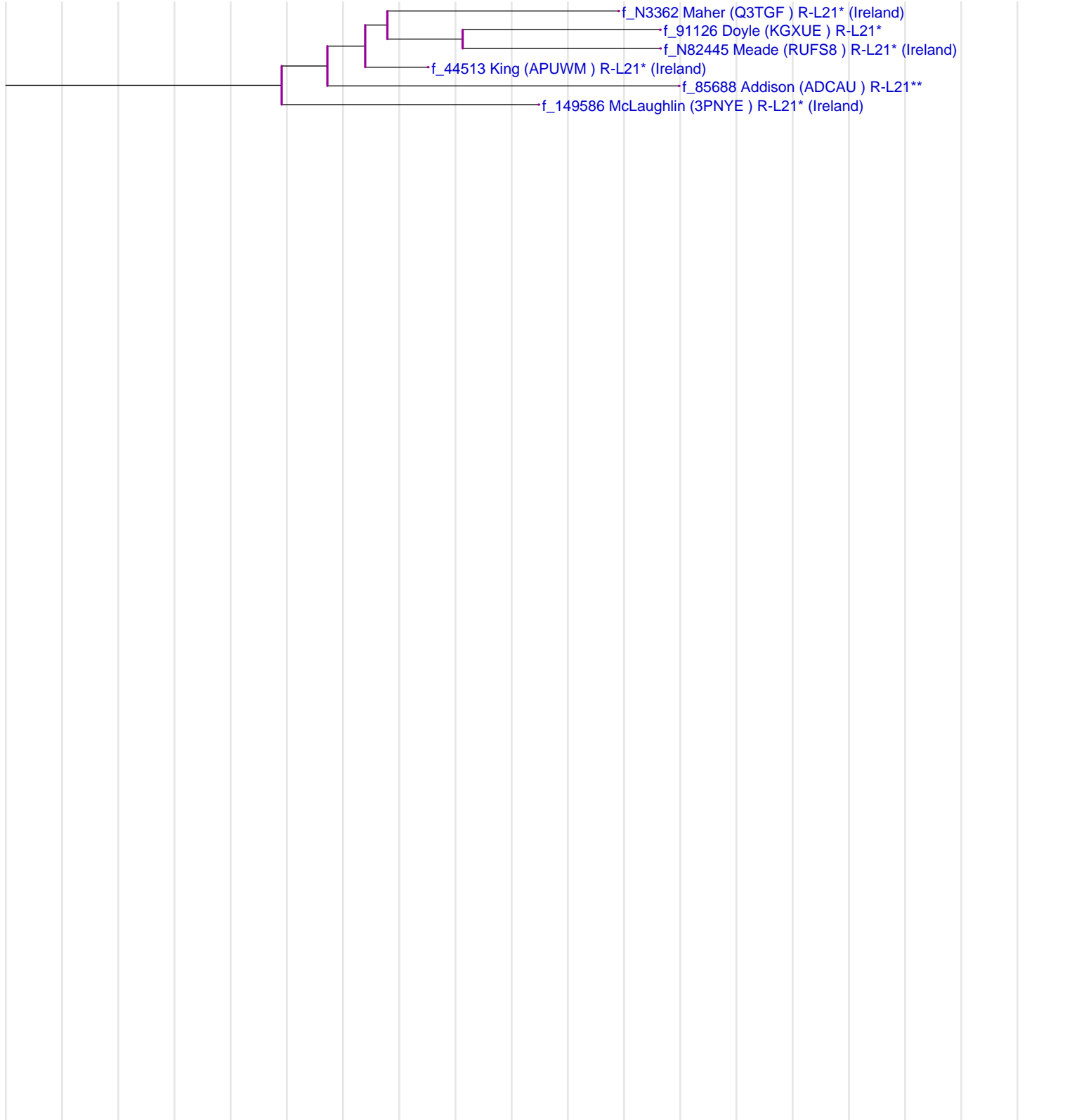


This is the marker distribution for Mike's Variety 590917. The color indicates the relative frequency of the alleles.



Age Analysis

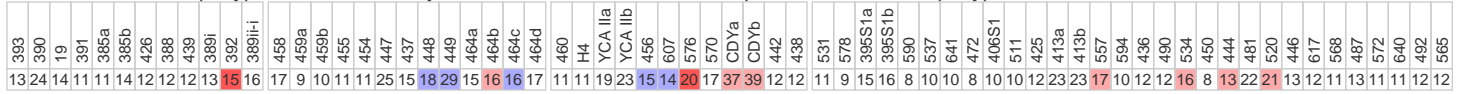
Total number of members	Total number of markers	Total number of mutations	Mutation fraction	Age estimate (in generations)	Age estimate (in years)
6	402	37	9.20%	48.24±5.44	1205.96±181.783



The vertical grey lines are separated 10 generations apart.

Mike's Variety 1416

This is the modal haplotype for Mike's Variety 1416. The coloration is with respect to the modal haplotype of the full tree.

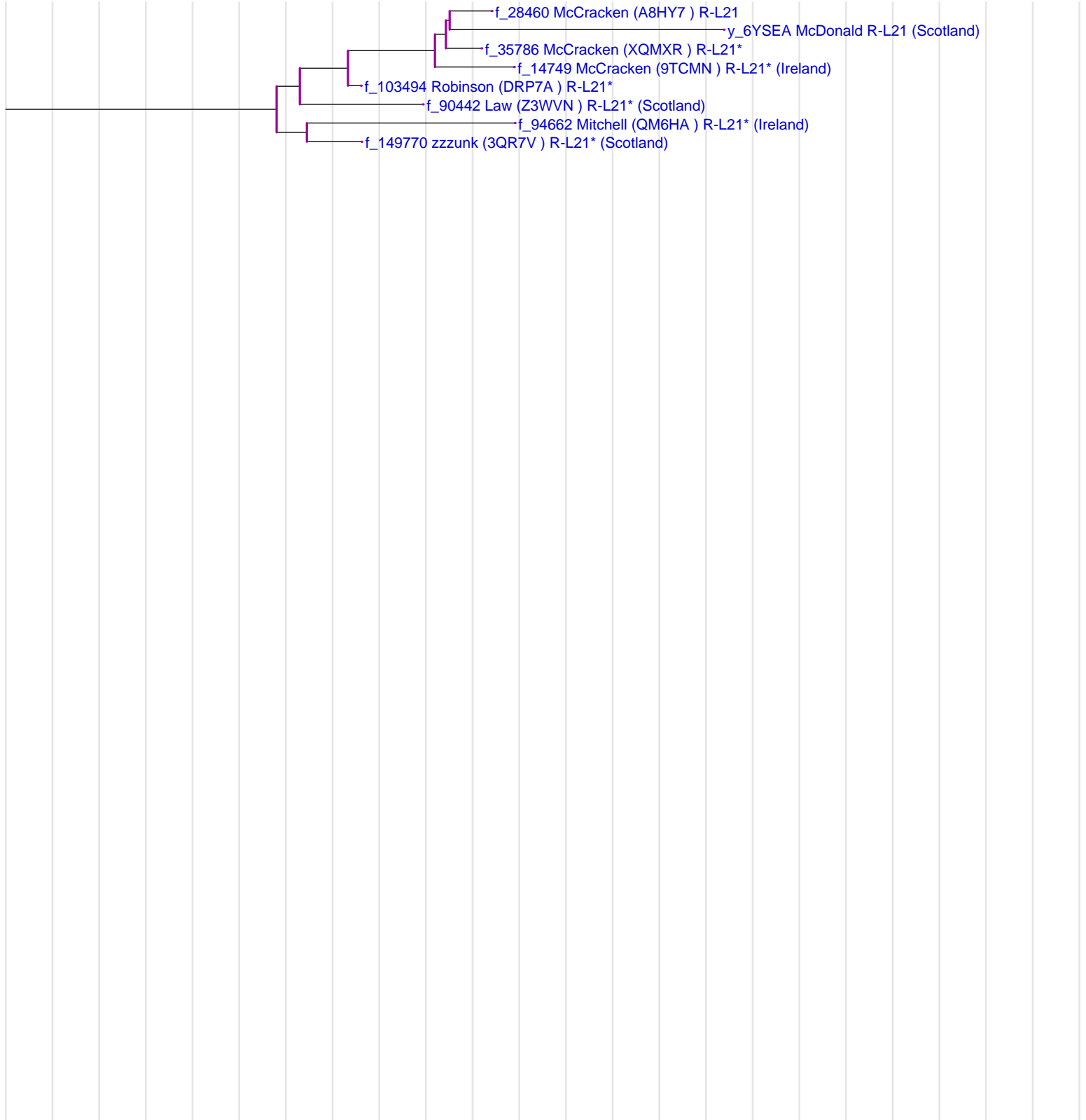


This is the marker distribution for Mike's Variety 1416. The color indicates the relative frequency of the alleles.



Age Analysis

Total number of members	Total number of markers	Total number of mutations	Mutation fraction	Age estimate (in generations)	Age estimate (in years)
8	536	38	7.09%	36.75±4.03	918.748±136.273



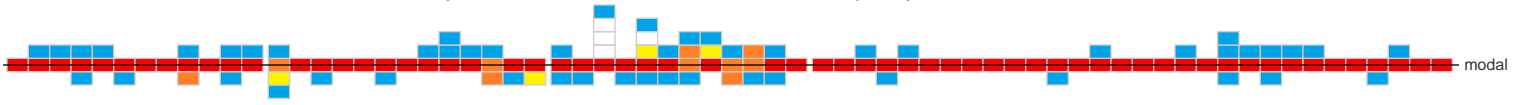
The vertical grey lines are separated 10 generations apart.

Mike's Variety 1117

This is the modal haplotype for Mike's Variety 1117. The coloration is with respect to the modal haplotype of the full tree.

393	390	19	391	385a	385b	426	388	439	389i	392	389i-I	488	459a	459b	455	454	447	437	448	449	464a	464b	464c	464d	460	H4	YCA IIa	YCA IIb	456	607	576	570	CDYa	CDYb	442	438	531	578	395S1a	395S1b	590	537	641	472	406S1	511	425	413a	413b	557	594	436	490	534	450	444	481	520	446	617	568	487	572	640	492	565	
13	24	14	11	11	14	12	12	13	13	13	16	18	9	10	11	11	25	15	19	30	14	15	16	17	11	11	19	23	16	15	18	16	38	39	13	12	11	9	15	16	8	10	10	8	10	10	11	12	23	23	17	10	12	12	15	8	12	22	20	13	12	11	13	11	11	12	12

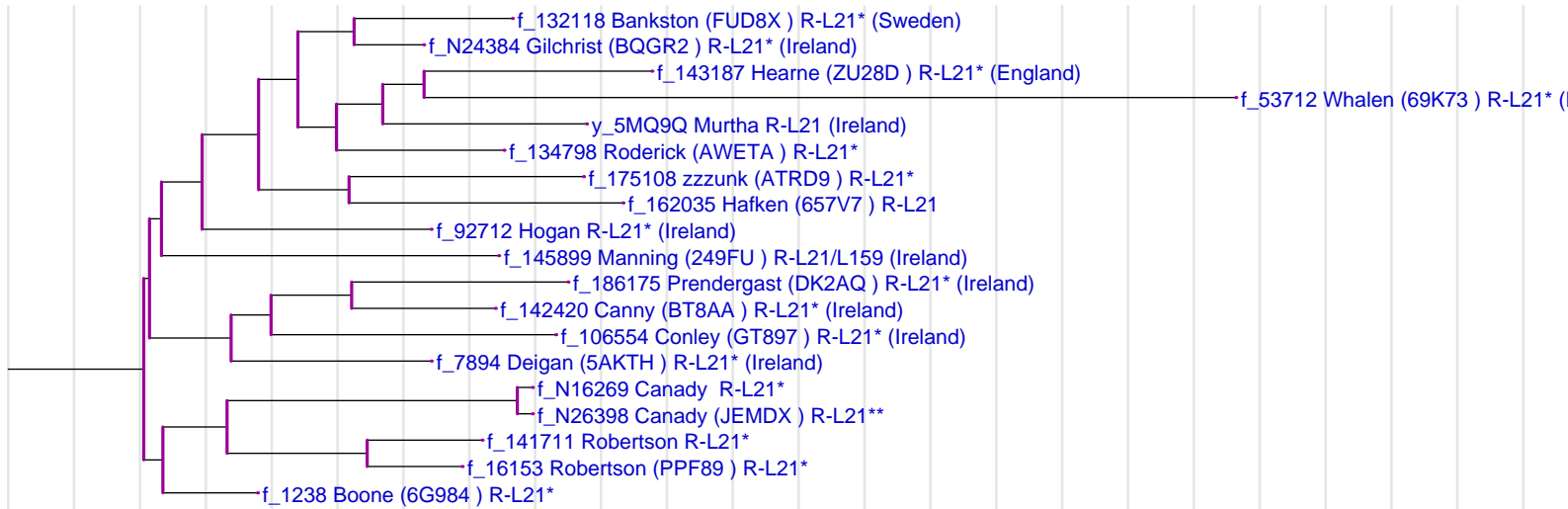
This is the marker distribution for Mike's Variety 1117. The color indicates the relative frequency of the alleles.



Age Analysis

Total number of members	Total number of markers	Total number of mutations	Mutation fraction	Age estimate (in generations)	Age estimate (in years)
19	1273	151	11.86%	63.04±6.58	1576.08±227.751

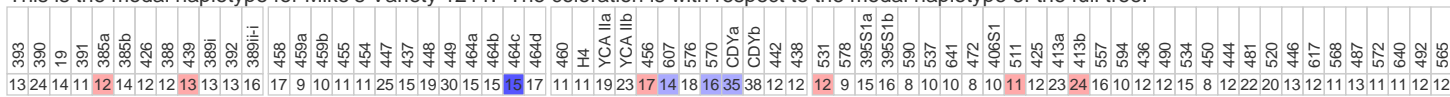
Note: Whalen's haplotype is a little odd, and probably shouldn't be considered a part of this group.



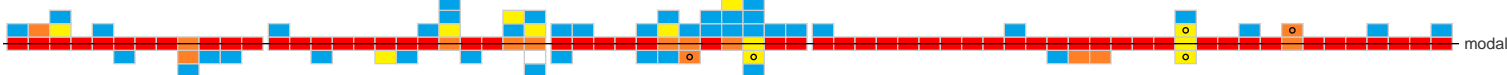
The vertical grey lines are separated 10 generations apart.

Mike's Variety 1211

This is the modal haplotype for Mike's Variety 1211. The coloration is with respect to the modal haplotype of the full tree.

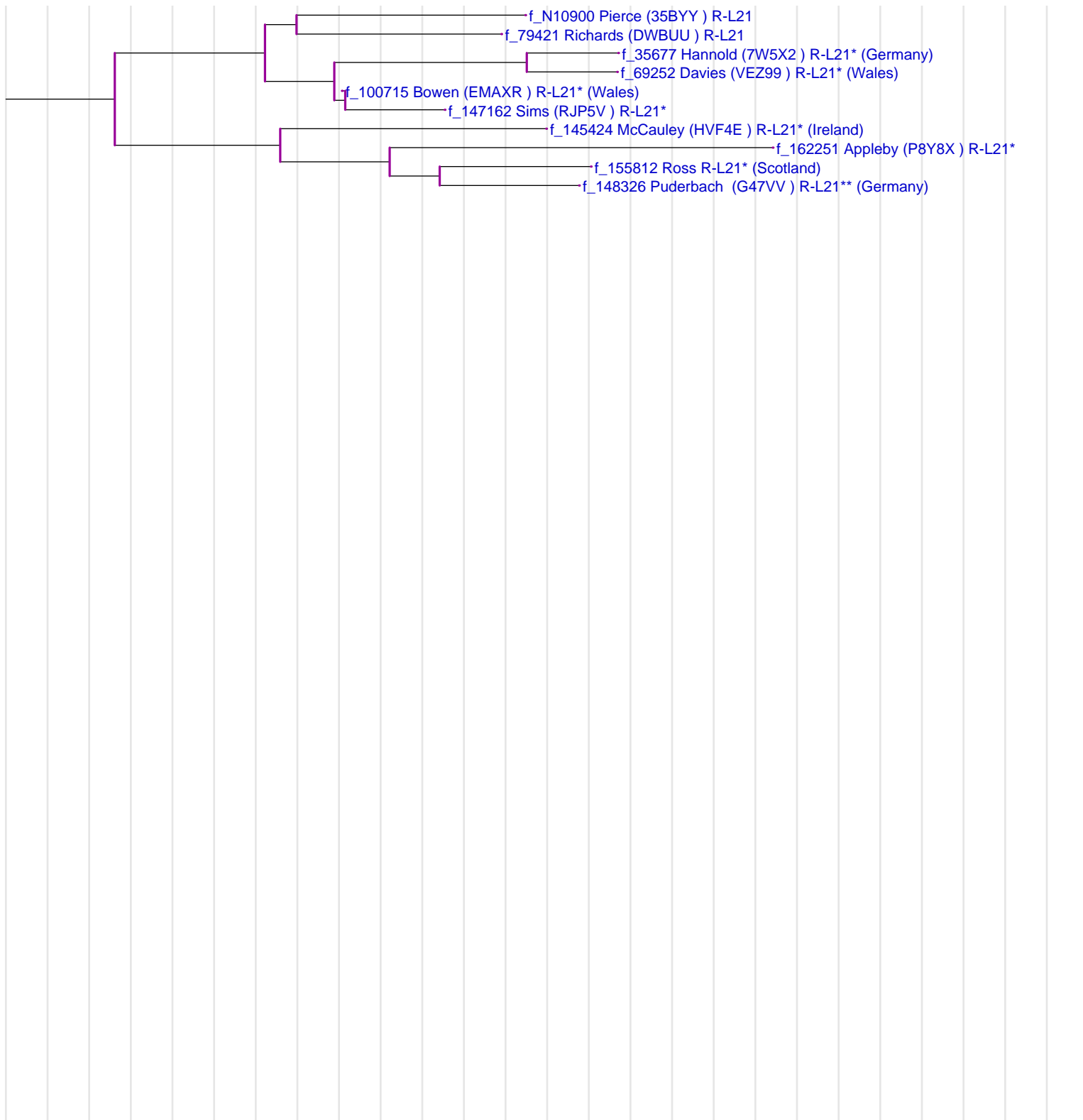


This is the marker distribution for Mike's Variety 1211. The color indicates the relative frequency of the alleles.



Age Analysis

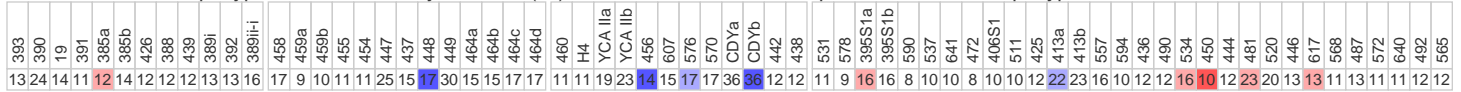
Total number of members	Total number of markers	Total number of mutations	Mutation fraction	Age estimate (in generations)	Age estimate (in years)
10	670	124	18.51%	101.94±11.07	2548.6±376.137



The vertical grey lines are separated 10 generations apart.

Mike's Variety 1830-W1(-A)

This is the modal haplotype for Mike's Variety 1830-W1(-A). The coloration is with respect to the modal haplotype of the full tree.

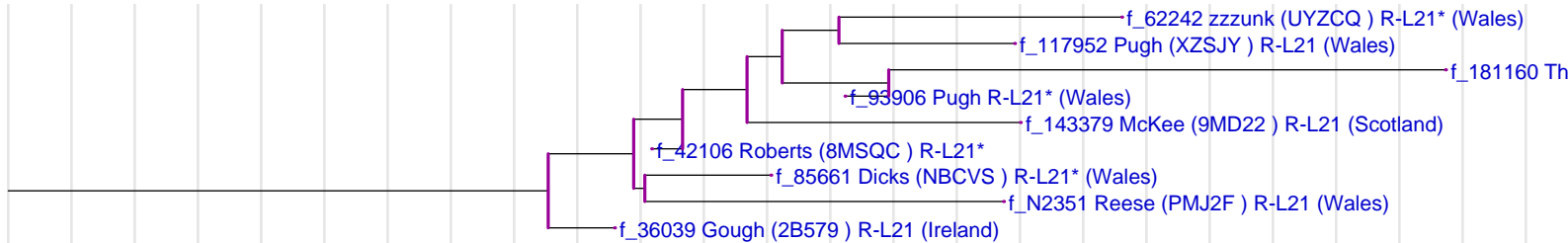


This is the marker distribution for Mike's Variety 1830-W1(-A). The color indicates the relative frequency of the alleles.



Age Analysis

Total number of members	Total number of markers	Total number of mutations	Mutation fraction	Age estimate (in generations)	Age estimate (in years)
9	603	49	8.13%	42.35±4.60	1058.75±156.307



The vertical grey lines are separated 10 generations apart.

Mike's Variety 1416-B-WSW

This is the modal haplotype for Mike's Variety 1416-B-WSW. The coloration is with respect to the modal haplotype of the full tree.

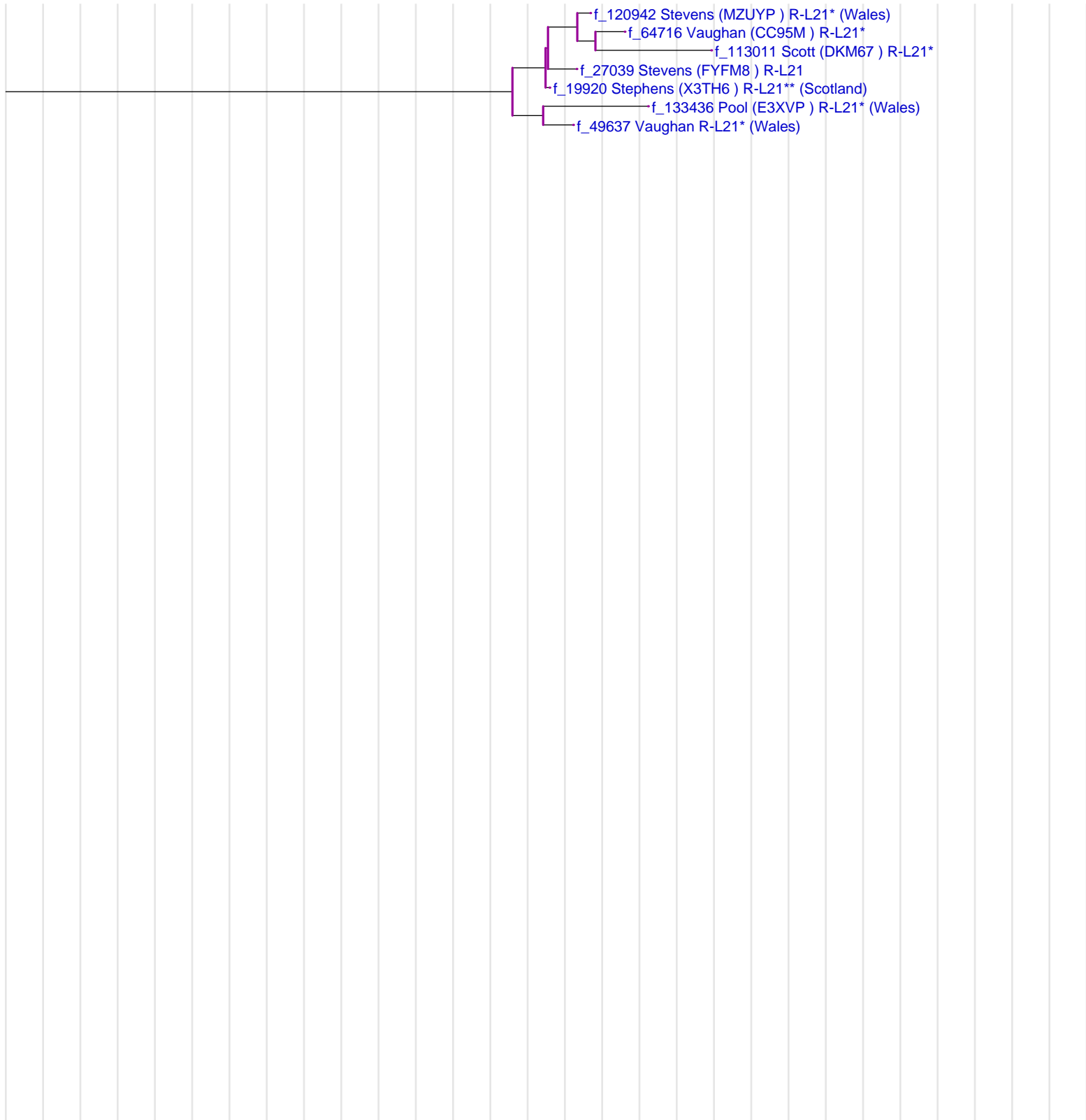
393	390	391	385a	385b	426	388	439	389i	392	389i-i	458	459a	459b	455	454	447	437	448	449	464a	464b	464c	464d	460	H4	YCA IIa	YCA IIb	607	576	570	CDYa	CDYb	442	438	531	578	395S1a	395S1b	590	537	641	472	406S1	511	425	413a	413b	557	594	436	490	534	450	444	481	520	446	617	568	487	572	640	492	565	
13	24	14	11	11	16	12	12	13	15	17	17	9	10	11	11	25	15	19	29	14	15	16	17	11	11	19	23	18	15	18	17	35	38	12	12	11	9	16	16	8	10	10	8	10	10	12	24	25	15	10	12	12	16	8	14	24	20	13	12	11	13	11	11	12	12

This is the marker distribution for Mike's Variety 1416-B-WSW. The color indicates the relative frequency of the alleles.



Age Analysis

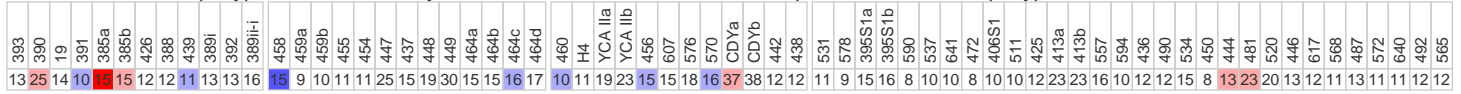
Total number of members	Total number of markers	Total number of mutations	Mutation fraction	Age estimate (in generations)	Age estimate (in years)
7	469	18	3.84%	19.57±2.16	489.129±72.9029



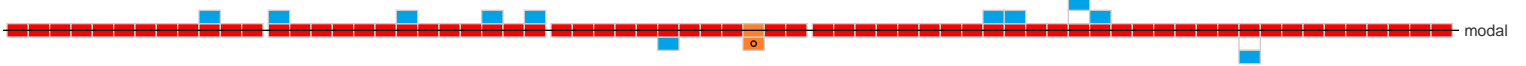
The vertical grey lines are separated 10 generations apart.

Mike's Variety 1515-Who

This is the modal haplotype for Mike's Variety 1515-Who. The coloration is with respect to the modal haplotype of the full tree.

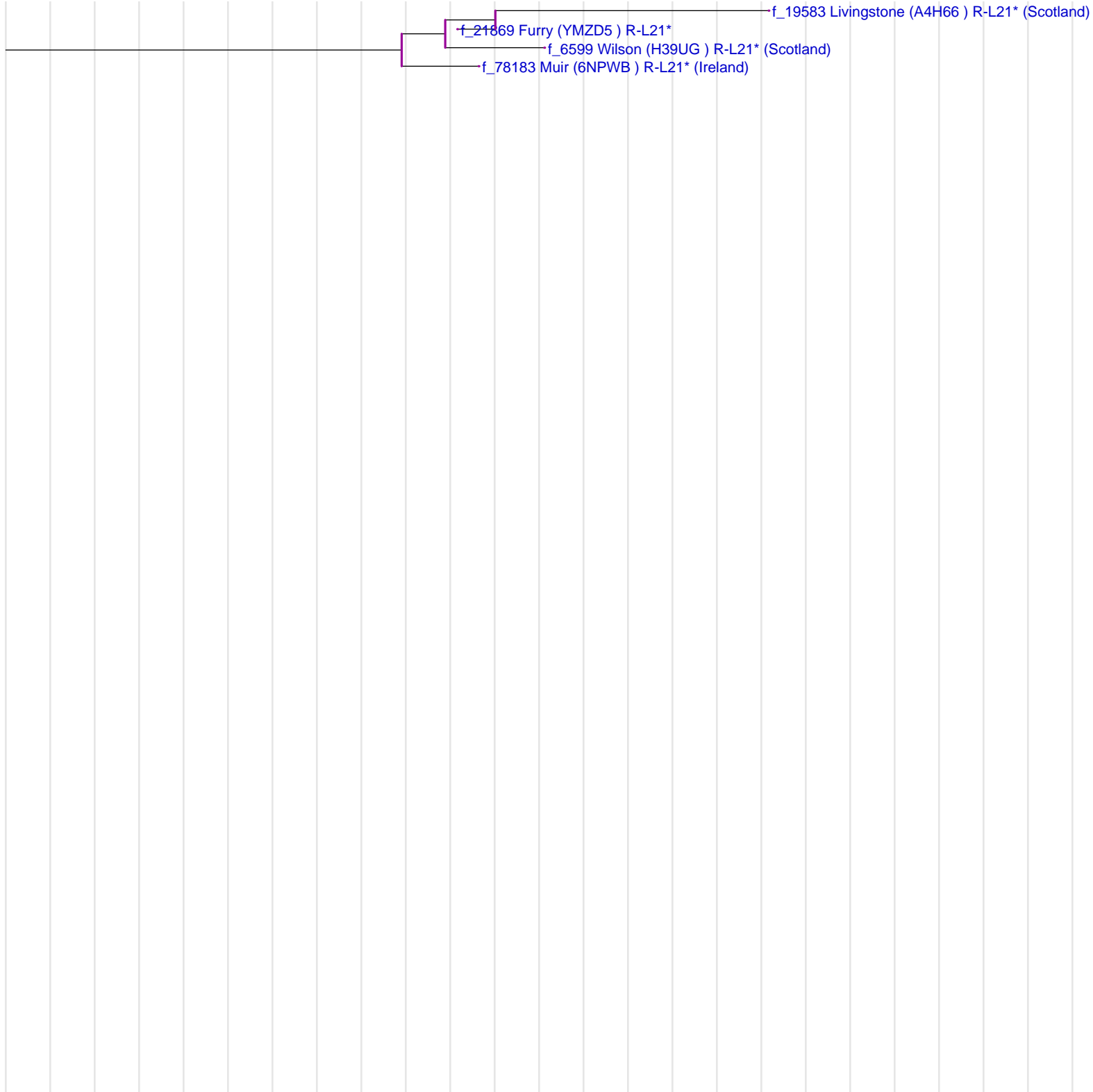


This is the marker distribution for Mike's Variety 1515-Who. The color indicates the relative frequency of the alleles.



Age Analysis

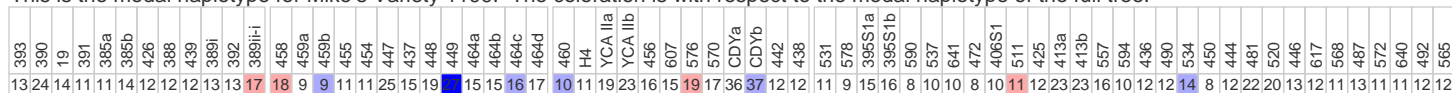
Total number of members	Total number of markers	Total number of mutations	Mutation fraction	Age estimate (in generations)	Age estimate (in years)
4	268	15	5.60%	28.79±3.40	719.764±111.373



The vertical grey lines are separated 10 generations apart.

Mike's Variety 1199

This is the modal haplotype for Mike's Variety 1199. The coloration is with respect to the modal haplotype of the full tree.

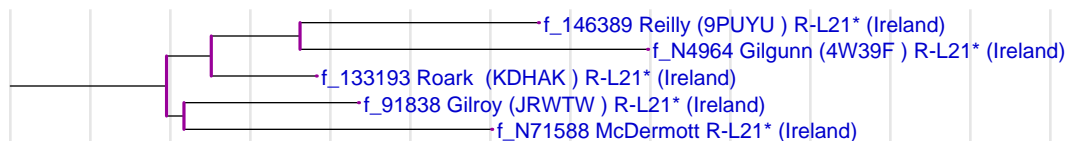


This is the marker distribution for Mike's Variety 1199. The color indicates the relative frequency of the alleles.



Age Analysis

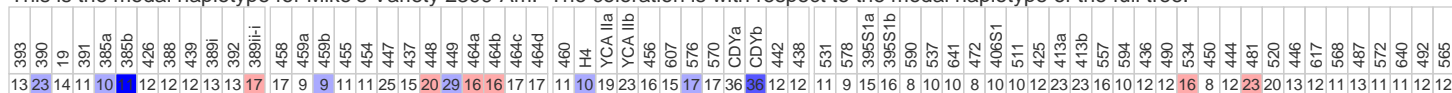
Total number of members	Total number of markers	Total number of mutations	Mutation fraction	Age estimate (in generations)	Age estimate (in years)
5	335	27	8.06%	41.99±4.83	1049.74±159.997



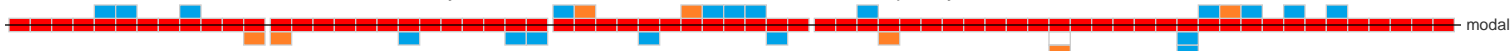
The vertical grey lines are separated 10 generations apart.

Mike's Variety 2399-Am

This is the modal haplotype for Mike's Variety 2399-Am. The coloration is with respect to the modal haplotype of the full tree.

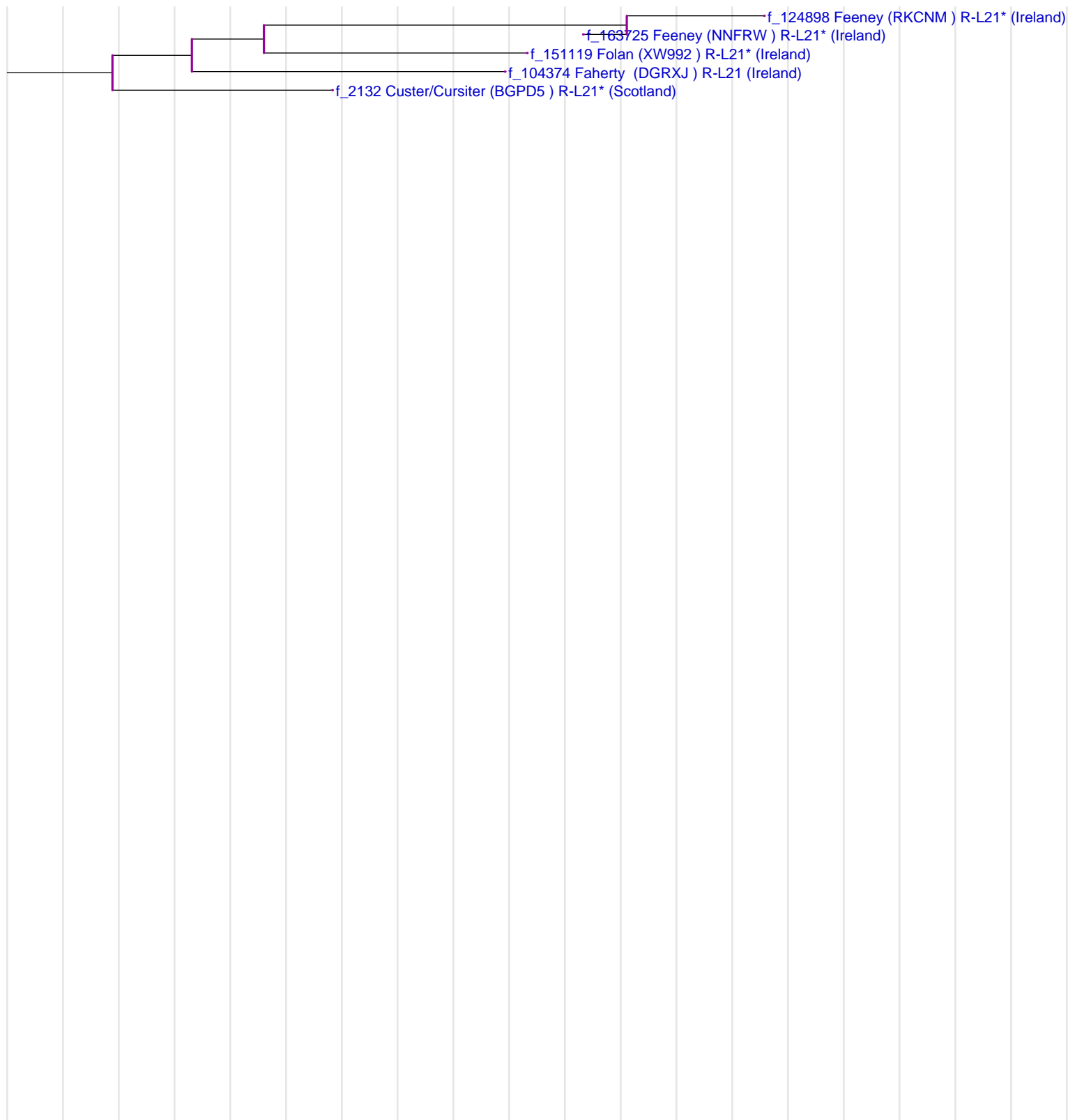


This is the marker distribution for Mike's Variety 2399-Am. The color indicates the relative frequency of the alleles.



Age Analysis

Total number of members	Total number of markers	Total number of mutations	Mutation fraction	Age estimate (in generations)	Age estimate (in years)
5	335	36	10.75%	56.78±6.55	1419.48±216.742



The vertical grey lines are separated 10 generations apart.

Mike's Variety 1121

This is the modal haplotype for Mike's Variety 1121. The coloration is with respect to the modal haplotype of the full tree.

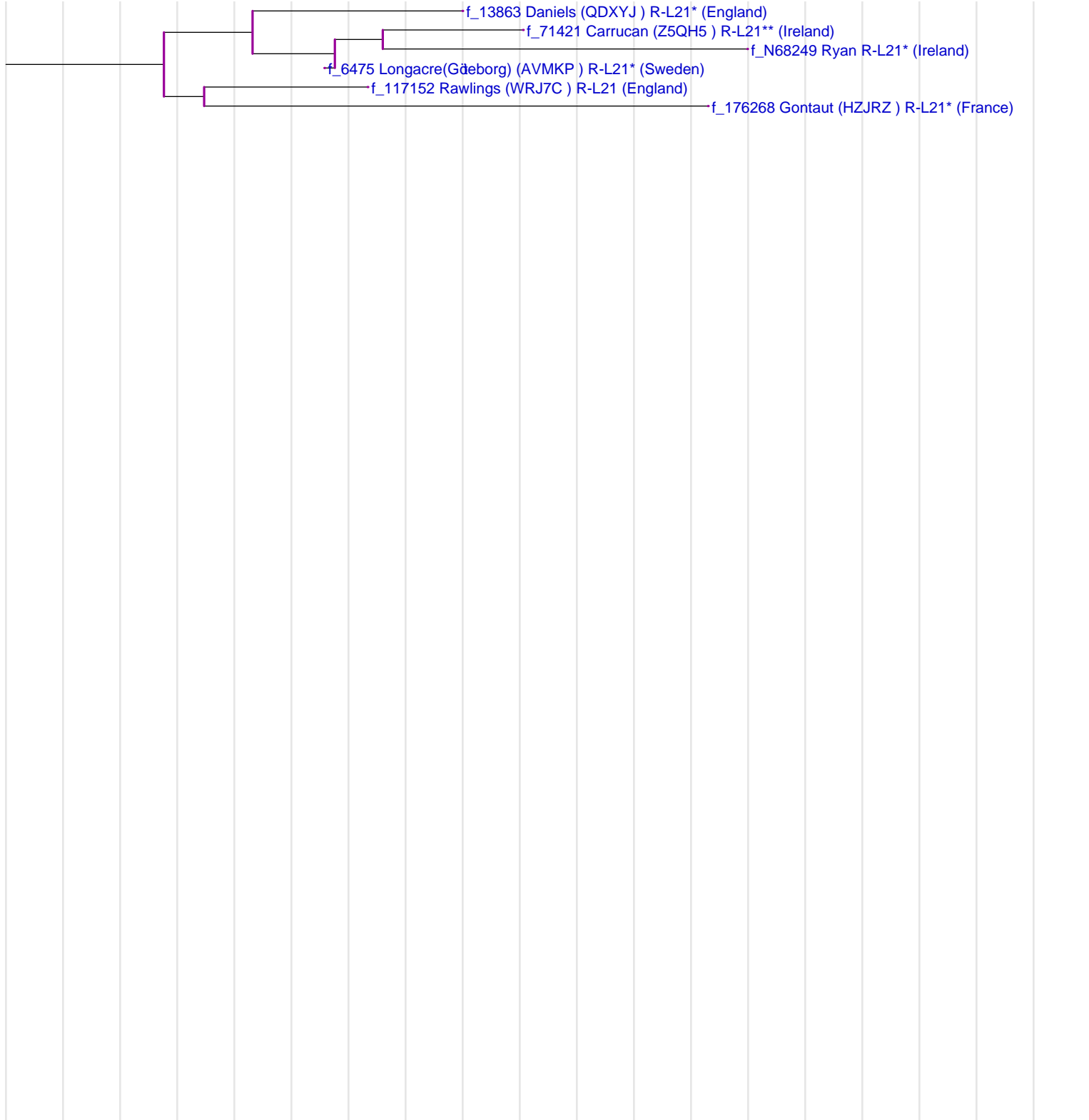
393	390	19	391	385a	385b	426	388	439	389i	392	389i-i	458	459a	459b	455	454	447	437	448	449	464a	464b	464c	464d	460	H4	YCA IIa	YCA IIb	456	607	576	570	CDYa	CDYb	442	438	531	578	395S1a	395S1b	590	537	641	472	406S1	511	425	413a	413b	557	594	436	490	534	450	444	481	520	446	617	568	487	572	640	492	565	
13	24	14	10	11	14	12	12	12	13	13	16	17	9	10	11	11	25	15	19	31	15	15	15	17	10	11	19	23	17	15	18	18	19	36	38	12	12	11	9	15	16	8	11	10	8	10	10	12	23	23	16	10	12	12	15	8	12	22	21	14	12	11	13	11	11	12	12

This is the marker distribution for Mike's Variety 1121. The color indicates the relative frequency of the alleles.



Age Analysis

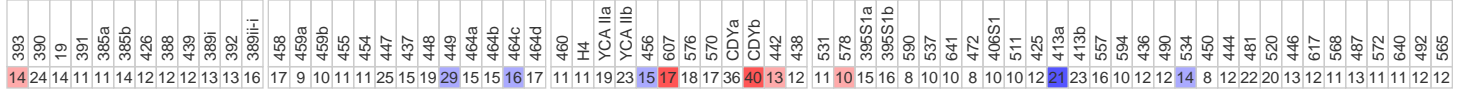
Total number of members	Total number of markers	Total number of mutations	Mutation fraction	Age estimate (in generations)	Age estimate (in years)
6	402	43	10.70%	56.50±6.38	1412.54±213.105



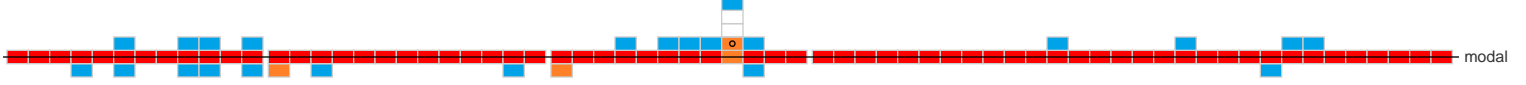
The vertical grey lines are separated 10 generations apart.

Mike's Variety V1410

This is the modal haplotype for Mike's Variety V1410. The coloration is with respect to the modal haplotype of the full tree.

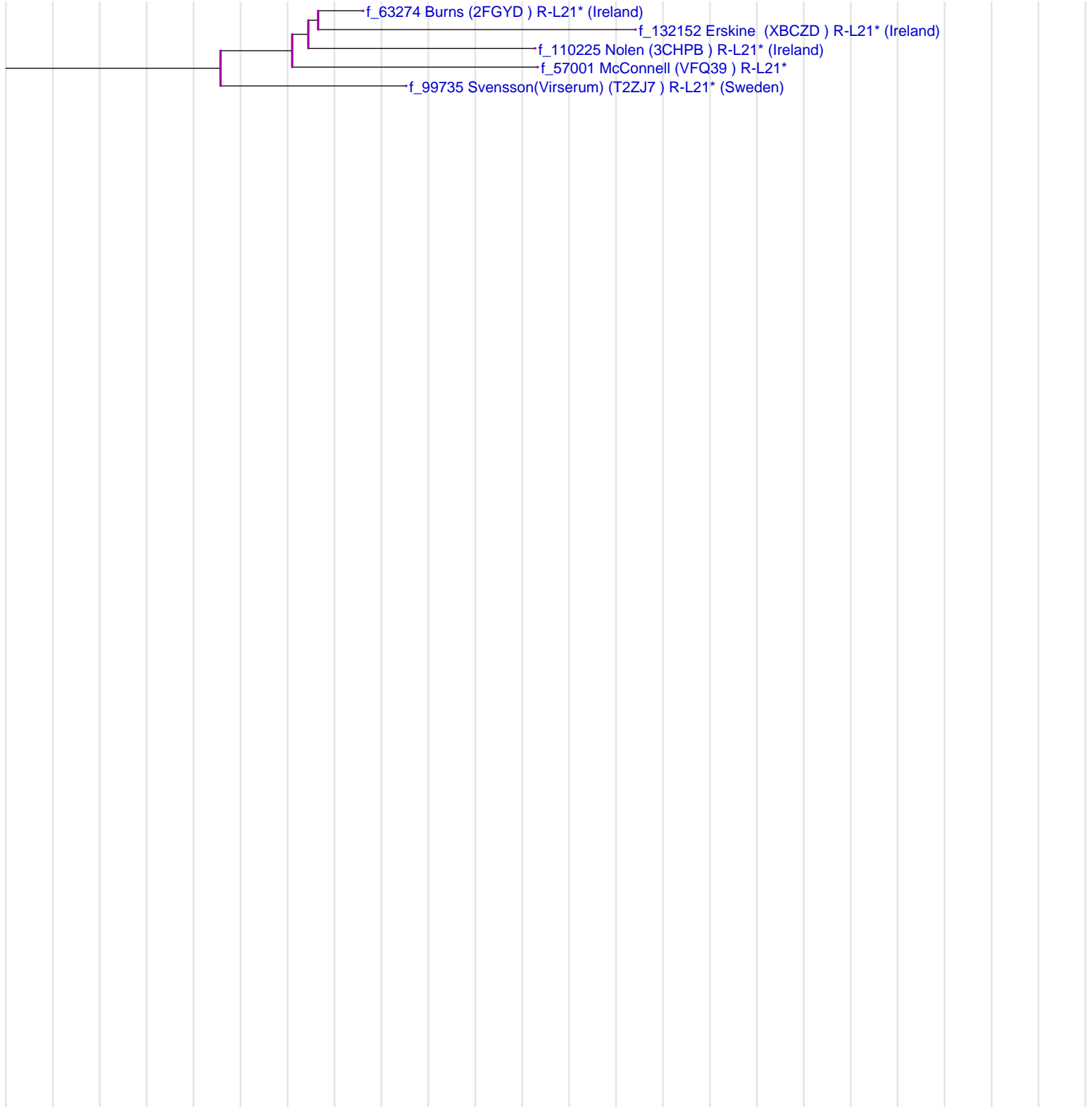


This is the marker distribution for Mike's Variety V1410. The color indicates the relative frequency of the alleles.



Age Analysis

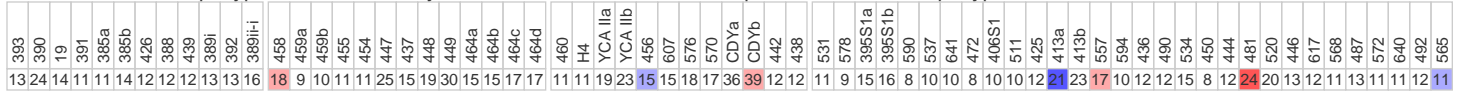
Total number of members	Total number of markers	Total number of mutations	Mutation fraction	Age estimate (in generations)	Age estimate (in years)
5	335	32	9.55%	50.15±5.78	1253.87±191.301



The vertical grey lines are separated 10 generations apart.

Mike's Variety 2117

This is the modal haplotype for Mike's Variety 2117. The coloration is with respect to the modal haplotype of the full tree.

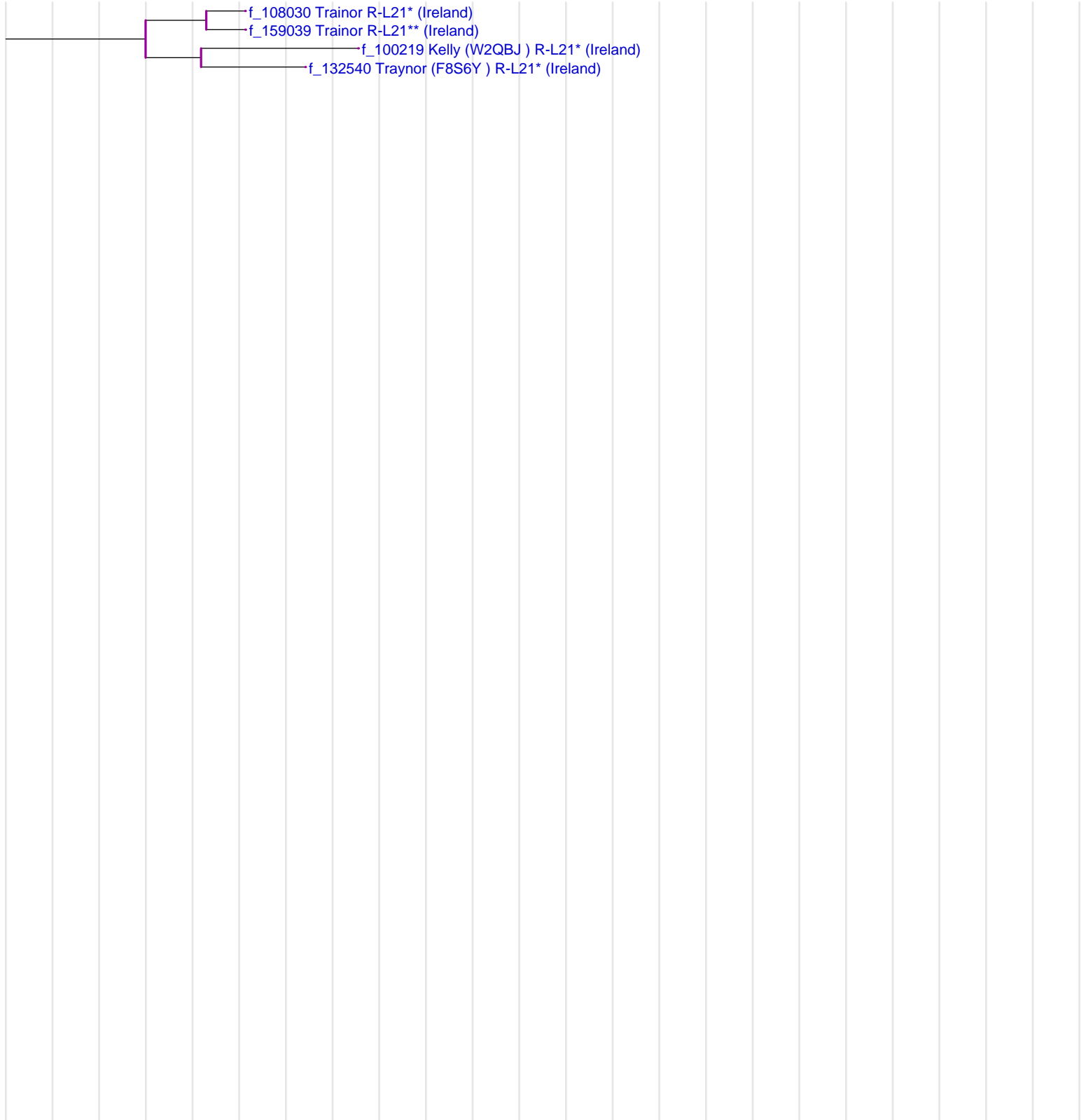


This is the marker distribution for Mike's Variety 2117. The color indicates the relative frequency of the alleles.



Age Analysis

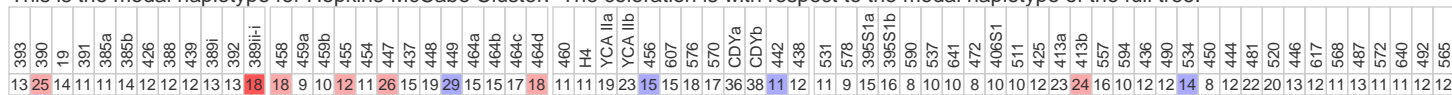
Total number of members	Total number of markers	Total number of mutations	Mutation fraction	Age estimate (in generations)	Age estimate (in years)
4	268	15	5.60%	28.79±3.40	719.764±111.373



The vertical grey lines are separated 10 generations apart.

Hopkins-McCabe Cluster

This is the modal haplotype for Hopkins-McCabe Cluster. The coloration is with respect to the modal haplotype of the full tree.



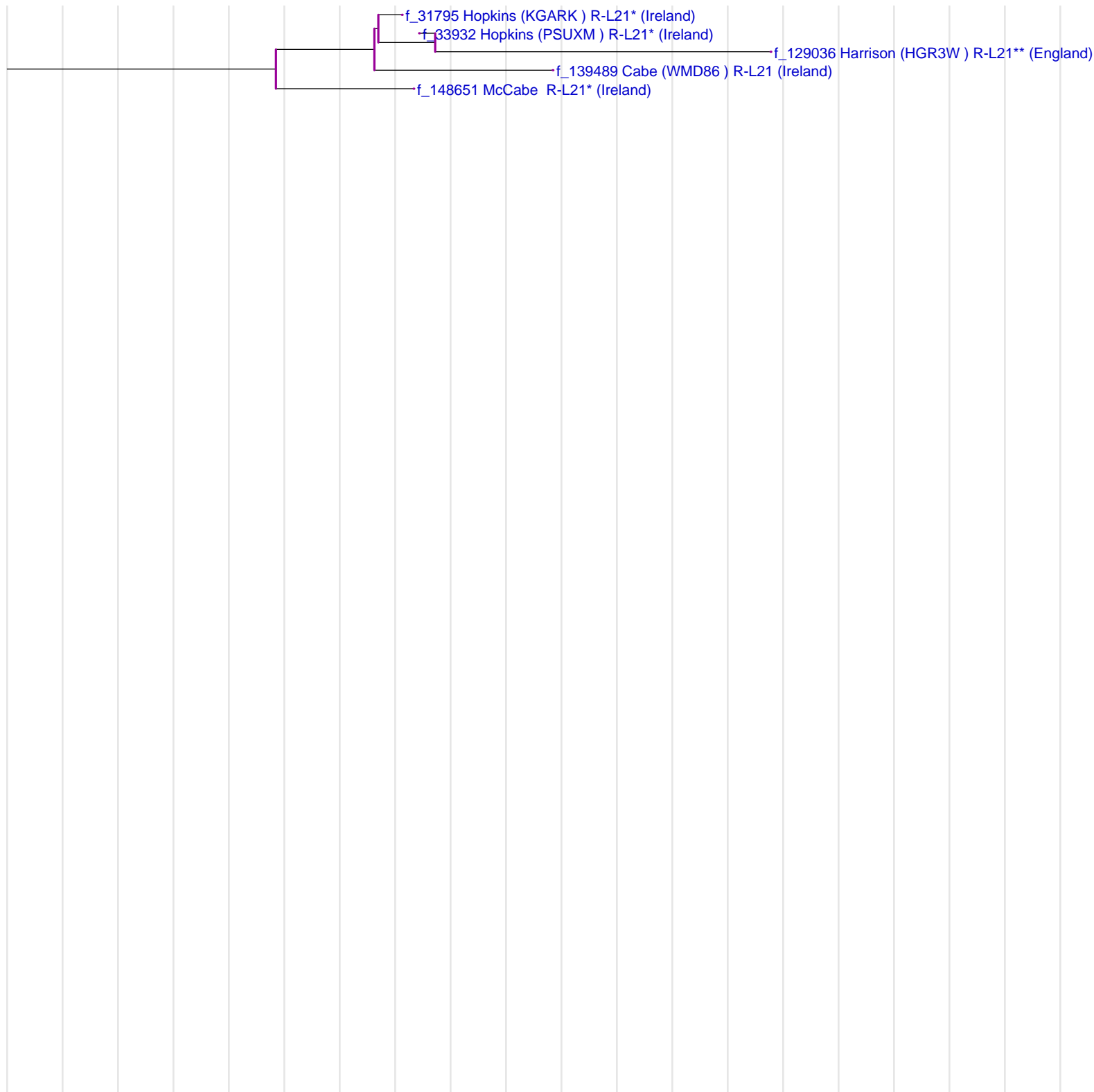
This is the marker distribution for Hopkins-McCabe Cluster. The color indicates the relative frequency of the alleles.



Age Analysis

Total number of members	Total number of markers	Total number of mutations	Mutation fraction	Age estimate (in generations)	Age estimate (in years)
5	335	23	6.87%	35.55±4.08	888.705±135.345

Note: This is Mike's Variety 1226.



The vertical grey lines are separated 10 generations apart.

Mike's Variety 1616

This is the modal haplotype for Mike's Variety 1616. The coloration is with respect to the modal haplotype of the full tree.

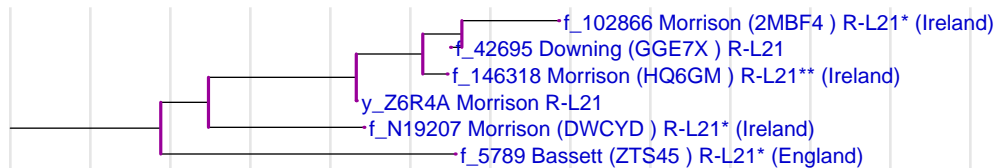
393	390	19	391	385a	385b	426	388	439	389i	392	389i-i	458	459a	459b	455	454	447	437	448	449	464a	464b	464c	464d	460	H4	YCA IIa	YCA IIb	456	607	576	570	CDYa	CDYb	442	438	531	578	395S1a	395S1b	590	537	641	472	406S1	511	425	413a	413b	557	594	436	490	534	450	444	481	520	446	617	568	487	572	640	492	565	
13	24	14	11	14	12	12	11	13	13	16	17	9	10	11	11	25	15	19	30	15	15	16	17	11	11	19	23	16	16	19	15	36	39	12	12	11	9	15	16	8	10	10	8	10	10	12	23	23	16	10	10	12	12	15	19	8	11	22	20	14	12	11	13	11	11	12	12

This is the marker distribution for Mike's Variety 1616. The color indicates the relative frequency of the alleles.



Age Analysis

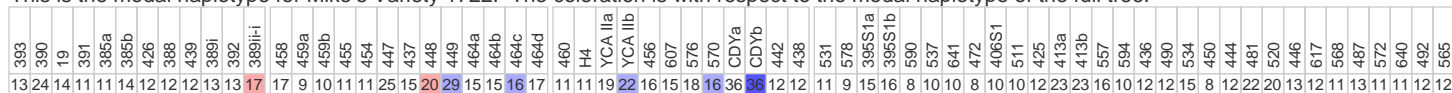
Total number of members	Total number of markers	Total number of mutations	Mutation fraction	Age estimate (in generations)	Age estimate (in years)
6	402	17	4.23%	21.60±2.42	540.024±81.1723



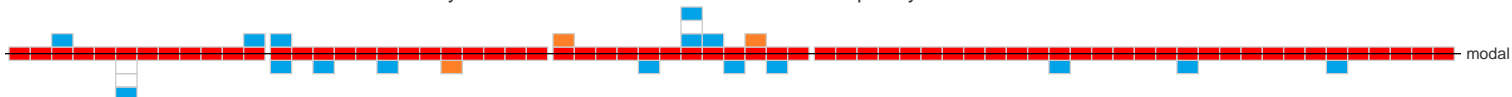
The vertical grey lines are separated 10 generations apart.

Mike's Variety 1722

This is the modal haplotype for Mike's Variety 1722. The coloration is with respect to the modal haplotype of the full tree.

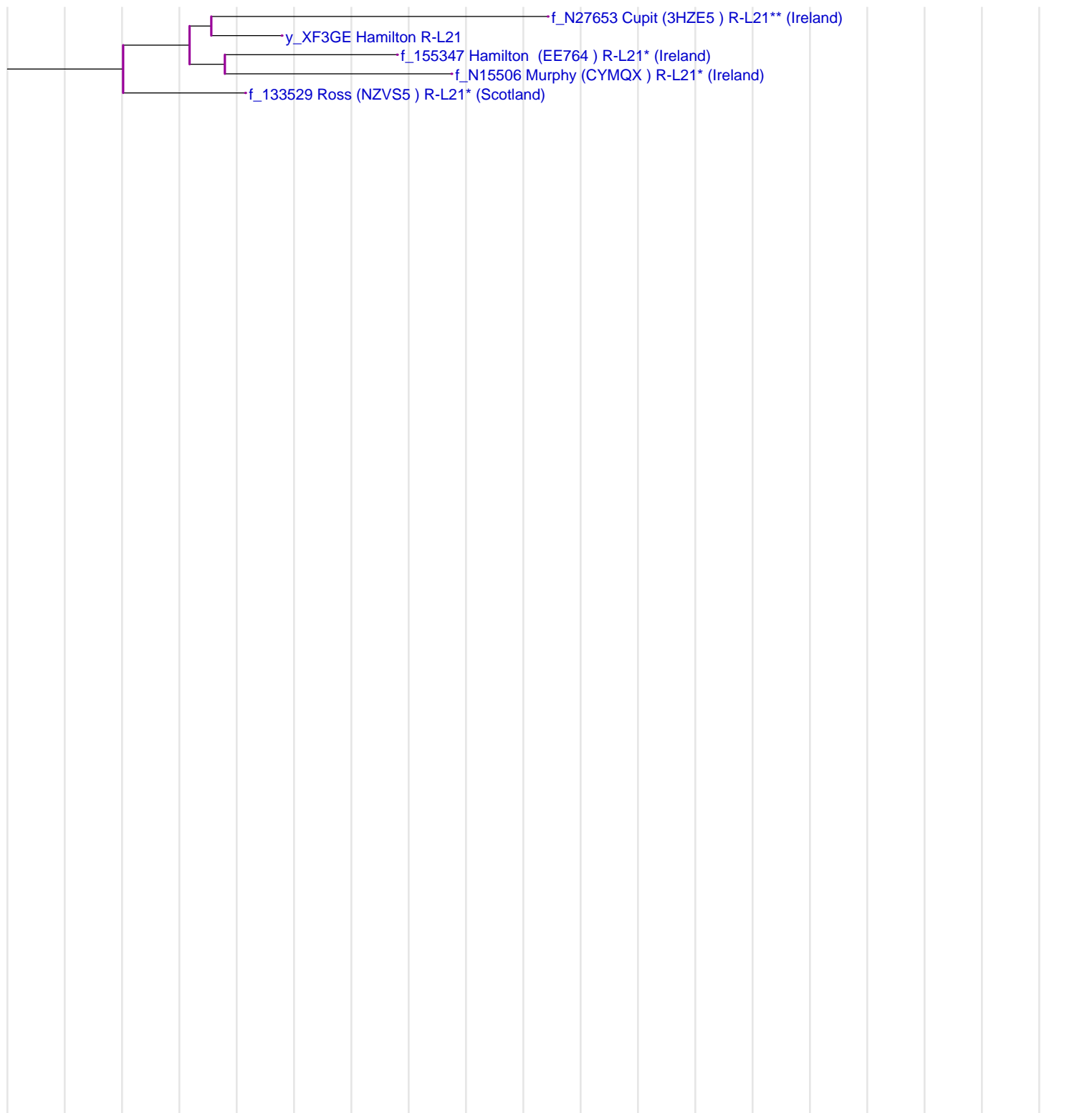


This is the marker distribution for Mike's Variety 1722. The color indicates the relative frequency of the alleles.



Age Analysis

Total number of members	Total number of markers	Total number of mutations	Mutation fraction	Age estimate (in generations)	Age estimate (in years)
5	335	26	7.76%	40.37±4.64	1009.3±153.802



The vertical grey lines are separated 10 generations apart.

Cluster Modals

Full Tree (R-L21)

Age: 3515.75±497.36 years

393	390	19	391	395a	395b	426	388	439	399i	392	399iH	458	459a	459b	455	454	447	437	448	449	464a	464b	464c	464d	460	H4	YCA Ila	YCA Iib	456	607	576	570	CDYa	CDYb	442	438	531	578	395S1a	395S1b	590	597	641	472	406S1	511	425	413a	413b	567	594	436	490	534	450	444	481	520	446	617	568	487	572	640	492	565
13	24	14	11	11	14	12	12	12	13	13	16	17	9	10	11	11	25	15	19	30	15	15	17	17	11	11	19	23	16	15	18	17	38	39	12	12	11	9	15	16	8	10	10	8	10	10	12	21	23	16	10	12	12	15	8	11	22	20	14	12	11	13	11	11	12	12

R-M222 Age: 1496.22±211.879 years
 13 25 14 11 11 13 12 12 12 13 14 16 17 9 10 11 11 25 15 18 30 15 16 16 17 11 11 19 23 17 16 18 17 38 39 12 12 11 9 15 16 8 10 10 8 10 10 12 21 23 16 10 12 12 16 8 12 20 13 12 11 13 11 11 12 12

Little Scottish Cluster Age: 1147.81±166.162 years
 13 24 14 10 11 14 12 12 12 13 13 16 18 9 10 11 11 25 15 19 30 13 15 17 17 11 10 19 23 16 15 18 18 37 38 12 12 11 9 15 16 9 10 10 8 10 10 12 22 23 16 10 12 12 15 8 11 22 20 14 12 11 13 11 11 12 12

Scots Cluster Age: 1435.69±203.816 years
 13 24 14 10 11 14 12 12 12 13 13 17 18 9 10 11 11 25 15 19 30 15 15 17 17 11 12 19 24 15 15 18 17 37 38 12 12 12 9 15 16 8 10 10 8 10 10 12 22 23 16 10 12 12 15 8 11 22 20 13 12 11 13 11 11 12 12

Irish Type III Age: 1272.65±181.271 years
 13 24 14 11 11 14 12 12 11 13 13 16 17 8 9 11 11 25 15 19 29 13 13 15 17 11 11 19 23 15 15 18 17 36 38 12 12 11 9 15 16 8 10 10 8 10 10 12 23 23 15 10 12 12 15 8 12 22 20 13 12 11 13 11 11 12 12

R-L144 Age: 1738.71±260.334 years
 13 24 14 10 11 14 12 12 12 13 13 16 17 9 10 11 11 25 15 19 30 15 15 16 17 11 11 19 23 16 15 17 18 36 40 12 12 11 10 15 16 8 10 10 8 10 10 12 11 23 16 10 12 12 15 8 12 22 20 12 10 11 13 11 11 12 12

Clan Colla Age: 1328.53±189.716 years
 13 24 14 11 11 15 12 12 13 13 16 17 9 10 11 11 25 15 19 28 15 15 17 17 11 11 19 23 16 15 18 19 36 37 12 12 11 9 15 16 8 10 10 8 10 9 - 22 23 16 10 12 12 16 8 12 22 20 13 12 11 13 11 11 12 12

Irish Type IV Age: 1343.32±196.391 years
 13 24 14 10 12 15 13 12 12 13 13 16 17 9 10 11 11 25 15 19 29 15 15 16 18 10 10 19 23 15 15 17 17 36 38 12 12 11 9 15 16 8 10 10 8 11 10 12 23 23 16 10 12 12 15 8 13 22 21 13 12 11 13 11 11 12 12

Royal Stewart Age: 572.517±87.0531 years
 13 24 14 11 11 14 12 12 12 13 13 16 17 9 10 11 11 25 15 19 29 14 15 17 17 11 10 19 23 15 15 17 17 36 37 12 12 11 9 15 16 8 10 10 8 11 10 12 23 23 16 10 12 12 15 8 12 22 21 14 12 11 13 11 11 12 11

Philips-Powell-Robinson-Smith-Jones Cluster Age: 729.641±111.032 years
 13 24 14 11 11 14 12 12 12 13 13 16 17 9 10 11 11 25 15 19 30 15 15 17 17 11 11 19 23 15 14 18 17 34 39 13 12 11 9 15 16 8 10 10 8 10 10 12 23 23 16 10 12 12 15 8 11 22 21 13 12 11 13 11 11 12 12

Mike's Variety 2410 Age: 533.535±81.1098 years
 13 24 14 11 11 15 12 12 13 13 16 17 9 10 11 11 25 15 20 30 15 16 17 17 11 10 19 24 15 15 18 16 36 39 12 12 11 9 15 16 8 10 10 8 10 10 12 23 23 16 10 12 12 16 8 12 22 20 13 12 11 13 11 11 12 12

Mike's Variety 1113 - Largest Piece Age: 2776.75±394.167 years
 13 24 14 11 11 14 12 12 12 13 13 16 17 9 10 11 11 25 15 19 29 15 15 17 17 11 11 19 23 16 15 18 17 38 39 12 12 11 9 15 16 8 10 10 8 11 10 12 23 23 16 10 12 12 14 8 12 22 20 13 13 11 13 11 11 12 12

R-L193 Age: 1102.21±157.41 years
 13 24 14 11 11 14 12 12 12 13 13 16 17 9 10 11 11 25 15 19 29 15 15 17 17 11 11 19 23 16 16 18 17 38 40 12 12 11 9 15 16 8 10 10 8 11 10 12 23 23 16 10 12 12 14 8 12 22 20 13 13 11 13 12 12 12

Mike's Variety 1113-A-2(-B,-M) Age: 861.034±125.445 years
 13 25 14 11 11 14 12 12 12 13 13 16 16 9 10 11 11 25 16 18 29 15 15 17 18 11 11 19 23 17 15 17 17 35 37 12 12 11 9 15 16 8 10 10 8 11 10 12 23 23 16 10 12 12 15 8 12 24 20 13 13 11 13 11 12 12

Mike's Variety 1113-B-2 Age: 1058.75±156.307 years
 13 24 15 11 11 14 12 12 12 13 13 16 17 9 10 11 11 25 15 19 31 15 15 17 17 11 11 18 23 16 15 18 18 38 39 12 12 11 9 15 16 8 10 10 8 11 10 12 23 23 16 10 12 12 15 8 13 22 20 13 13 11 13 11 11 12 12

Mike's Variety 1113-C-2(-R,-M) Age: 1587.18±234.679 years
 14 25 14 11 11 14 12 12 12 14 13 16 16 9 9 11 11 25 15 19 32 15 15 17 17 11 11 19 23 15 15 19 18 38 44 12 12 11 9 15 16 9 10 10 8 11 10 12 23 23 17 10 12 12 13 8 12 22 20 14 13 11 13 11 11 12 12

Mike's Variety 1113-E Age: 797.572±119.012 years
 13 24 14 11 11 14 12 12 12 13 13 16 17 9 10 11 11 25 15 18 29 15 15 17 18 11 11 19 23 16 15 18 17 36 37 12 12 11 9 15 16 8 10 10 8 11 10 12 23 23 16 10 12 12 15 8 12 22 20 13 13 11 13 11 11 12 12

Mike's Variety 1113-D(-1) Age: 1738.71±260.334 years
 13 24 14 10 11 14 12 12 13 13 17 17 9 9 11 11 25 15 19 29 15 16 17 17 10 10 19 23 16 15 19 17 36 40 12 13 11 9 15 16 8 10 10 8 11 10 12 22 23 16 11 12 12 11 8 12 22 20 13 13 11 13 11 11 12 12

R-P314.2 Age: 1947.95±282.772 years
 13 23 14 11 11 14 12 13 13 15 17 9 10 11 11 26 15 19 29 15 15 16 17 10 11 19 23 16 15 18 18 37 38 12 12 11 9 16 16 8 10 10 8 11 10 12 23 23 16 10 12 12 15 8 12 22 20 13 12 11 13 11 11 12 12

South Irish Age: 1518.68±216.847 years
 13 24 14 10 11 15 12 12 11 13 13 16 17 9 10 11 11 24 15 19 29 15 15 17 17 11 11 19 23 15 15 18 17 36 38 13 12 11 9 15 16 8 10 10 8 10 10 12 23 23 16 10 12 12 15 8 12 22 20 13 12 11 13 11 11 12 11

Mike's Variety 1113-D-2 Age: 1461.21±215.061 years
 13 23 14 10 11 14 12 12 11 13 13 15 16 9 10 11 11 26 15 19 29 15 15 17 17 11 11 19 23 16 15 18 16 34 39 12 12 11 9 15 16 8 10 10 8 11 10 12 22 23 16 10 12 12 17 8 12 22 20 13 13 11 13 11 11 12 11

R-L159.2 Age: 1410.29±200.514 years
 13 24 14 11 11 14 12 12 12 14 13 16 17 9 10 11 11 25 15 18 30 15 15 17 17 11 11 19 23 16 15 18 18 30 40 11 12 11 9 15 16 8 10 10 8 10 10 12 23 23 17 10 12 12 15 8 12 22 20 14 12 11 13 11 11 12 12

Mike's Variety 1113-H/J Age: 2383.62±361.019 years
 13 25 14 11 11 14 12 12 13 14 16 17 9 10 11 11 25 15 19 31 15 15 17 17 11 11 19 23 15 15 17 17 38 39 12 12 11 9 15 16 8 10 10 8 11 10 12 23 23 16 10 12 12 15 8 12 22 20 14 13 11 13 11 11 12 12

Mike's Variety 9919-A/B Age: 2874.02±412.986 years
 13 24 14 11 11 14 12 12 12 13 13 16 17 9 9 11 11 25 15 19 30 15 15 17 17 11 11 19 16 15 18 17 36 38 12 12 11 9 15 16 8 10 10 8 10 10 12 23 23 16 10 12 12 15 8 12 22 20 13 12 11 13 11 11 12 12

Mike's Variety 9919-A-1 Age: 940.25±140.376 years
 13 24 14 11 11 14 12 12 12 13 13 16 16 9 9 11 11 25 15 19 31 15 16 16 17 11 11 19 17 15 20 17 38 40 12 12 11 9 16 17 8 10 10 8 10 10 12 23 23 16 10 12 12 14 8 13 24 22 13 12 11 13 11 12 12 12

Mike's Variety 590917 Age: 1205.96±181.783 years
 13 24 14 11 11 14 12 12 12 13 13 17 17 9 10 11 11 25 15 19 29 15 15 16 17 10 10 19 23 16 14 17 17 36 36 12 12 11 9 15 16 9 10 10 8 10 10 12 23 24 16 10 12 12 16 8 12 22 20 13 12 11 13 11 11 12 12

Mike's Variety 1416 Age: 918.748±136.273 years
 13 24 14 11 11 14 12 12 12 13 15 16 17 9 10 11 11 25 15 18 29 15 16 16 17 11 11 19 23 15 14 20 17 37 39 12 12 11 9 15 16 8 10 10 8 10 10 12 23 23 17 10 12 12 16 8 13 22 21 13 12 11 13 11 11 12 12

Mike's Variety 1117 Age: 1576.08±227.751 years
 13 24 14 11 11 14 12 12 13 13 16 18 9 10 11 11 25 15 19 30 14 15 16 17 11 11 19 23 16 15 18 16 38 39 13 12 11 9 15 16 8 10 10 8 10 11 12 23 23 17 10 12 12 15 8 12 22 20 13 12 11 13 11 11 12 12

Mike's Variety 1211 Age: 2548.6±376.137 years
 13 24 14 11 12 14 12 12 13 13 16 17 9 10 11 11 25 15 19 30 15 15 15 17 11 11 19 23 17 14 18 16 35 38 12 12 12 9 15 16 8 10 10 8 10 11 12 23 24 16 10 12 12 15 8 12 22 20 13 12 11 13 11 11 12 12

Mike's Variety 1830-W1(-A) Age: 1058.75±156.307 years
 13 24 14 11 12 14 12 12 12 13 13 16 17 9 10 11 11 25 15 17 30 15 15 17 17 11 11 19 23 14 15 17 17 36 36 12 12 11 9 16 16 8 10 10 8 10 10 12 22 23 16 10 12 12 16 10 12 23 20 13 13 11 13 11 11 12 12

Mike's Variety 1416-B-WSW Age: 489.129±72.9029 years
 13 24 14 11 11 16 12 12 12 13 15 17 17 9 10 11 11 25 15 19 29 14 15 16 17 11 11 19 23 18 15 18 17 35 38 12 12 11 9 16 16 8 10 10 8 10 10 12 24 25 15 10 12 12 16 8 14 24 20 13 12 11 13 11 11 12 12

Mike's Variety 1515-Who Age: 719.764±111.373 years
 13 25 14 10 15 15 12 12 11 13 13 16 15 9 10 11 11 25 15 19 30 15 15 16 17 10 11 19 23 15 15 18 16 37 38 12 12 11 9 15 16 8 10 10 8 10 10 12 23 23 16 10 12 12 15 8 13 23 20 13 12 11 13 11 11 12 12

Mike's Variety 1199 Age: 1049.74±159.997 years
 13 24 14 11 11 14 12 12 12 13 13 17 18 9 9 11 11 25 15 19 15 15 16 17 10 11 19 23 16 15 19 17 36 37 12 12 11 9 15 16 8 10 10 8 10 11 12 23 23 16 10 12 12 14 8 12 22 20 13 12 11 13 11 11 12 12

Mike's Variety 2399-Am Age: 1419.48±216.742 years
 13 23 14 11 10 12 12 12 13 13 17 17 9 9 11 11 25 15 20 29 16 16 17 17 11 10 19 23 16 15 17 17 36 36 12 12 11 9 15 16 8 10 10 8 10 10 12 23 23 16 10 12 12 16 8 12 23 20 13 12 11 13 11 11 12 12

Cluster Modals (continued...)

Mike's Variety 1121

Age: 1412.54±213.105 years

393	390	19	391	385a	385b	426	388	439	389i	392	389iH	458	459a	459b	455	454	447	437	448	449	464a	464b	464c	464d	460	H4	YCA IIa	YCA IIb	456	607	576	570	CDYa	CDYb	442	438	531	578	395S1a	395S1b	590	597	641	472	406S1	511	425	413a	413b	567	594	436	490	534	450	444	481	520	446	617	568	572	640	492	565	
13	24	14	10	11	14	12	12	12	13	13	16	17	9	10	11	11	25	15	19	29	15	15	16	17	11	11	19	23	15	17	18	17	36	40	13	12	11	10	15	16	8	10	10	8	10	10	12	21	23	16	10	12	12	14	8	12	22	20	13	12	11	13	11	11	12	12

Mike's Variety V1410

Age: 1253.87±191.301 years

14	24	14	11	11	14	12	12	12	13	13	16	17	9	10	11	11	25	15	19	29	15	15	16	17	11	11	19	23	15	17	18	17	36	40	13	12	11	10	15	16	8	10	10	8	10	10	12	21	23	16	10	12	12	14	8	12	22	20	13	12	11	13	11	11	12	12
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Mike's Variety 2117

Age: 719.764±111.373 years

13	24	14	11	11	14	12	12	12	13	13	16	18	9	10	11	11	25	15	19	30	15	15	17	17	11	11	19	23	15	15	18	17	36	39	12	12	11	9	15	16	8	10	10	8	10	10	12	21	23	17	10	12	12	15	8	12	24	20	13	12	11	13	11	11	12	11
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Hopkins-McCabe Cluster

Age: 888.705±135.345 years

13	25	14	11	11	14	12	12	12	13	13	18	18	9	10	12	11	26	15	19	29	15	15	17	18	11	11	19	23	15	15	18	17	36	38	11	12	11	9	15	16	8	10	10	8	10	10	12	23	24	16	10	12	12	14	8	12	22	20	13	12	11	13	11	11	12	12
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Mike's Variety 1616

Age: 540.024±81.1723 years

13	24	14	11	11	14	12	12	11	13	13	16	17	9	10	11	11	25	15	19	30	15	15	16	17	11	11	19	23	16	16	19	15	36	39	12	12	11	9	15	16	8	10	10	8	10	10	12	23	23	16	10	12	12	15	8	11	22	20	14	12	11	13	11	11	12	12
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Mike's Variety 1722

Age: 1009.3±153.802 years

13	24	14	11	11	14	12	12	12	13	13	17	17	9	10	11	11	25	15	20	29	15	15	16	17	11	11	19	22	16	15	18	16	36	36	12	12	11	9	15	16	8	10	10	8	10	10	12	23	23	16	10	12	12	15	8	12	22	20	13	12	11	13	11	11	12	12
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Notes

The Tree

The tree was generated using the neighbor-joining algorithm provided by the PHYLIP phylogeny package. This algorithm requires a distance matrix, for which the data came from the 2011-01-10 version of Mike Walsh's Excel spreadsheet. Only members with at least the 67 FTDNA markers were used. For now, only the markers in FTDNA's standard set of 67 were used to calculate the matrix, but I will use markers beyond these in the future as more data becomes available.

Modal Values and Age Estimates

For each cluster on the tree, I provide both its modal haplotype determined from its descendant members on the tree, as well as an age analysis. The age analysis was completed in the style of what Anatole Klyosov describes in his Journal of Genetic Genealogy article, 5(2):186-216, 2009. I have not taken into consideration the up/down mutation asymmetry, but may do so in the future. I used a 67-marker average mutation rate of 0.002 and assumed 25 years per generation. I included a 10% uncertainty for the average mutation rate, and a 10% uncertainty for the average number of years in a generation.

For the calculation of the modal haplotypes, in the event of a tie for a particular marker, with two or more different allele values having the same count of haplotypes, the allele closest to the R-L21 modal haplotype was chosen. This was done so that the modal haplotype would more closely resemble what might be the ancestral haplotype for the cluster.

Allele Distribution Diagram

The allele distribution plot attempts to display relative frequency information of the various allele values for each marker. For each possible allele value of each marker, a different coloured box is used to represent the fraction of haplotypes, with that particular allele value. A red box indicates that more than 50% of the haplotypes have that particular value, an orange box indicates more than 33% have that particular value, yellow for more than 25%, and blue indicates that the fraction is simply greater than 0.

If the fraction for an allele is within 5% of what it is for the modal value, I have indicated that allele with a small circle. The idea here, is that if the other allele value is so close, then if you were to use different sample data, you could potentially end up with a different modal value.

- - greater than 0% of haplotypes
- - greater than 25% of haplotypes
- - greater than 33% of haplotypes
- - greater than 50% of haplotypes

Consider the following example of DYS 464c for the whole of R-L21. We look at what fraction of the 1483 people in this cluster have a particular allele value. The modal value is clearly 17, but 16 is not far behind. As 16 is within 5% of the modal value, I have indicated that close relationship with a small circle.

Allele	Count	Fraction	Colour
19	0	0.00%	
18	14	0.94%	■
17	694	46.80%	■
16	626	42.21%	■
15	145	9.78%	■
14	2	0.13%	■
13	2	0.13%	■
12	0	0.00%	

