

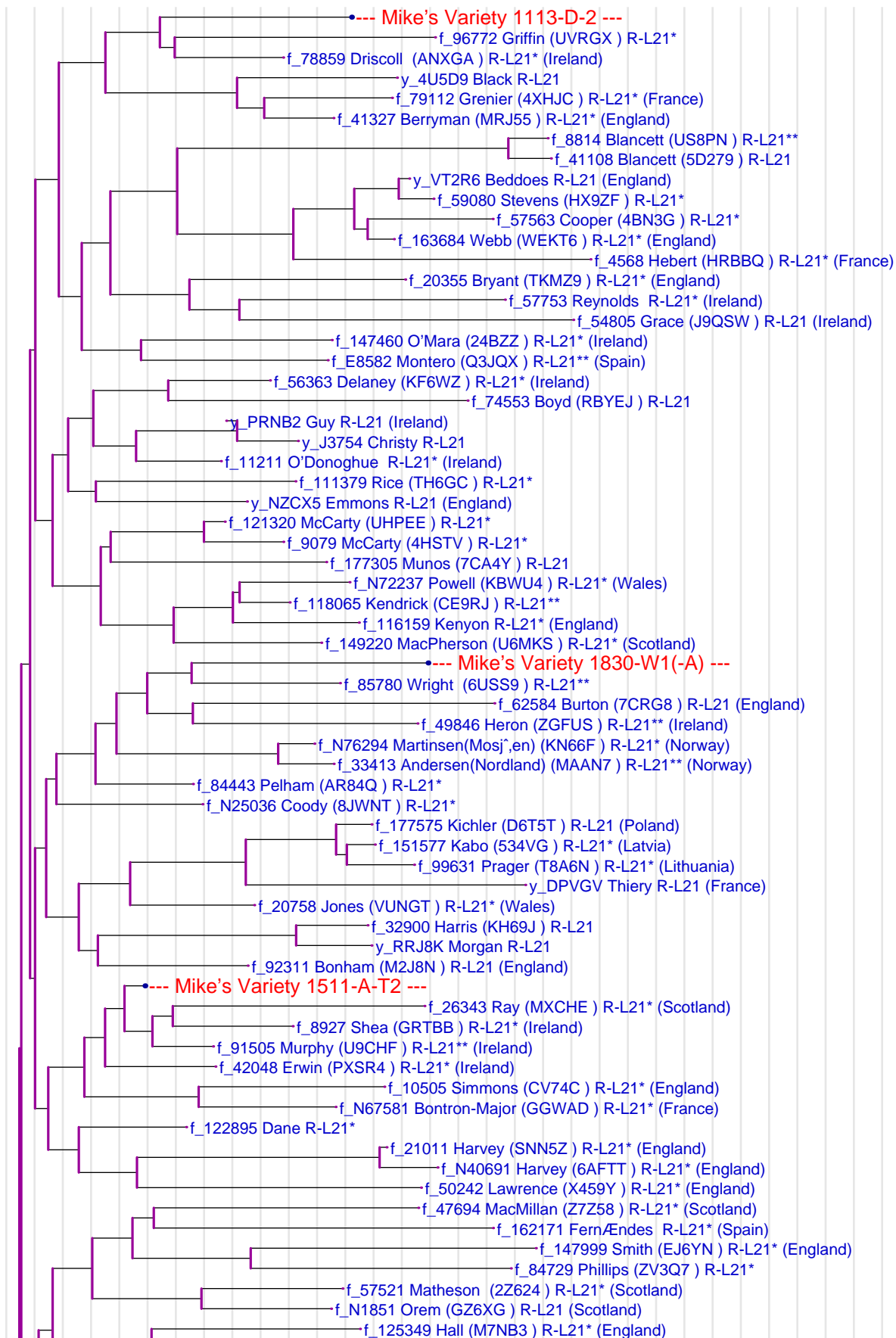
# R-L21

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

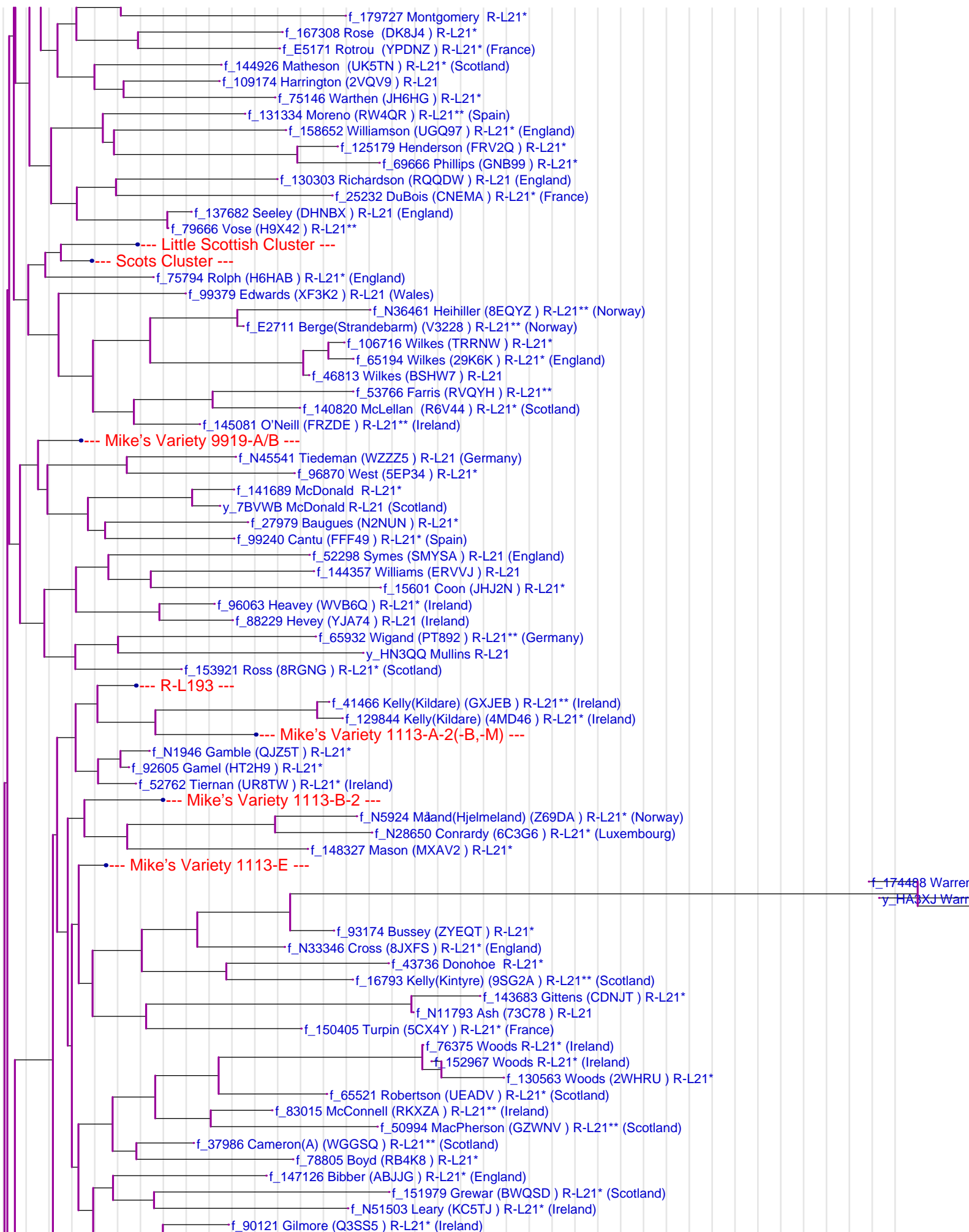
13 24 14 11 11 14 12 12 12 13 13 29 17 9 10 11 11 25 15 19 30 15 15 17 17 11 11 19 23 16 15 18 17 37 38 12 12 11 9 15 16 8 10 10 8 10 10 12 23 23 16 10 12 12 15 8 12 22 20 13 12 11 13 11 11 12 12

## Age Analysis

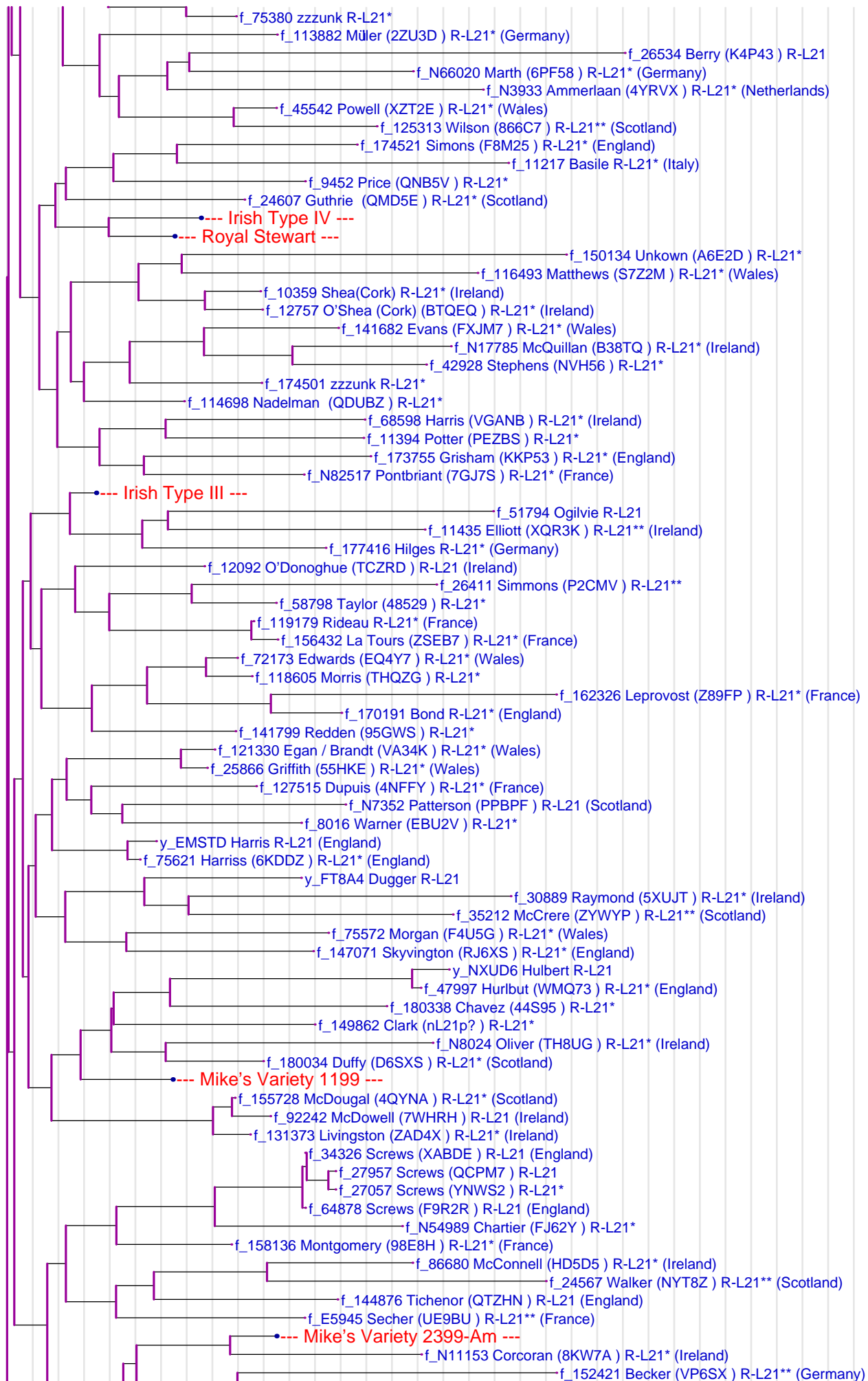
Total number of members	Total number of markers	Total number of mutations	Mutation fraction	Age estimate (in generations)	Age estimate (in years)
1377	92259	22713	24.62%	140.27±14.04	3506.85±496.112



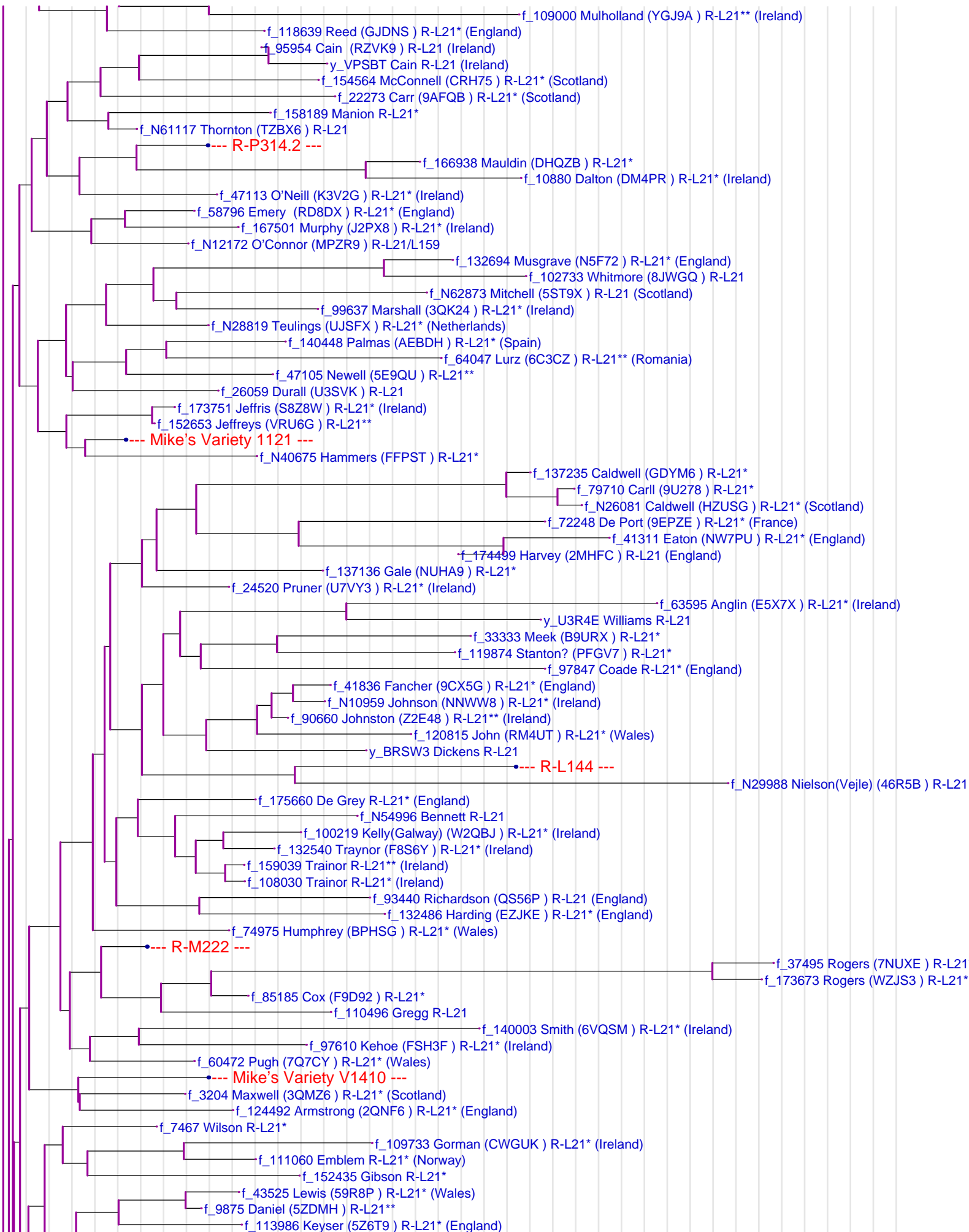
The vertical grey lines are separated 10 generations apart.



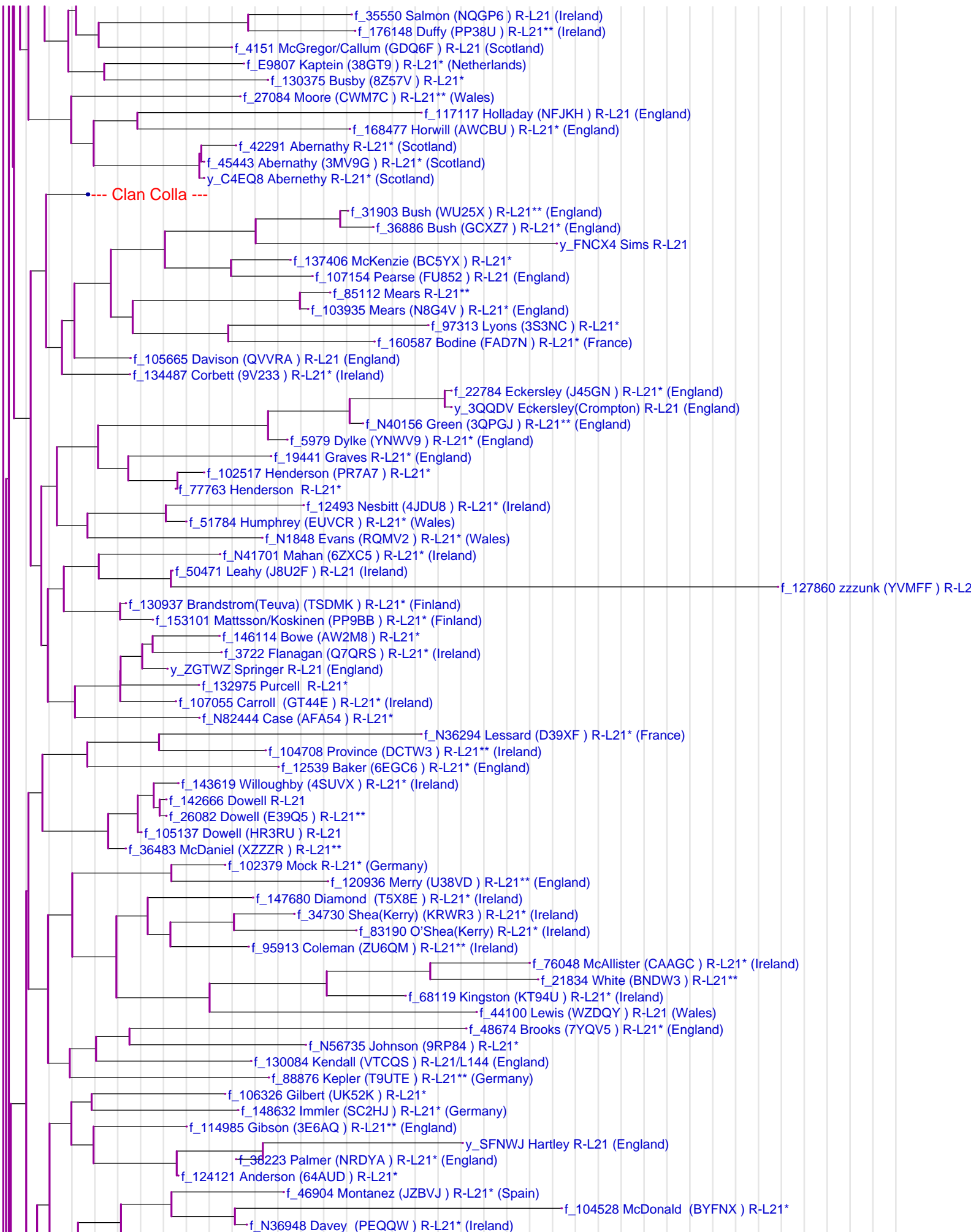
The vertical grey lines are separated 10 generations apart.



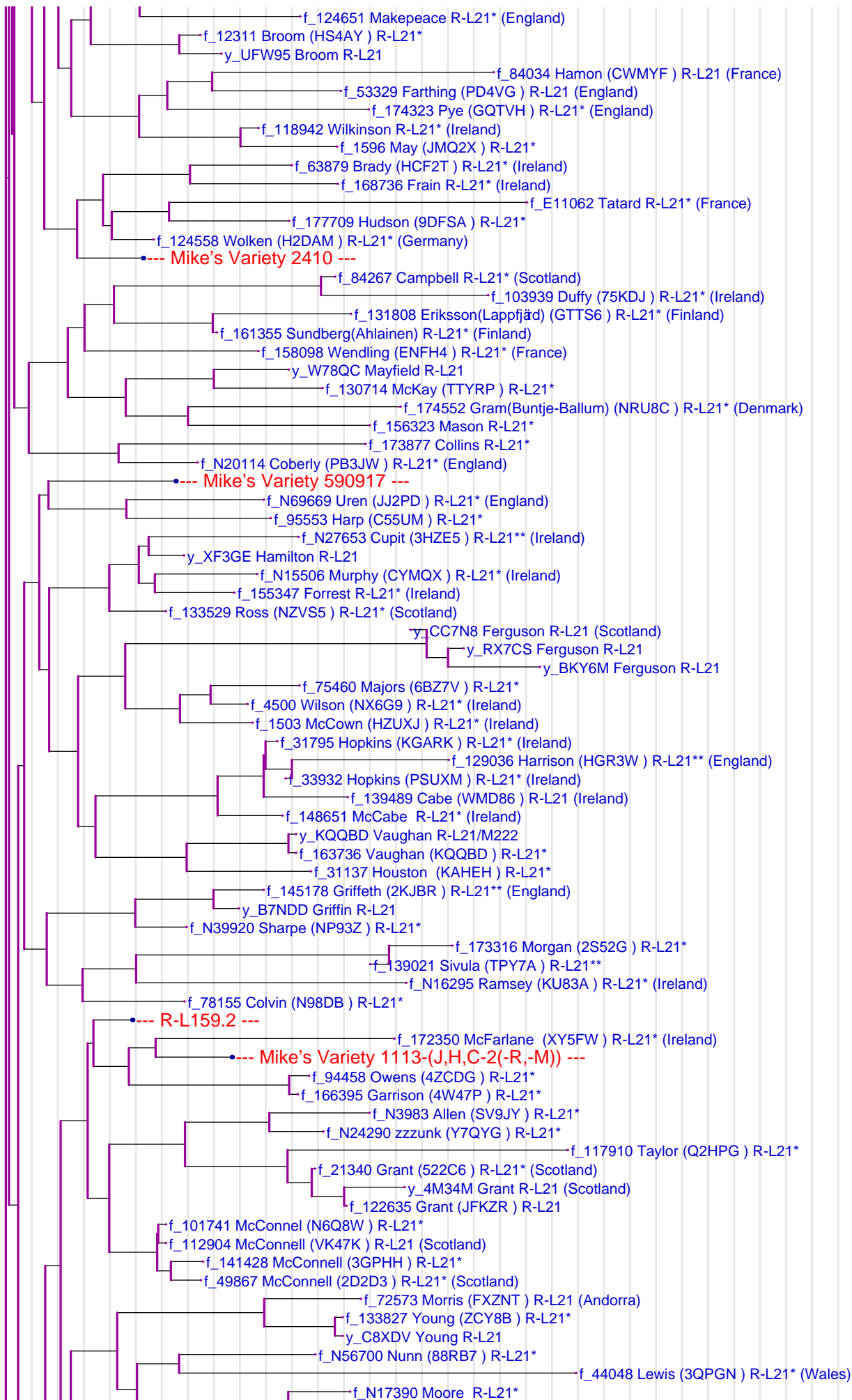
The vertical grey lines are separated 10 generations apart.



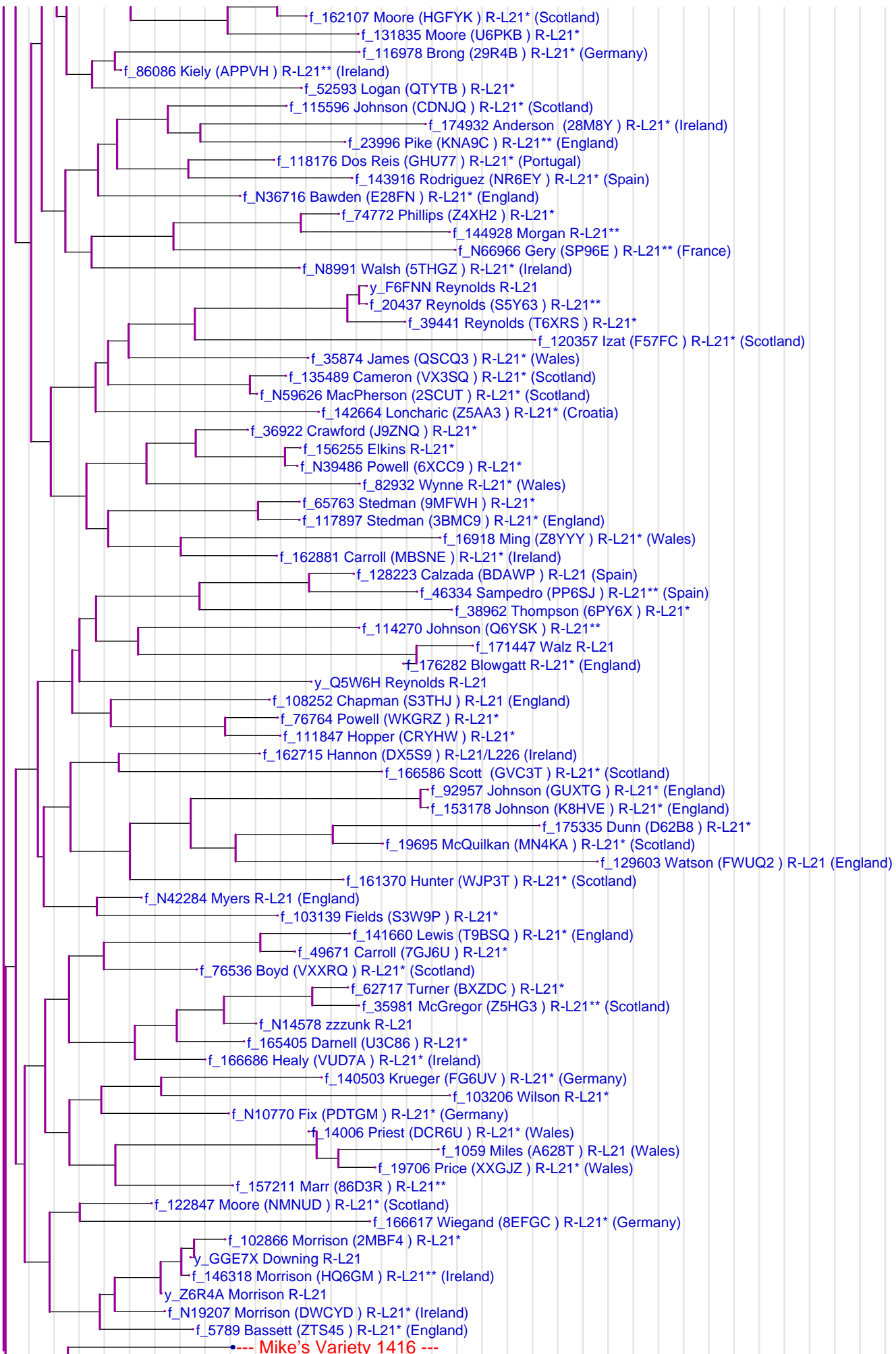
The vertical grey lines are separated 10 generations apart.



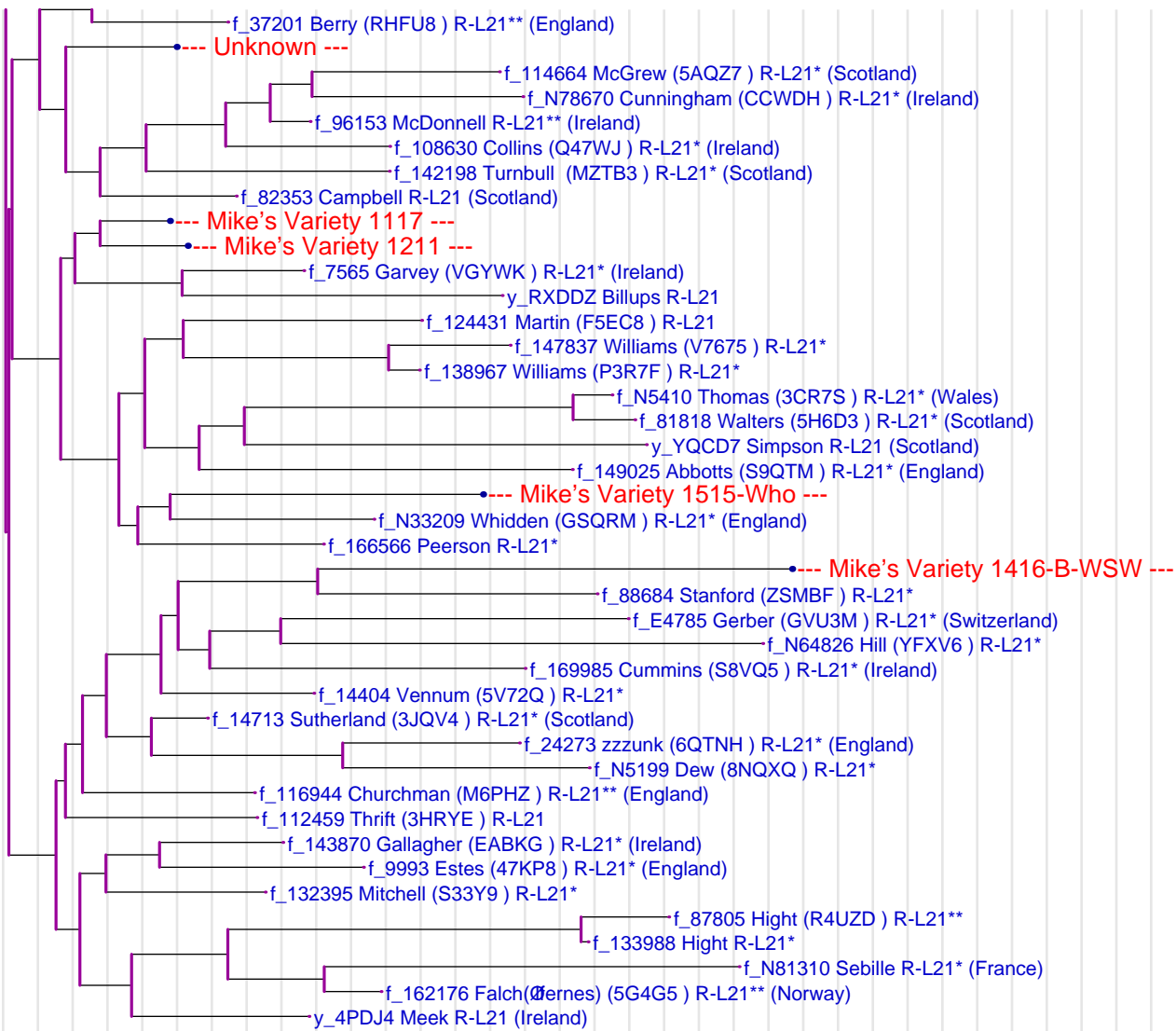
The vertical grey lines are separated 10 generations apart.



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.



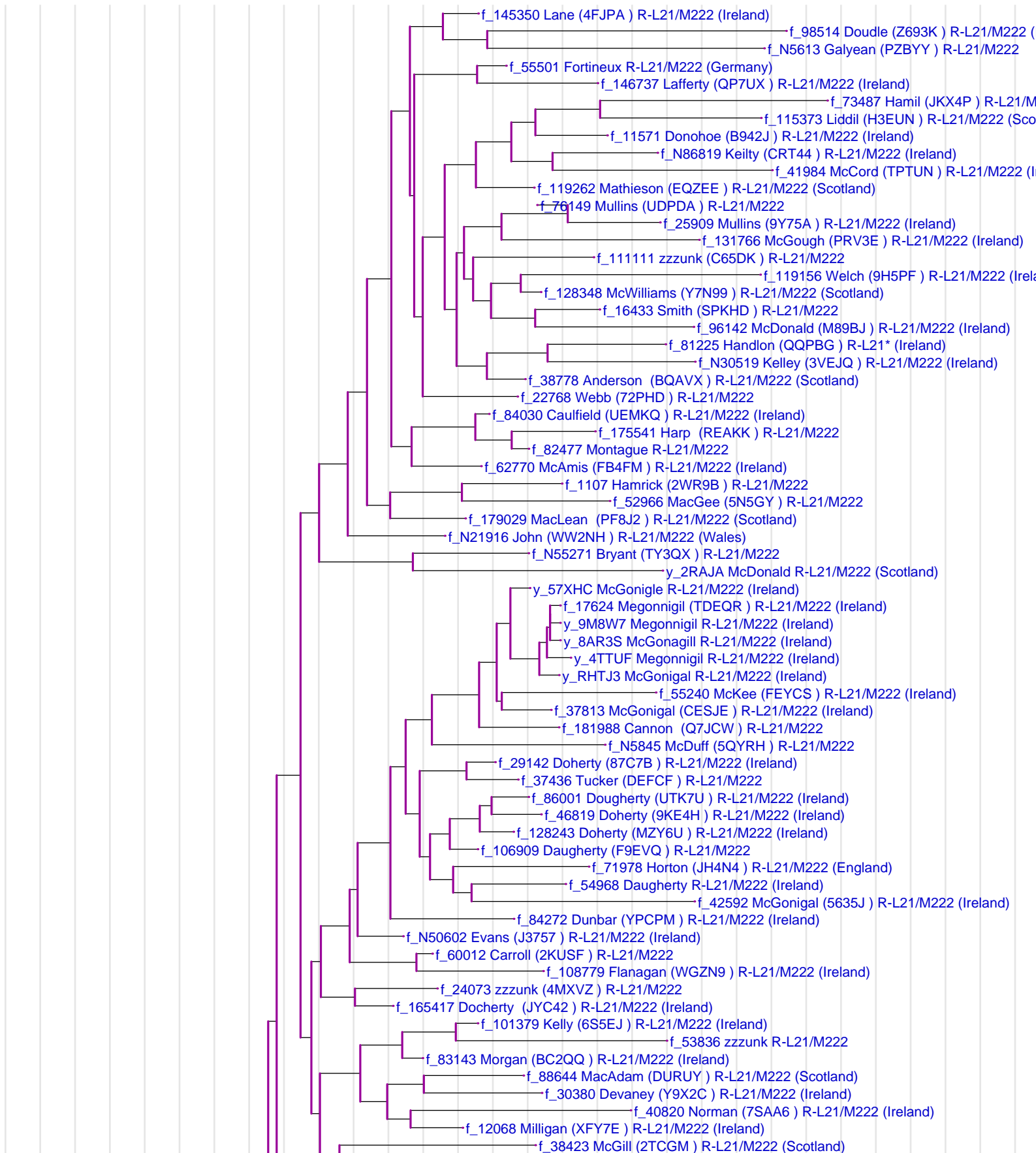
# R-M222

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

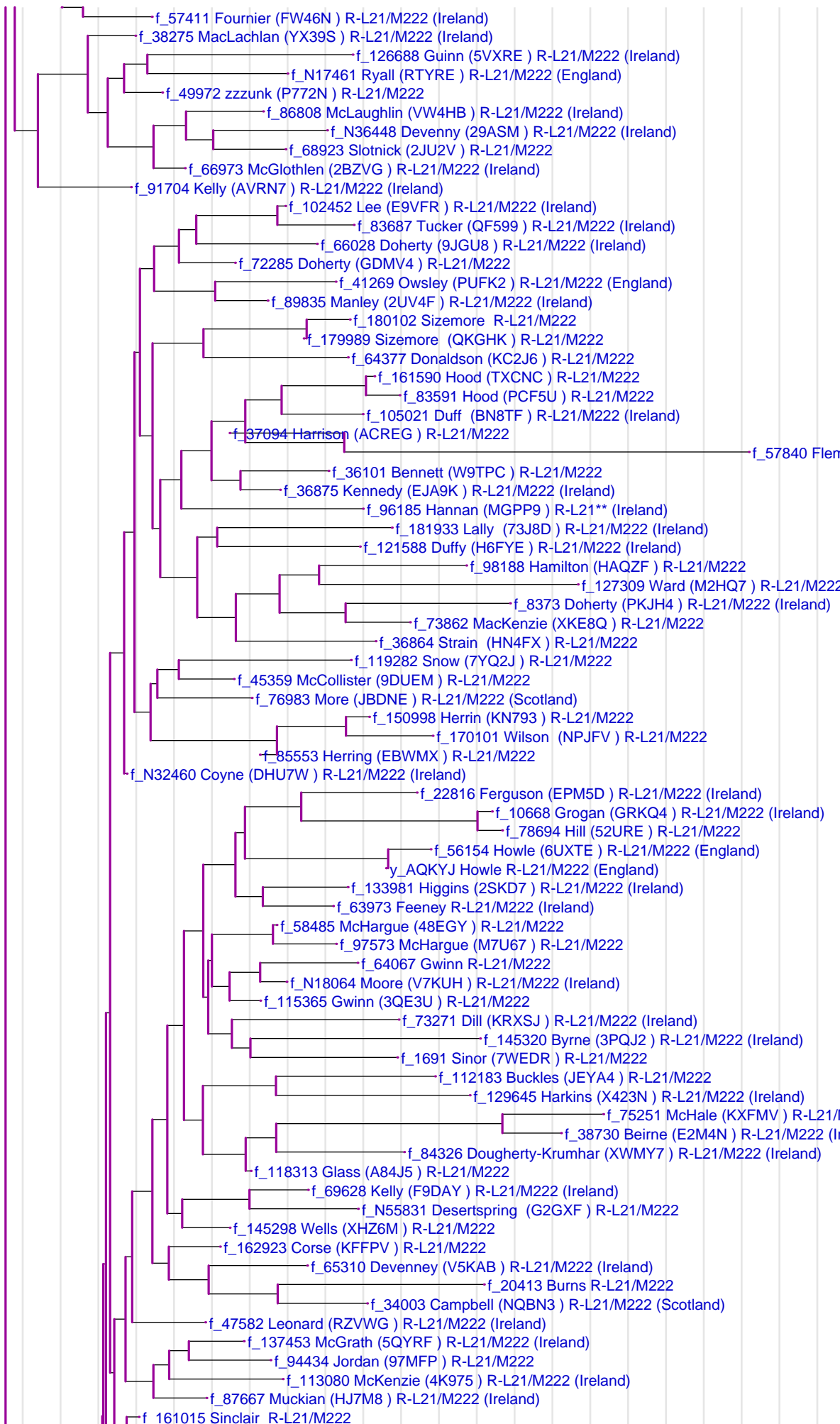
13 25 14 11 11 13 12 12 12 13 14 29 17 9 10 11 11 25 15 18 30 15 16 16 17 11 11 19 23 17 16 18 17 38 39 12 12 11 9 15 16 8 10 10 8 10 10 12 21 23 16 10 12 12 16 8 12 20 13 12 11 13 11 11 12 12

## Age Analysis

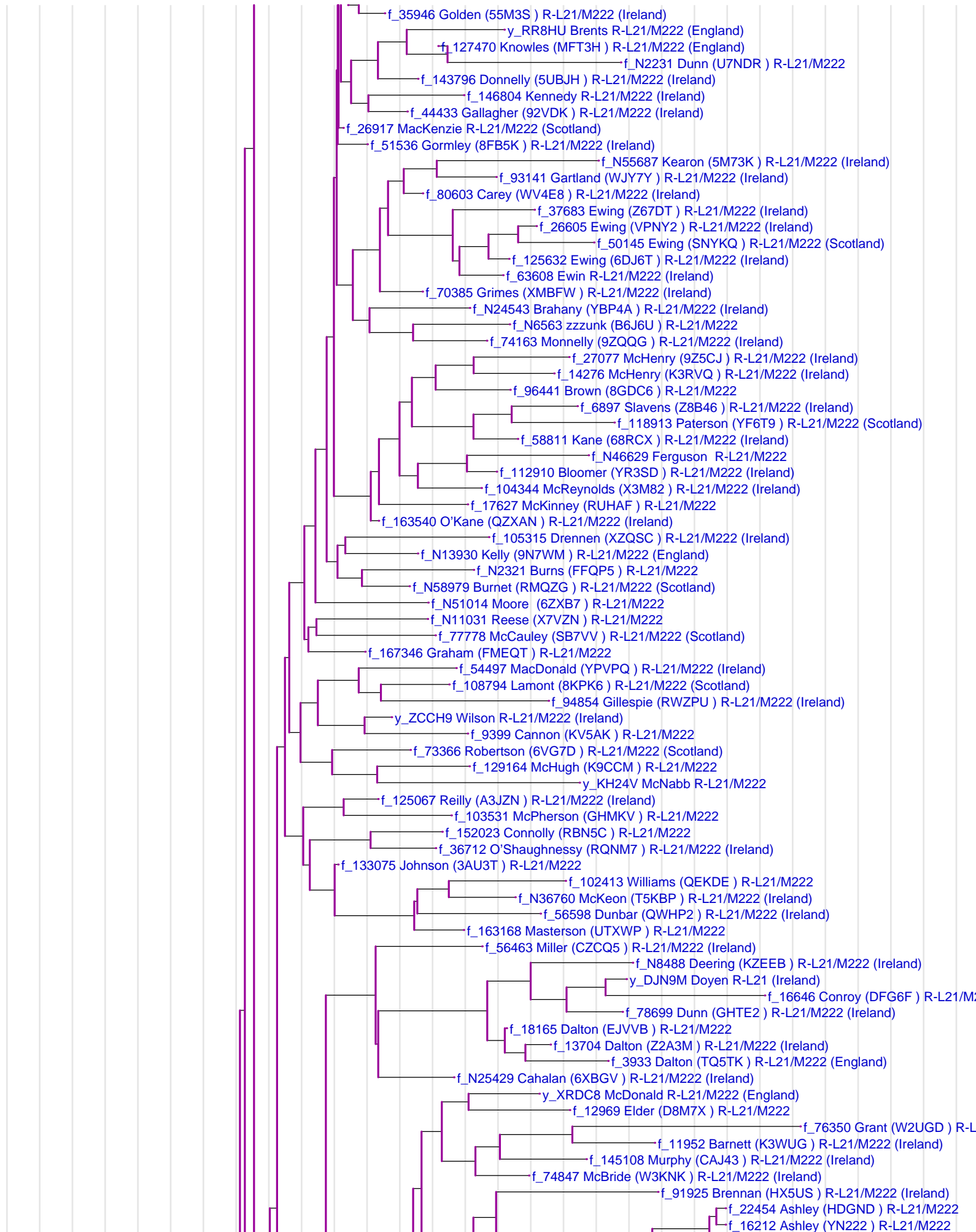
Total number of members	Total number of markers	Total number of mutations	Mutation fraction	Age estimate (in generations)	Age estimate (in years)
296	19832	2294	11.57%	61.38±6.16	1534.55±217.324



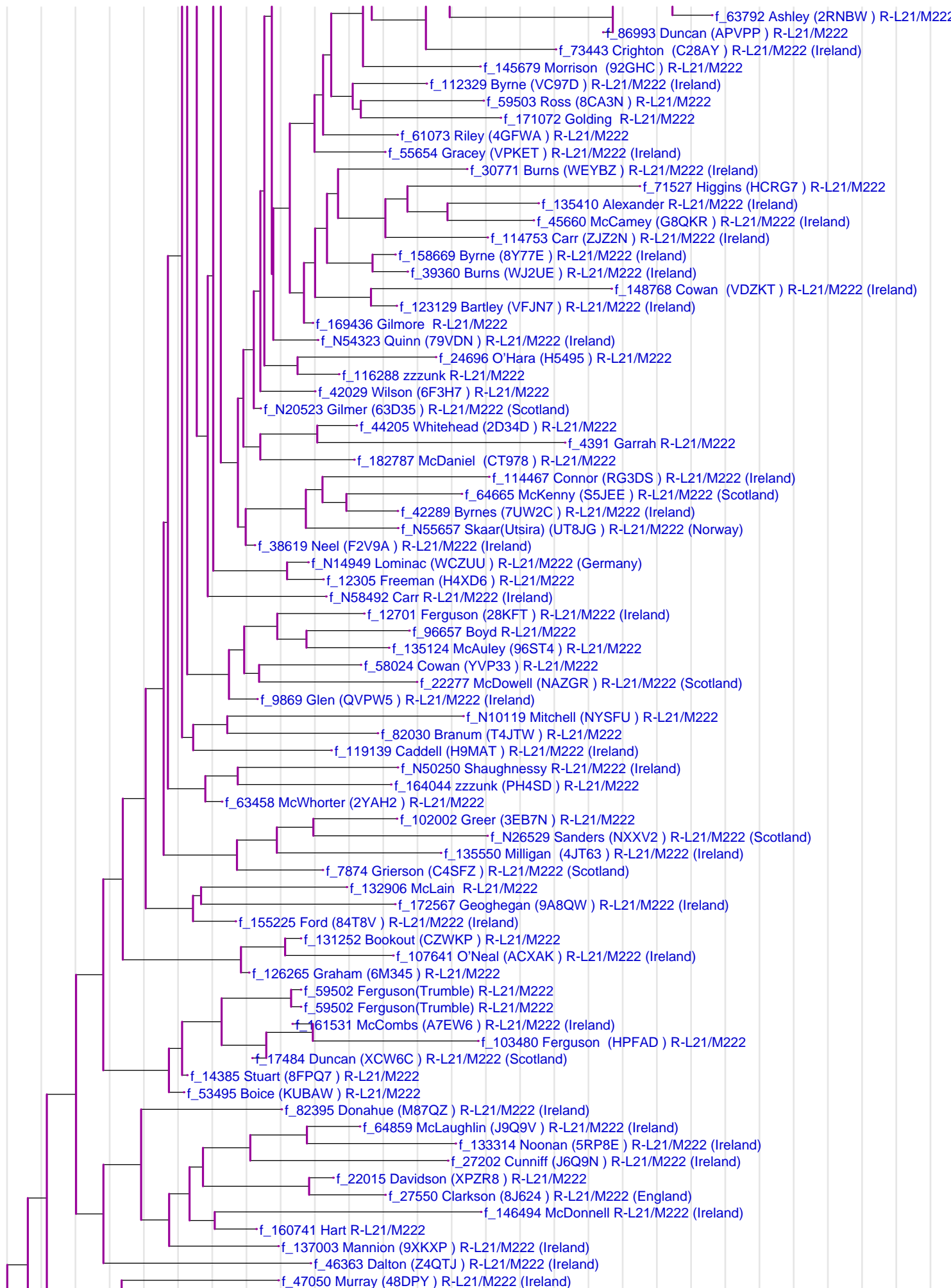
The vertical grey lines are separated 10 generations apart.



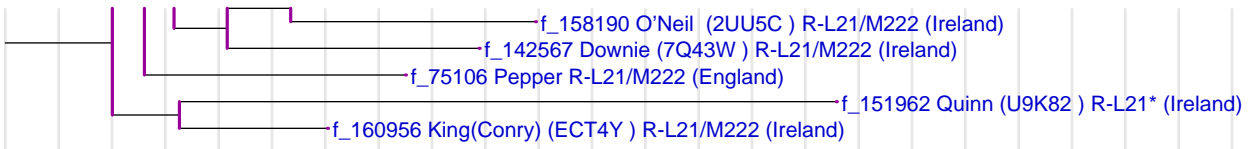
The vertical grey lines are separated 10 generations apart.



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.

13 24 14 10 11 14 12 12 13 13 29 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

## 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	96	8.96%	46.87±4.92	1171.84±169.889



The vertical grey lines are separated 10 generations apart.

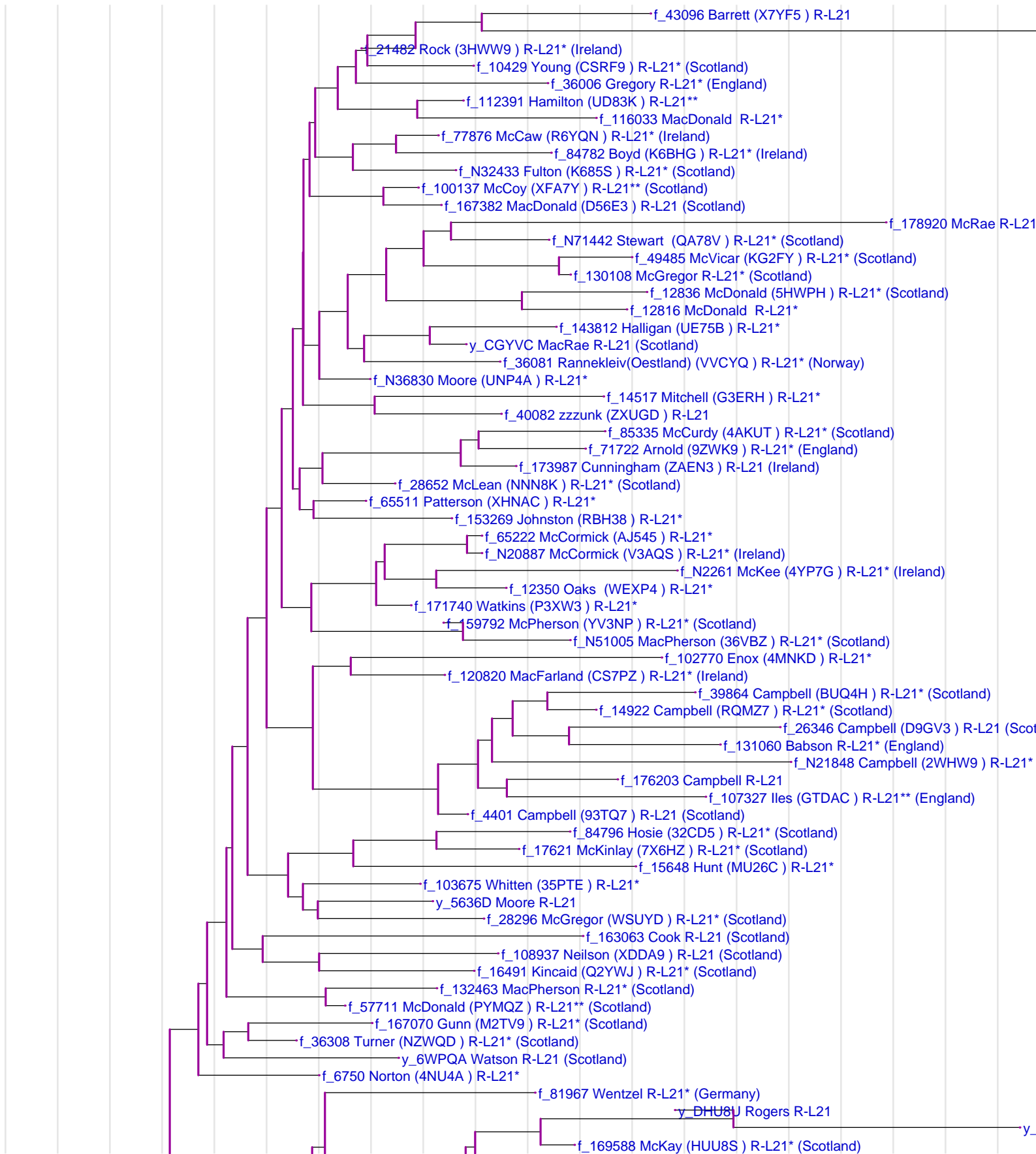
# Scots Cluster

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

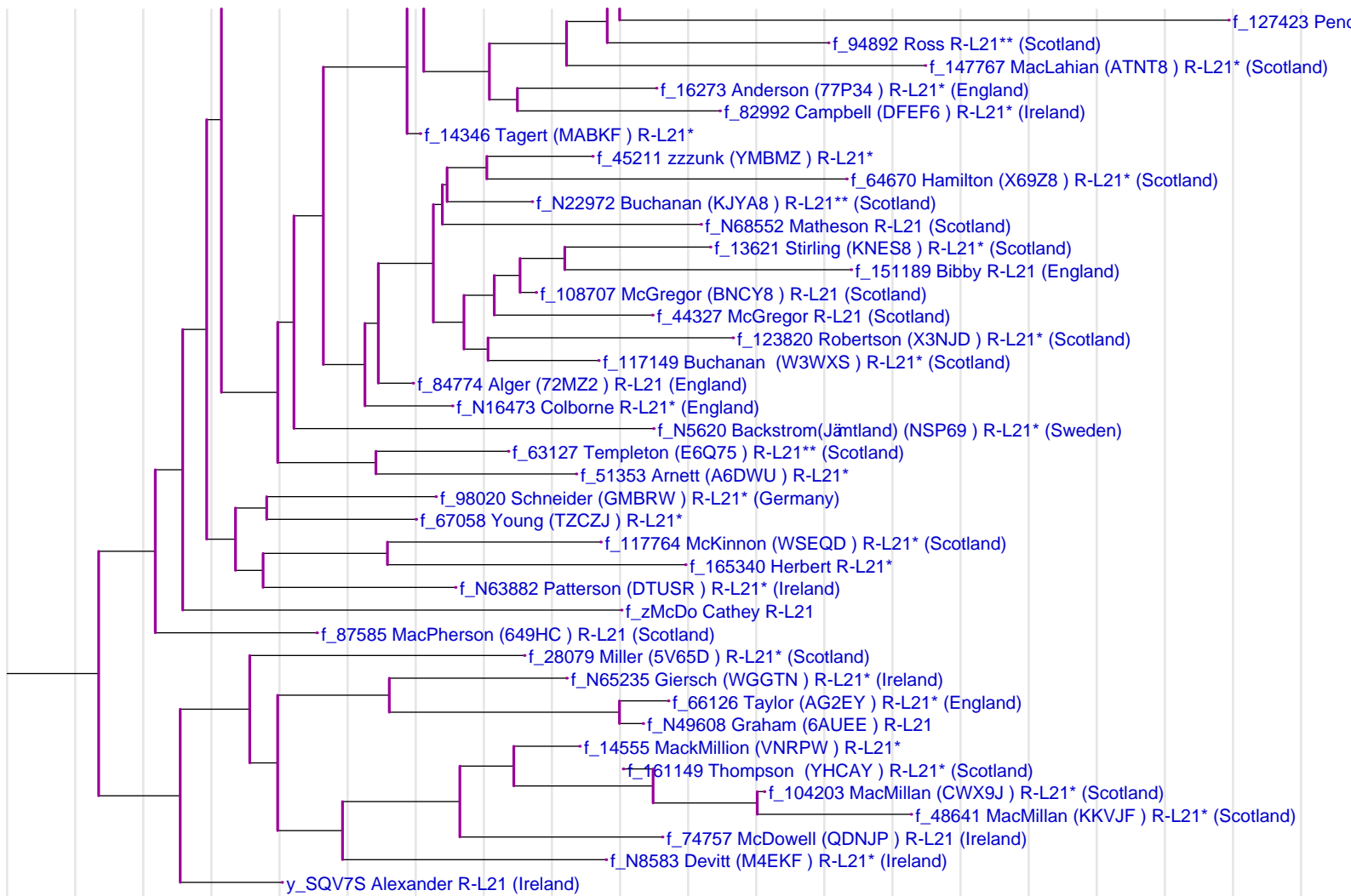
13 24 14 10 11 14 12 12 12 13 13 30 18 9 10 11 11 25 15 19 30 15 15 17 17 11 12 19 24 15 15 18 17 37 38 12 12 12 9 15 16 8 10 10 8 10 10 12 22 23 16 10 12 12 15 8 11 22 20 13 12 11 13 11 11 12 12

## Age Analysis

Total number of members	Total number of markers	Total number of mutations	Mutation fraction	Age estimate (in generations)	Age estimate (in years)
105	7035	778	11.06%	58.53±5.90	1463.2±207.745



The vertical grey lines are separated 10 generations apart.



The vertical grey lines are separated 10 generations apart.



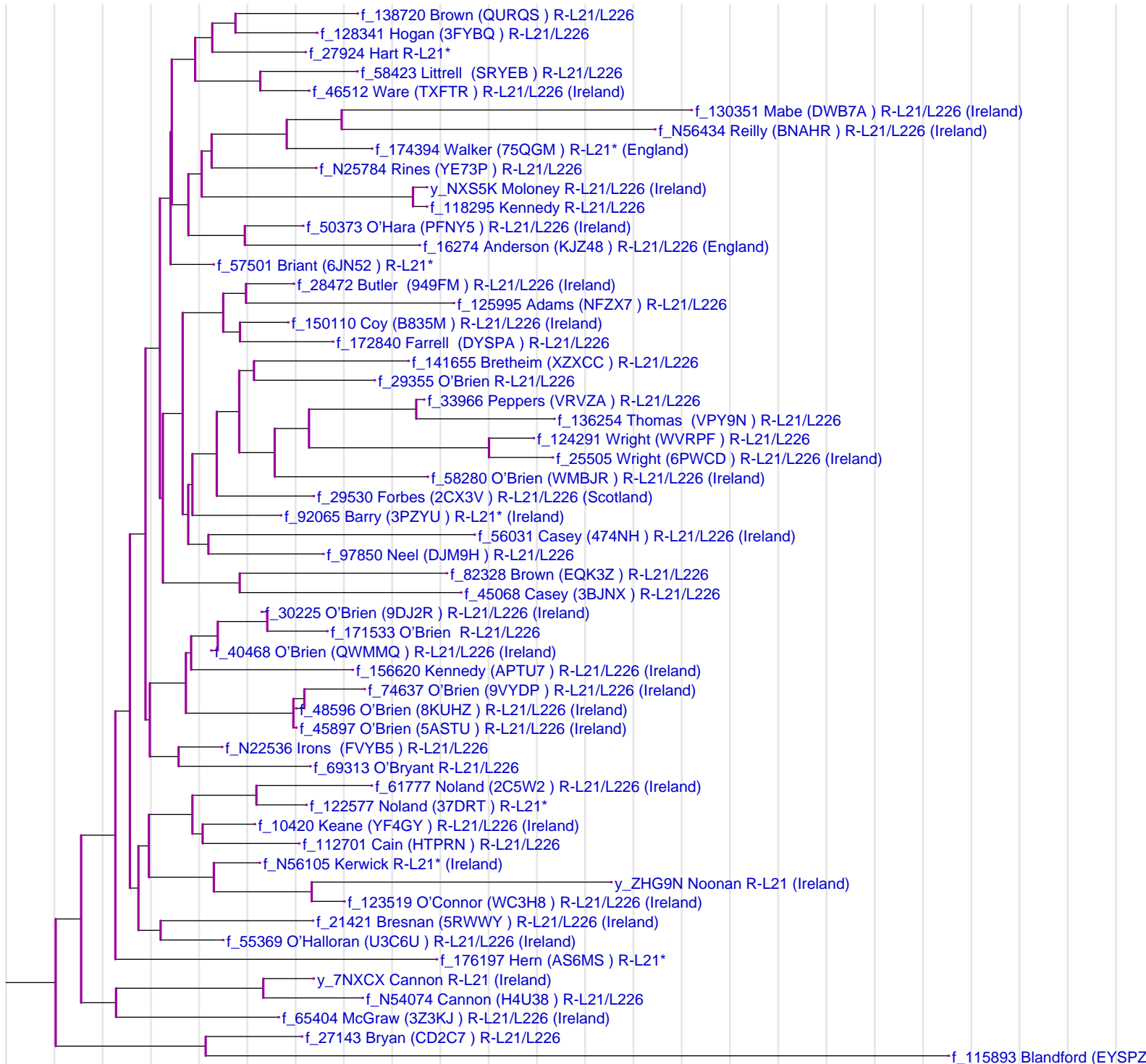
# Irish Type III

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

13 24 14 11 11 14 12 12 11 13 13 29 17 8 9 11 11 25 15 19 29 13 13 15 17 11 11 19 23 15 15 18 17 36 39 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

## Age Analysis

Total number of members	Total number of markers	Total number of mutations	Mutation fraction	Age estimate (in generations)	Age estimate (in years)
55	3685	379	10.28%	54.21±5.50	1355.25±193.093



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.

13 24 14 10 11 14 12 12 12 13 13 29 17 9 10 11 11 25 15 19 30 15 15 16 17 11 11 19 23 16 14 17 18 36 40 12 12 11 10 15 16 8 10 10 8 10 10 12 23 16 10 12 12 15 8 12 22 20 12 10 11 13 11 11 12 12

## 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	26	6.47%	33.42±3.76	835.466±125.74



The vertical grey lines are separated 10 generations apart.

# Clan Colla

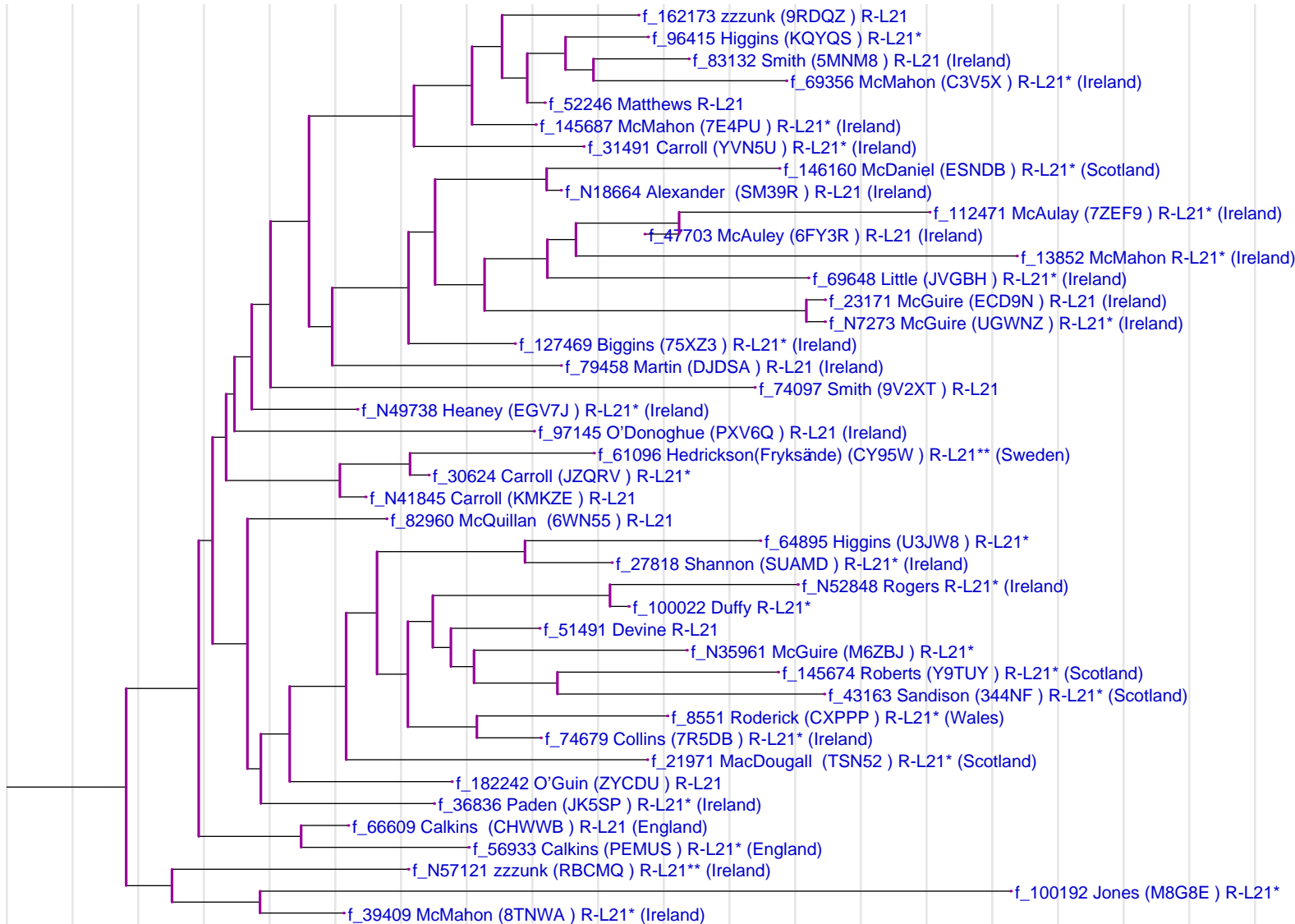
This is the modal haplotype for Clan Colla. The coloration is with respect to the modal haplotype of the full tree.

13 24 14 11 11 15 12 12 13 13 13 29 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 12 22 23 16 10 12 12 16 8 12 22 20 13 12 11 13 11 11 12 12

## 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	326	11.58%	61.48±6.27	1537.05±219.522

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.

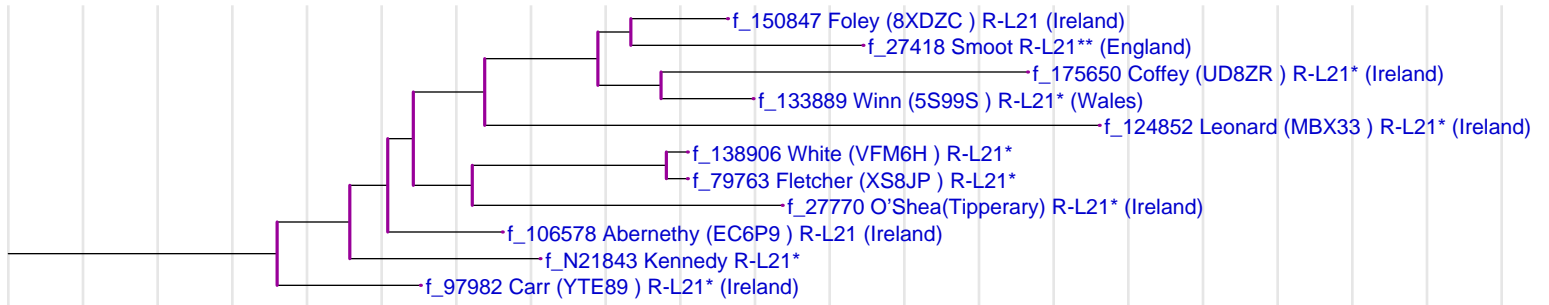
# Irish Type IV

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

13 24 14 10 12 15 13 12 12 13 13 29 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

## Age Analysis

Total number of members	Total number of markers	Total number of mutations	Mutation fraction	Age estimate (in generations)	Age estimate (in years)
11	737	73	9.91%	52.10±5.59	1302.59±190.972



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.

13 24 14 11 11 14 12 12 12 13 13 29 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

## 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.

# Unknown

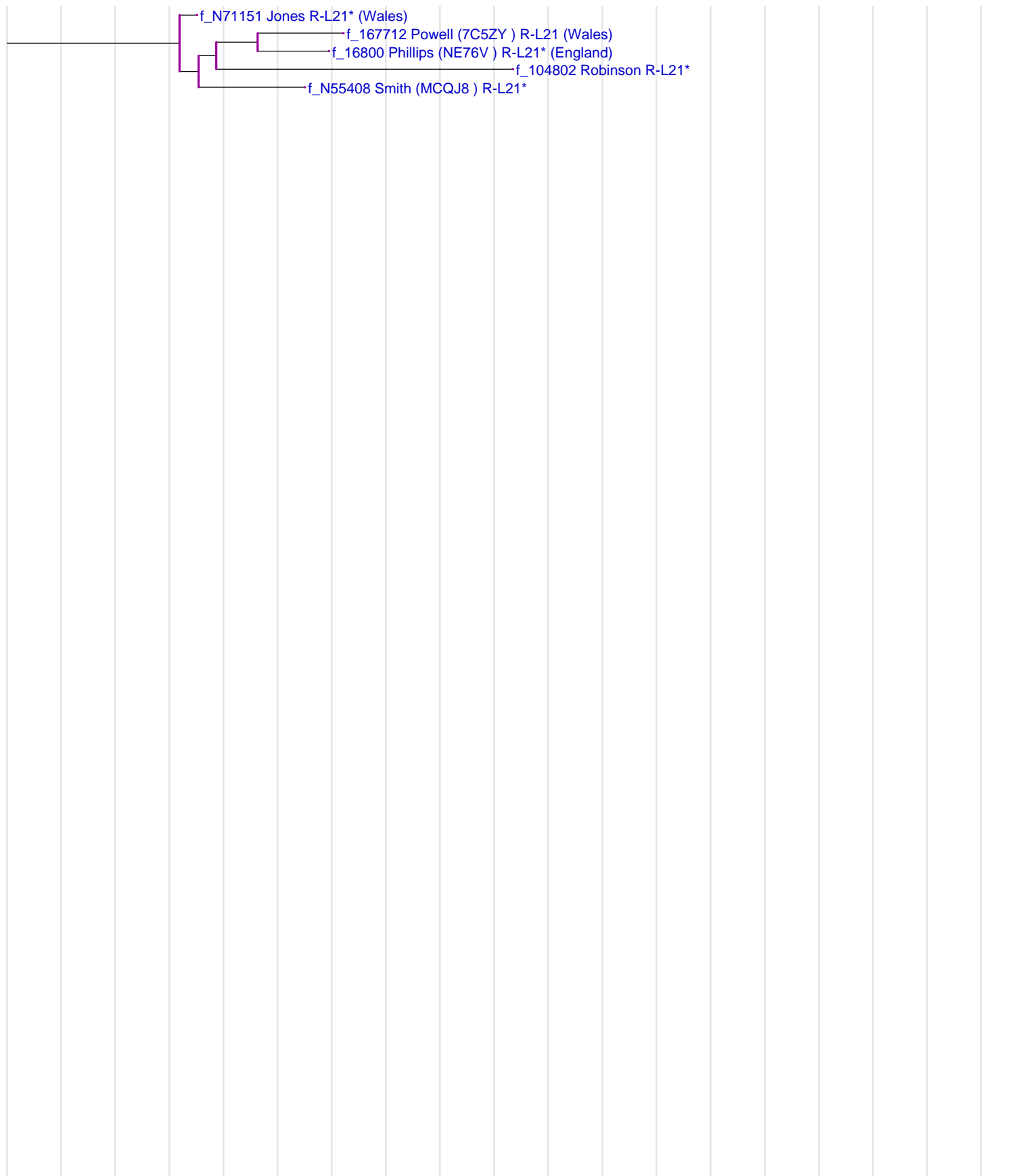
This is the modal haplotype for Unknown. The coloration is with respect to the modal haplotype of the full tree.

13 24 14 11 11 14 12 12 12 13 13 29 17 9 10 11 11 25 15 19 29 15 15 17 17 11 11 19 23 15 14 17 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

## 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	21	6.27%	32.36±3.71	808.928±123.146

Note: Mike Walsh has identified this cluster, but I'm uncertain of his name for it.



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.

13 24 14 11 11 15 12 12 12 13 13 29 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

## 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 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 1511-A-T2

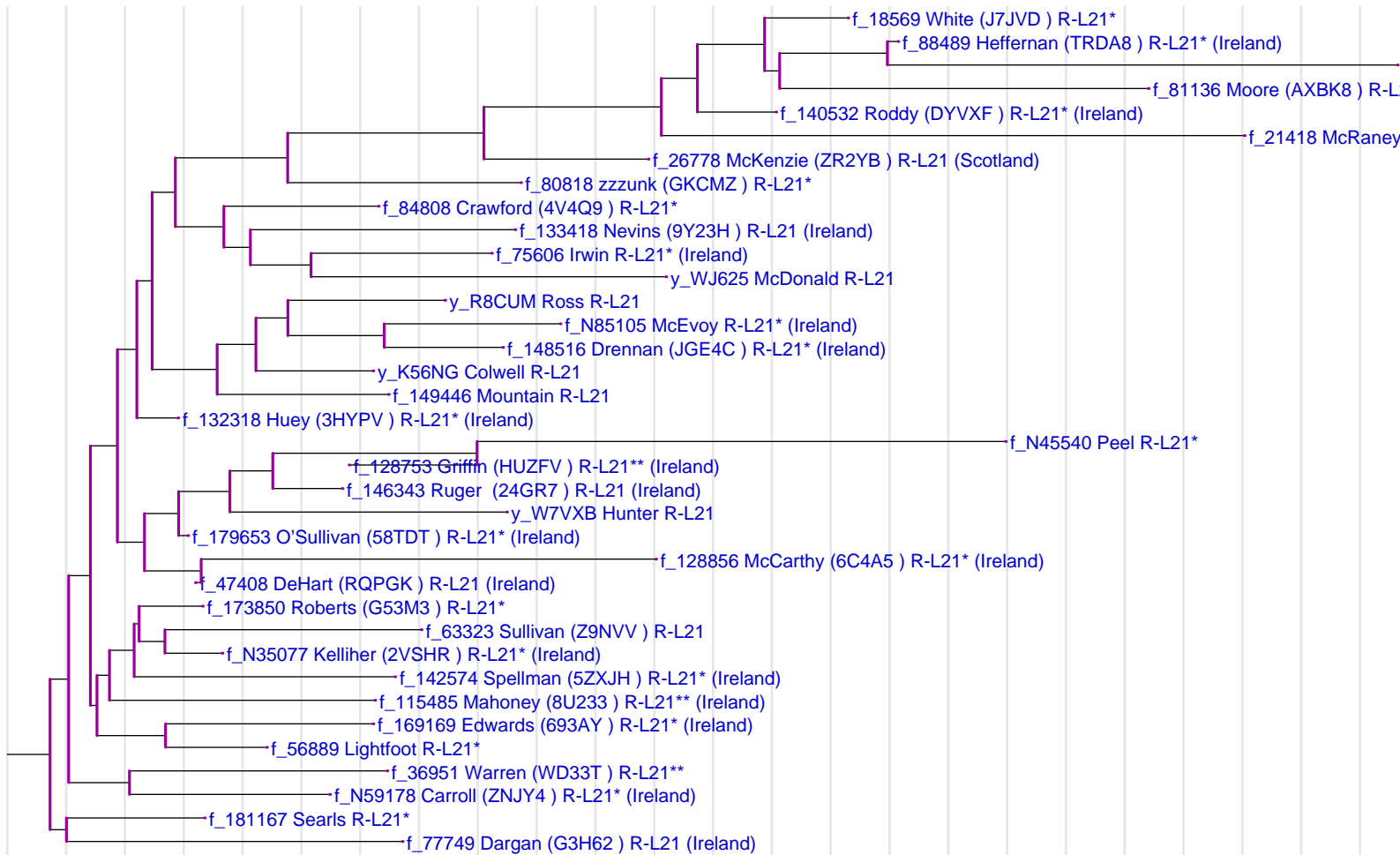
This is the modal haplotype for Mike's Variety 1511-A-T2. The coloration is with respect to the modal haplotype of the full tree.

13 24 14 10 11 15 12 12 11 13 13 29 17 9 10 11 11 24 15 19 29 15 15 17 17 11 11 19 23 15 15 18 17 36 37 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

## Age Analysis

Total number of members	Total number of markers	Total number of mutations	Mutation fraction	Age estimate (in generations)	Age estimate (in years)
36	2412	290	12.02%	63.96±6.54	1598.91±228.738

Note: 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.



# R-L193

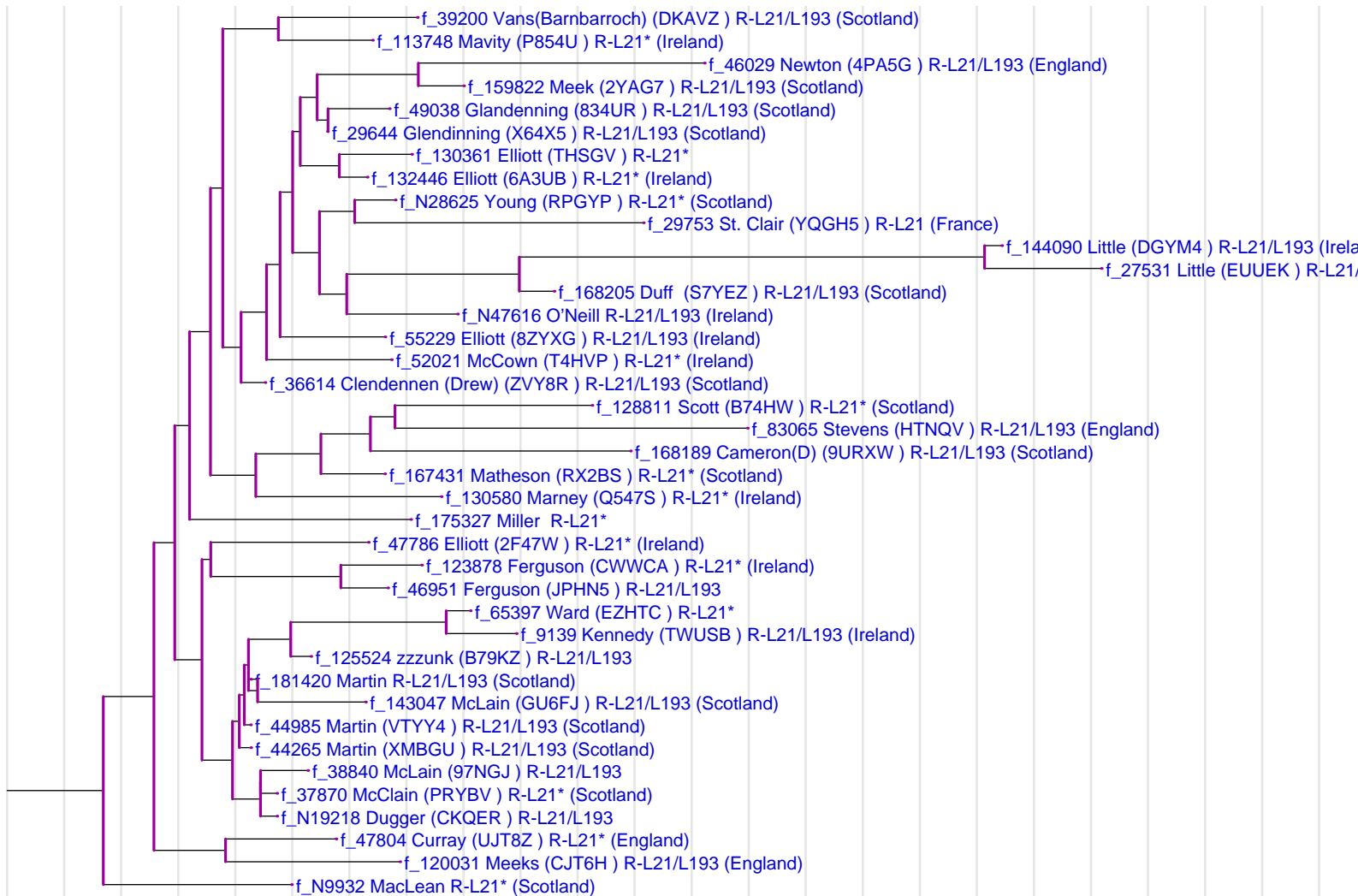
This is the modal haplotype for R-L193. The coloration is with respect to the modal haplotype of the full tree.

13 24 14 11 11 14 12 12 13 13 29 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 12

## Age Analysis

Total number of members	Total number of markers	Total number of mutations	Mutation fraction	Age estimate (in generations)	Age estimate (in years)
39	2613	219	8.38%	43.74±4.46	1093.44±156.234

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.

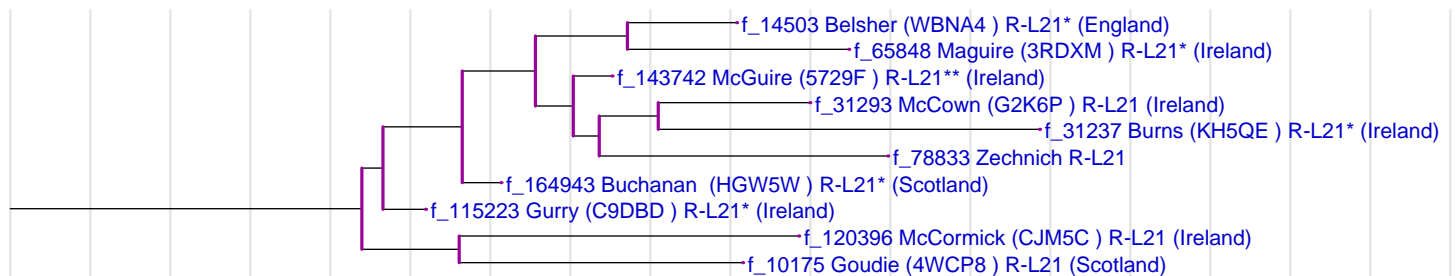
# Mike's Variety 1113-A-2(-B,-M)

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.

13 25 14 11 11 14 12 12 12 13 13 29 16 9 10 11 11 25 16 18 29 15 15 17 17 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 12

## 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	50	7.46%	38.76±4.18	968.975±142.429



The vertical grey lines are separated 10 generations apart.

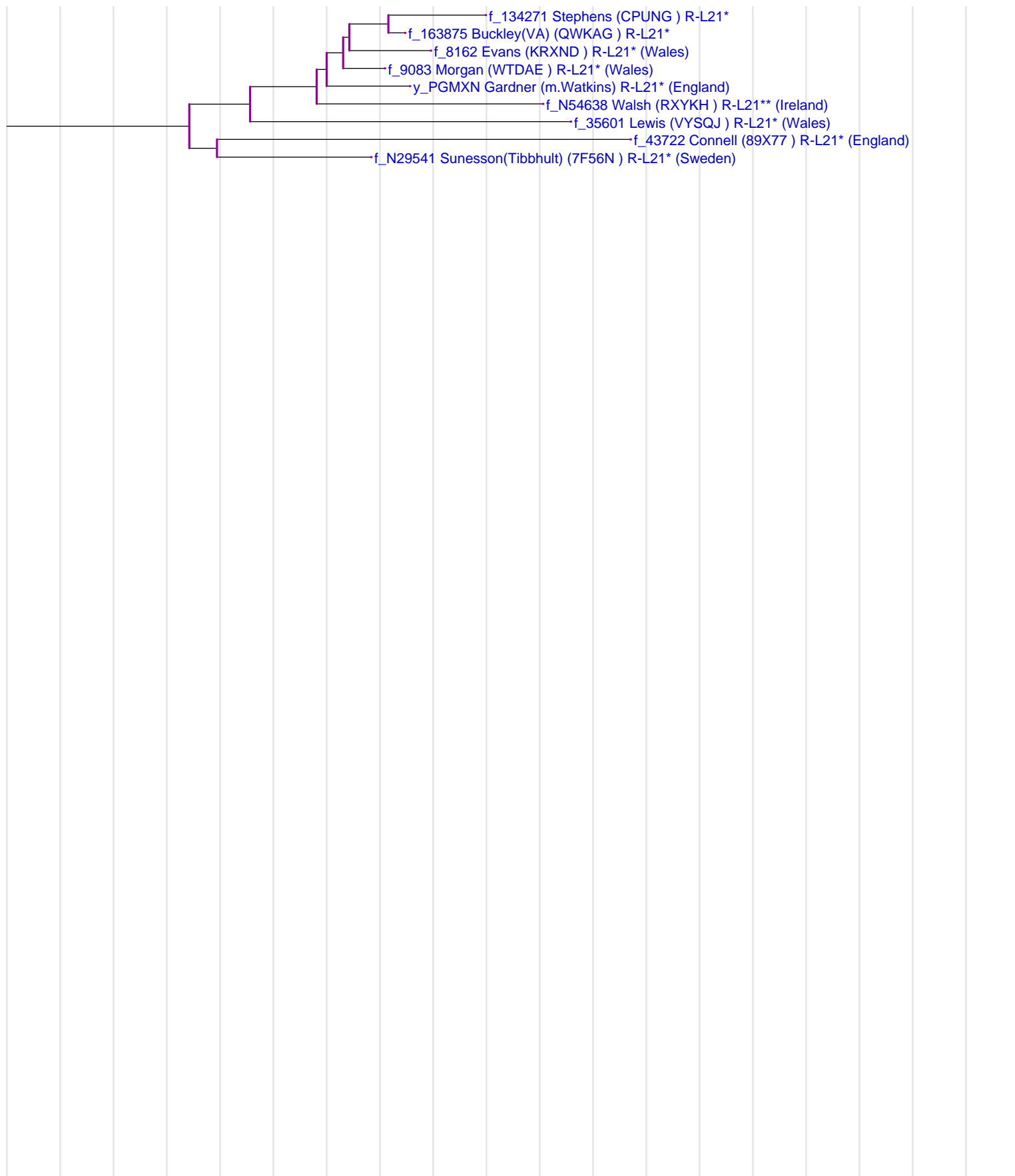
# Mike's Variety 1113-B-2

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.

13 24 15 11 11 14 12 12 12 13 13 29 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

## 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.

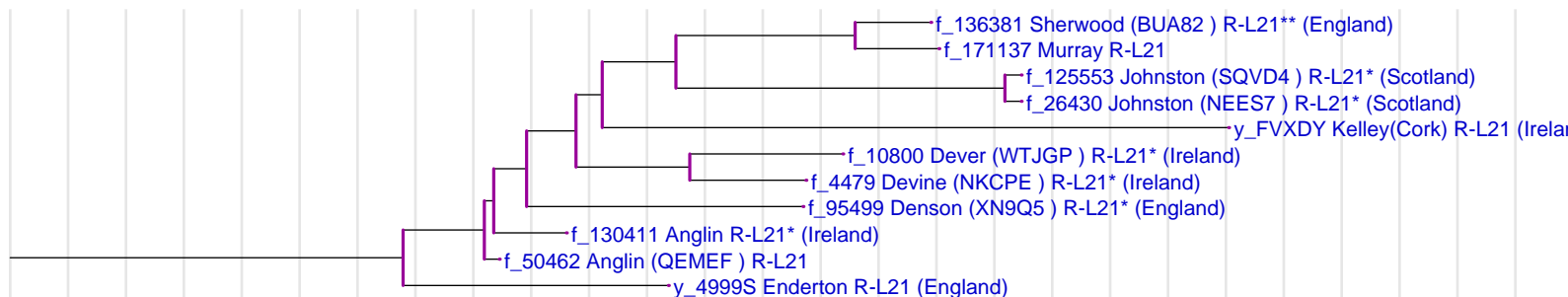
# Mike's Variety 1113-D-2

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.

13 23 14 10 11 14 12 12 11 13 13 28 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

## Age Analysis

Total number of members	Total number of markers	Total number of mutations	Mutation fraction	Age estimate (in generations)	Age estimate (in years)
11	737	87	11.80%	62.72±6.73	1568.02±230.033



The vertical grey lines are separated 10 generations apart.

# Mike's Variety 1113-E

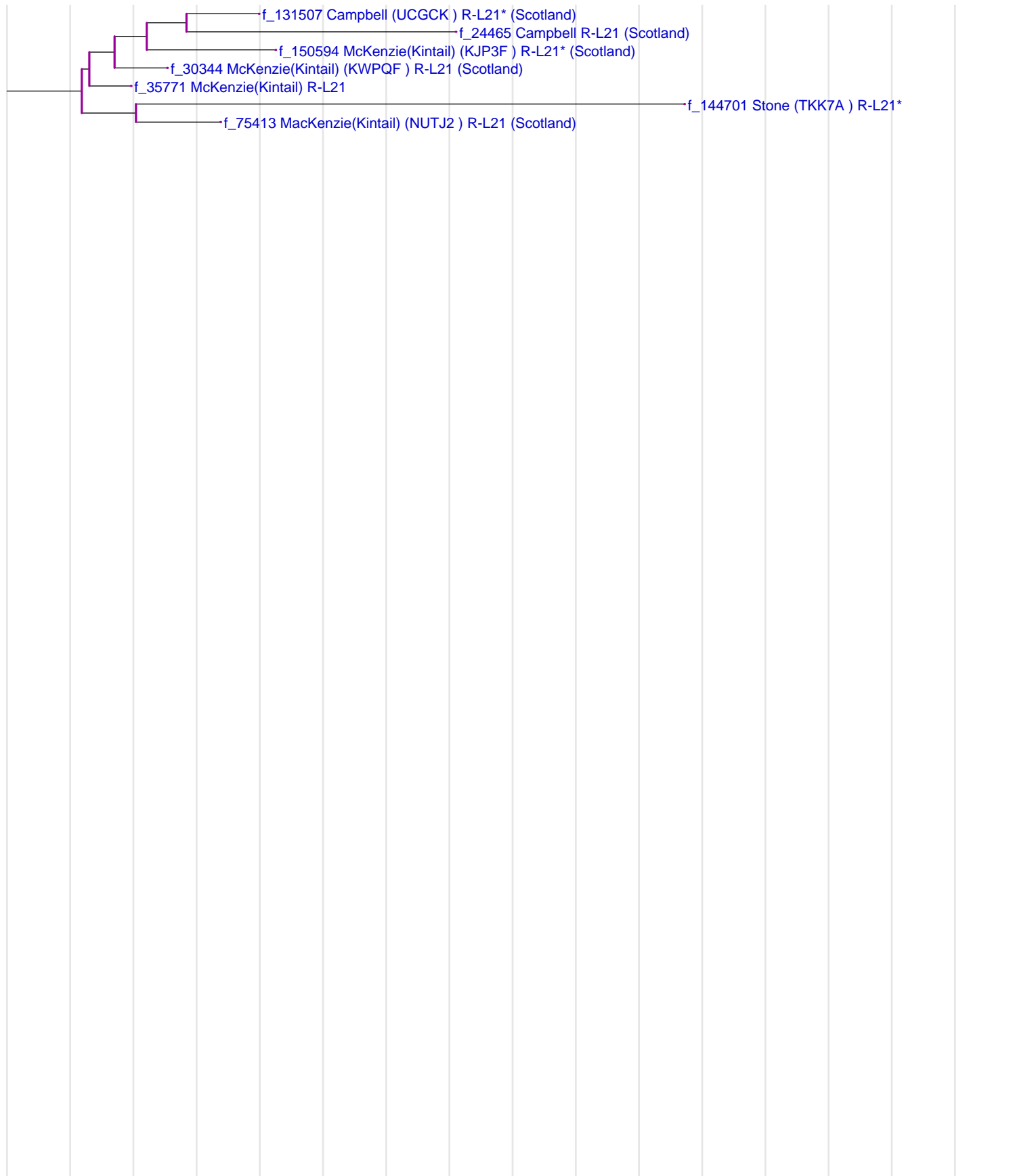
This is the modal haplotype for Mike's Variety 1113-E. The coloration is with respect to the modal haplotype of the full tree.

13 24 14 11 11 14 12 12 12 13 13 29 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

## 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.

# R-L159.2

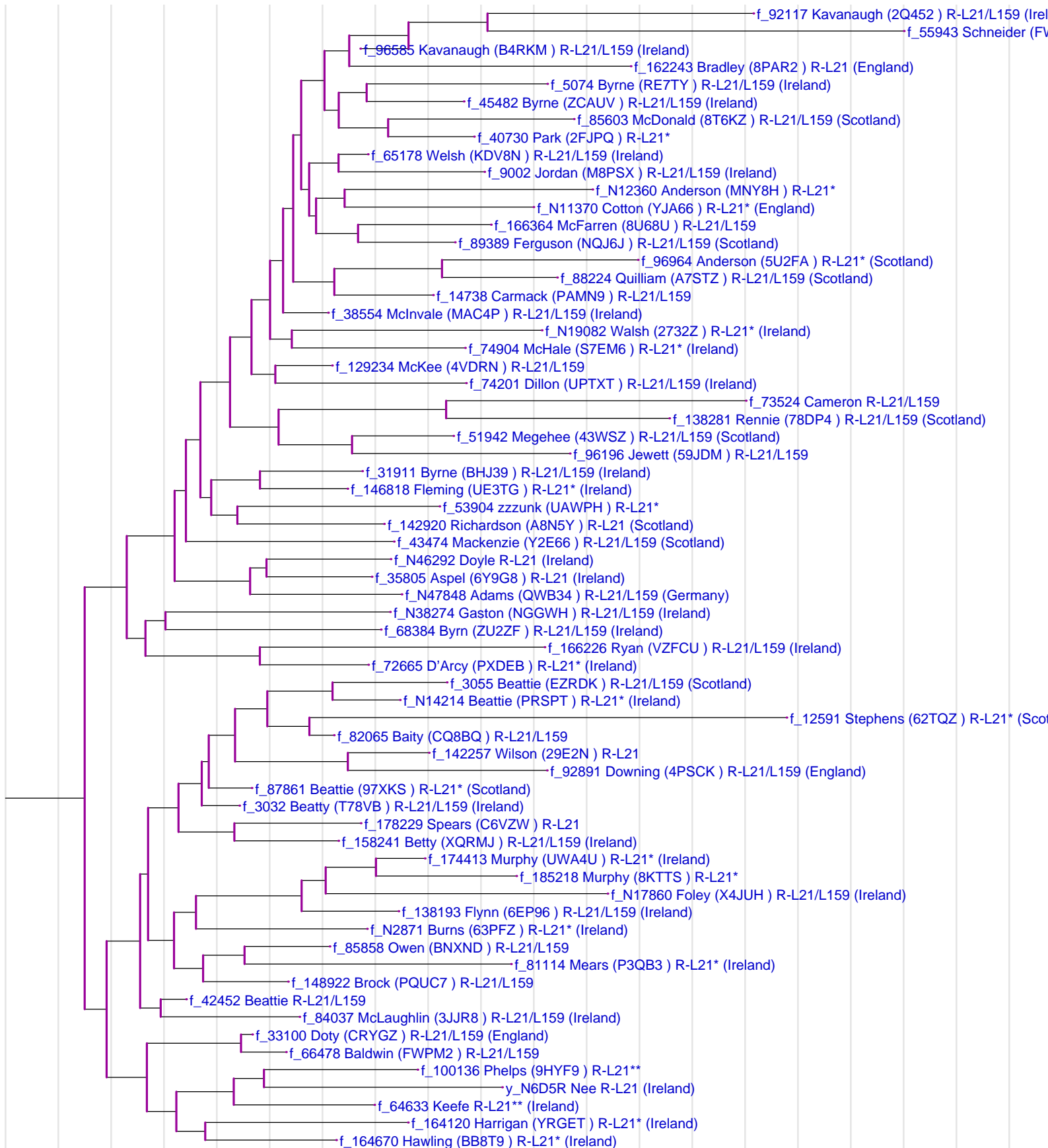
This is the modal haplotype for R-L159.2. The coloration is with respect to the modal haplotype of the full tree.

13 24 14 11 11 14 12 12 12 14 13 30 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 8 10 10 12 23 23 17 10 12 12 15 8 12 22 20 14 12 11 13 11 11 12 12

## Age Analysis

Total number of members	Total number of markers	Total number of mutations	Mutation fraction	Age estimate (in generations)	Age estimate (in years)
65	4355	473	10.86%	57.42±5.81	1435.51±204.304

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.

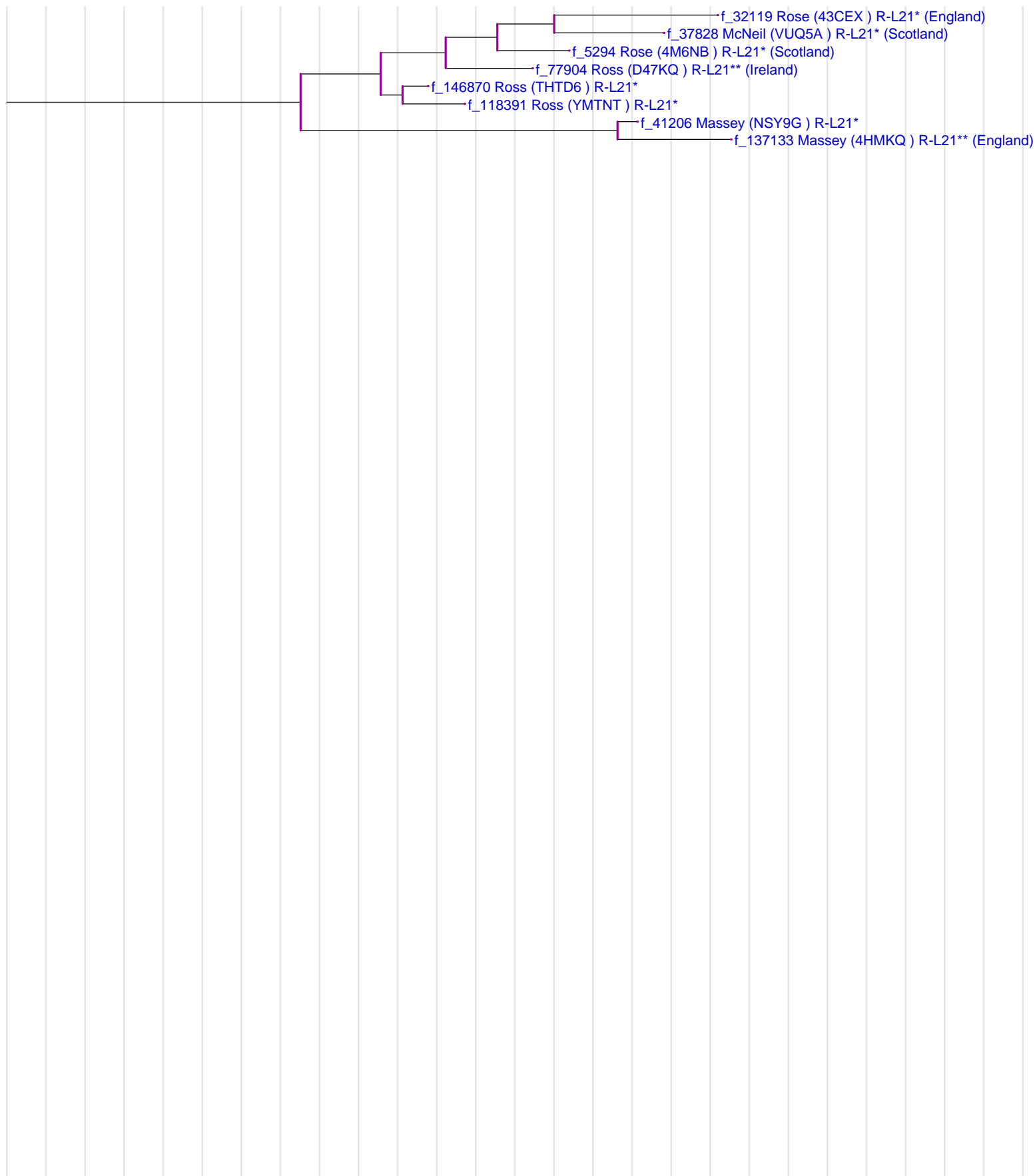
# Mike's Variety 1113-C-2(-R,-M)

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.

14 25 14 11 11 14 12 12 12 14 13 30 16 9 9 11 11 25 15 19 32 15 15 17 17 11 11 19 23 15 15 19 18 38 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

## 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	67	12.50%	66.66±7.33	1666.52±247.781



The vertical grey lines are separated 10 generations apart.

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

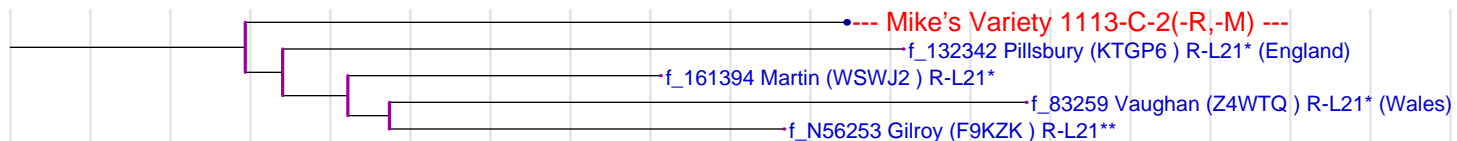
This is the modal haplotype for Mike's Variety 1113-(J,H,C-2(-R,-M)). The coloration is with respect to the modal haplotype of the full tree.

14 25 14 11 11 14 12 12 12 14 13 30 16 9 9 11 11 25 15 19 32 15 15 17 17 11 11 19 23 15 15 19 18 38 38 12 12 11 9 15 16 8 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

## 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	148	18.41%	101.34±10.86	2533.52±371.343

Note: Pillsbury, Martin, Vaughan and Gilroy are either 1113-J or 1113-H.



The vertical grey lines are separated 10 generations apart.



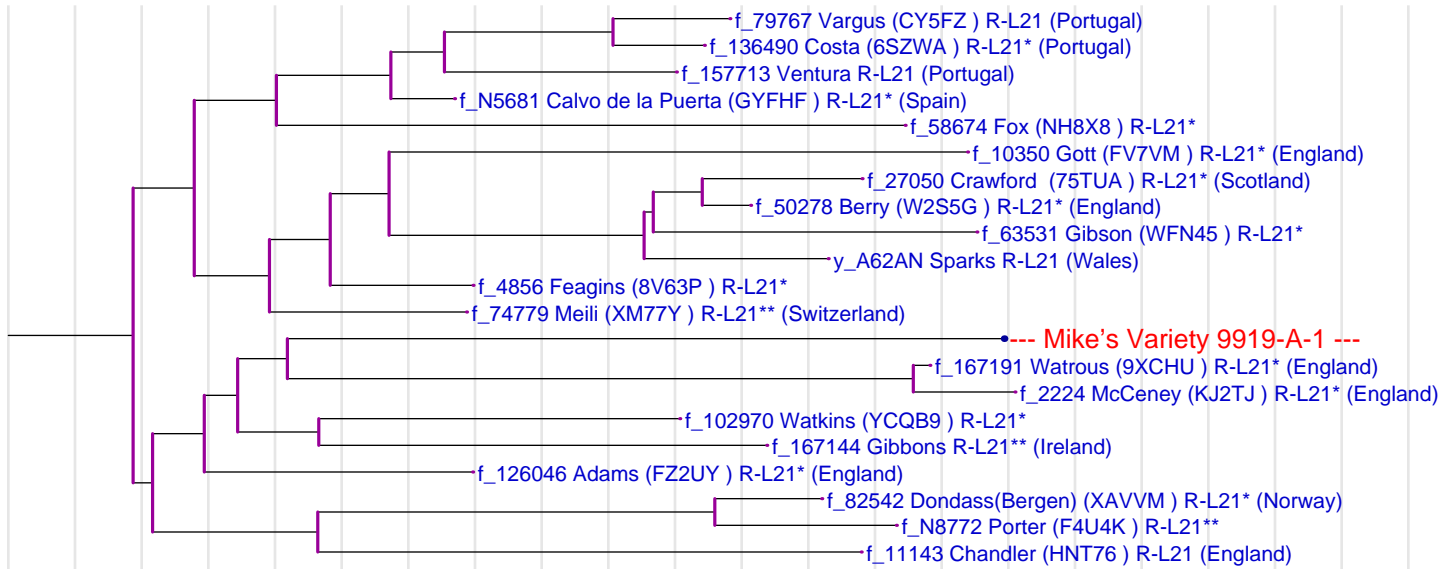
# Mike's Variety 9919-A/B

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.

13 24 14 11 11 14 12 12 12 13 13 29 16 9 9 11 11 25 15 19 30 15 15 17 17 11 11 19 15 15 17 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 12 12 12

## Age Analysis

Total number of members	Total number of markers	Total number of mutations	Mutation fraction	Age estimate (in generations)	Age estimate (in years)
27	1809	394	21.78%	122.15±12.62	3053.74±439.142



The vertical grey lines are separated 10 generations apart.

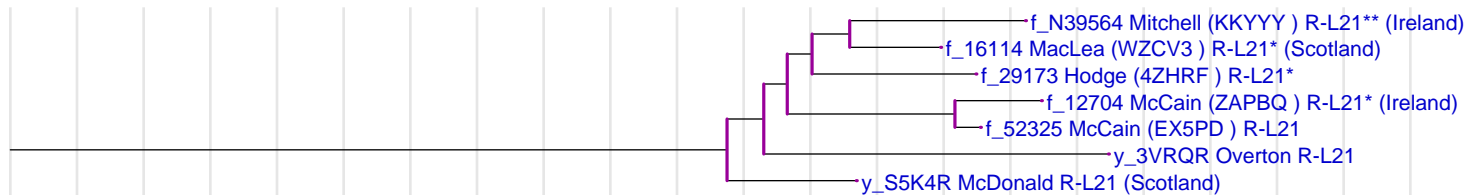
# Mike's Variety 9919-A-1

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.

13 24 14 11 11 14 12 12 12 13 13 29 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

## 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.

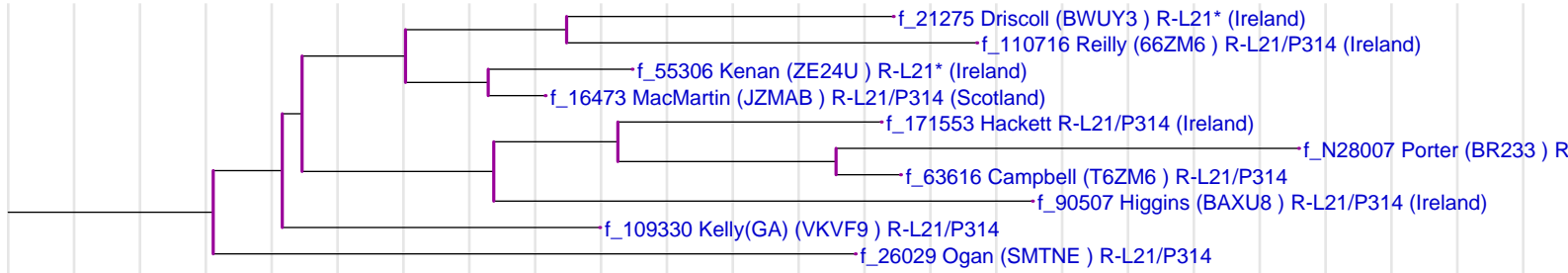
# R-P314.2

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

13 22 14 11 11 14 12 13 13 13 13 28 17 9 10 11 11 26 15 18 29 15 15 16 17 10 11 19 23 16 15 17 18 37 37 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

## 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	103	15.37%	83.25±9.02	2081.31±306.813



The vertical grey lines are separated 10 generations apart.

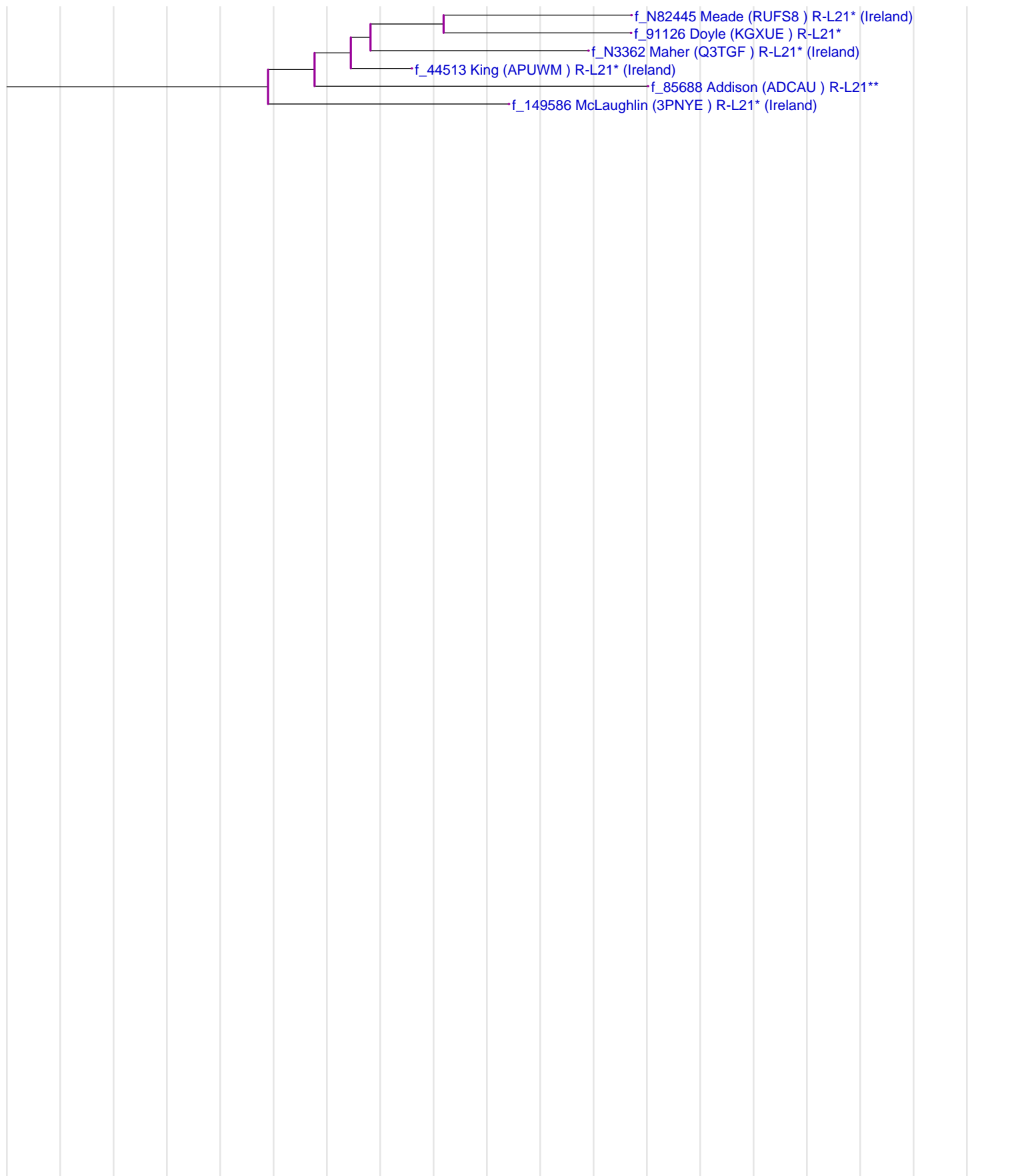
# Mike's Variety 590917

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

13 24 14 11 11 14 12 12 12 13 13 30 16 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

## 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.

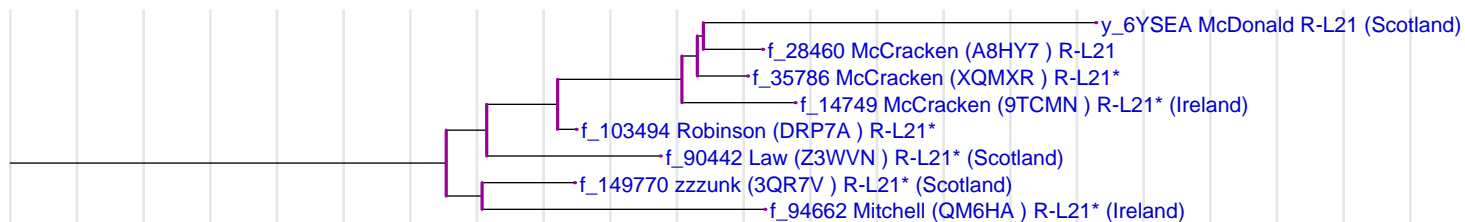
# Mike's Variety 1416

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

13 24 14 11 11 14 12 12 12 13 15 29 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

## 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

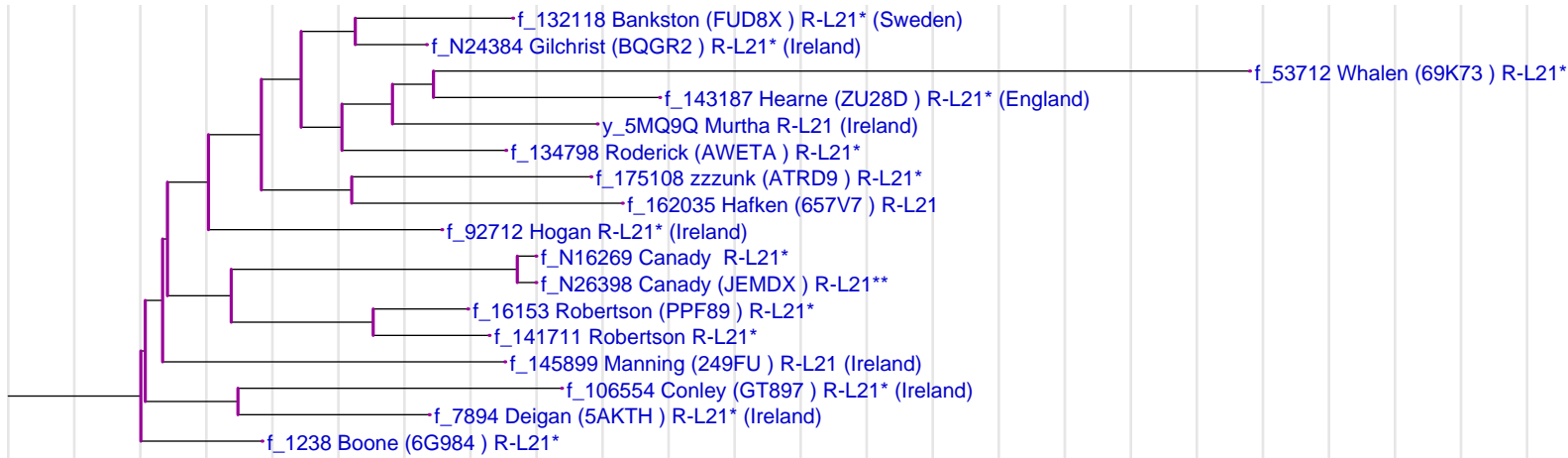
This is the modal haplotype for Mike's Variety 1117. The coloration is with respect to the modal haplotype of the full tree.

13 24 14 11 11 14 12 12 13 13 13 29 18 9 10 11 11 25 15 19 30 14 14 16 17 11 11 19 23 16 15 18 16 37 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

## 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	137	12.03%	63.98±6.71	1599.6±231.73

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.

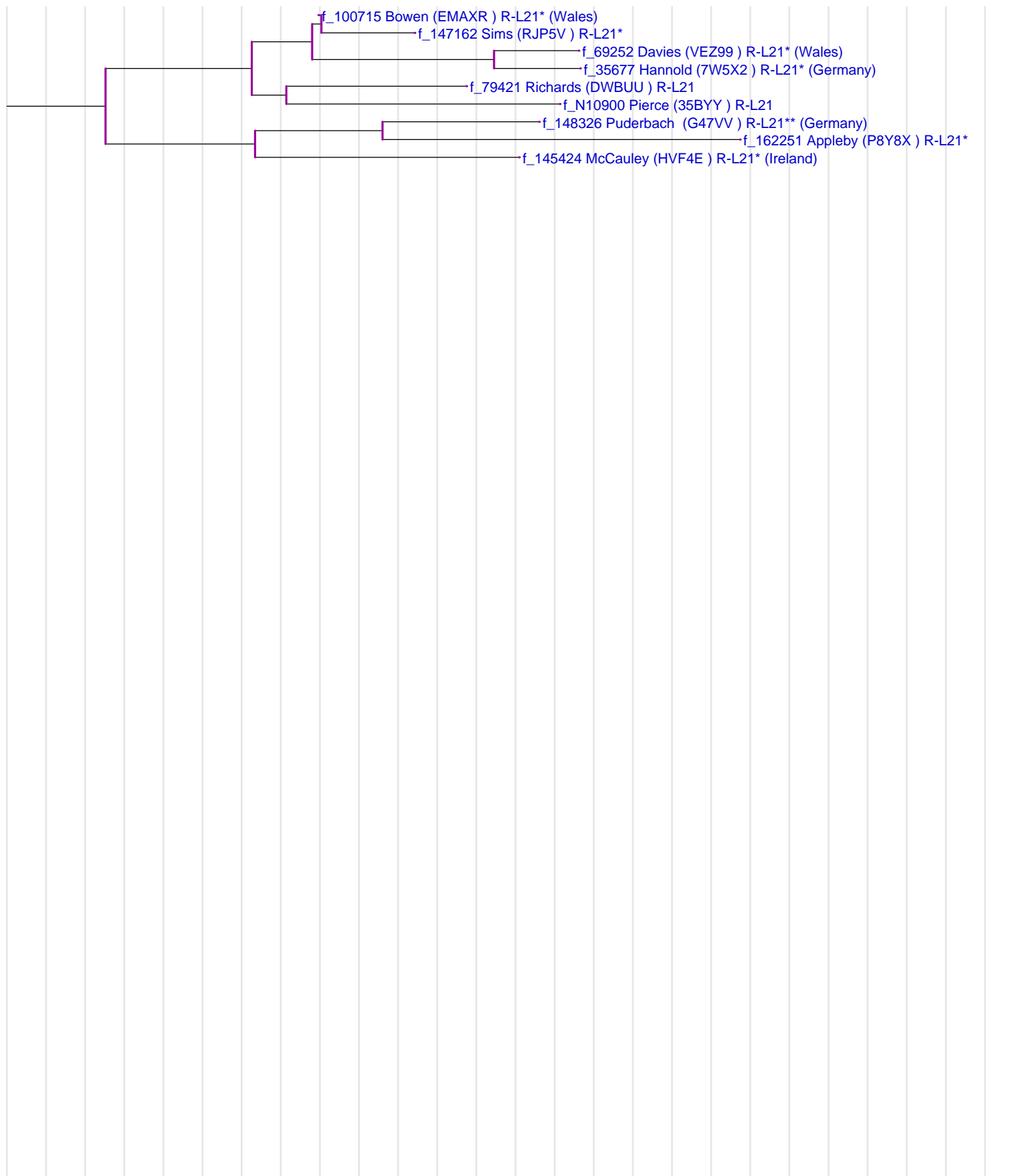
# Mike's Variety 1211

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

13 24 14 11 12 14 12 12 13 13 13 29 17 9 10 11 11 25 15 19 30 15 15 15 17 11 11 19 23 17 14 18 16 35 37 12 12 12 9 15 16 8 10 10 8 10 11 12 23 24 16 10 12 12 14 8 12 22 20 13 12 11 13 11 11 12 12

## 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	109	18.08%	99.34±10.87	2483.38±368.107



The vertical grey lines are separated 10 generations apart.

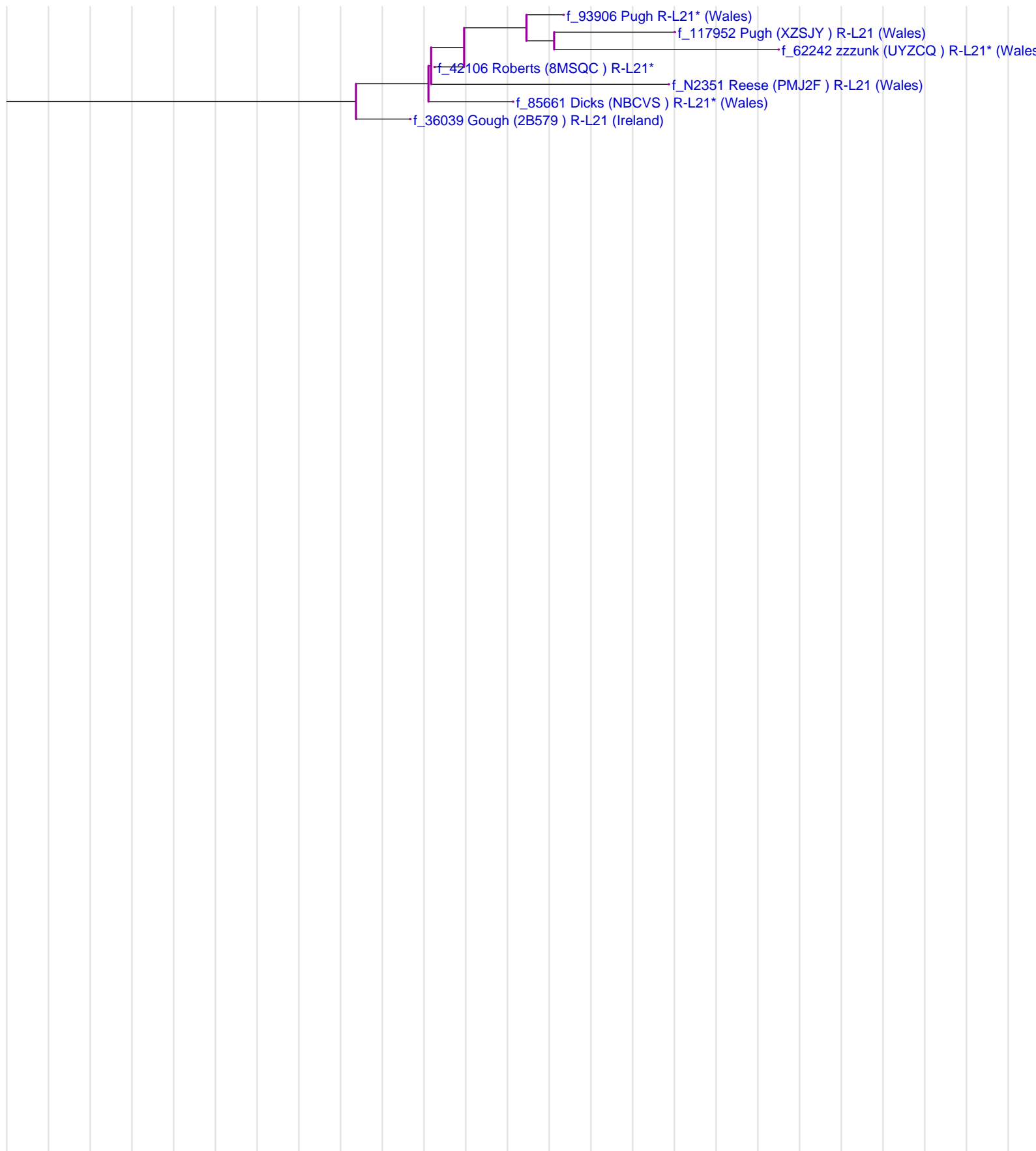
# Mike's Variety 1830-W1(-A)

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.

13 24 14 11 12 14 12 12 12 13 13 29 17 9 10 11 11 25 15 17 30 15 15 17 17 11 11 19 23 14 15 16 17 35 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

## 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	31	6.61%	34.18±3.79	854.455±127.527



The vertical grey lines are separated 10 generations apart.



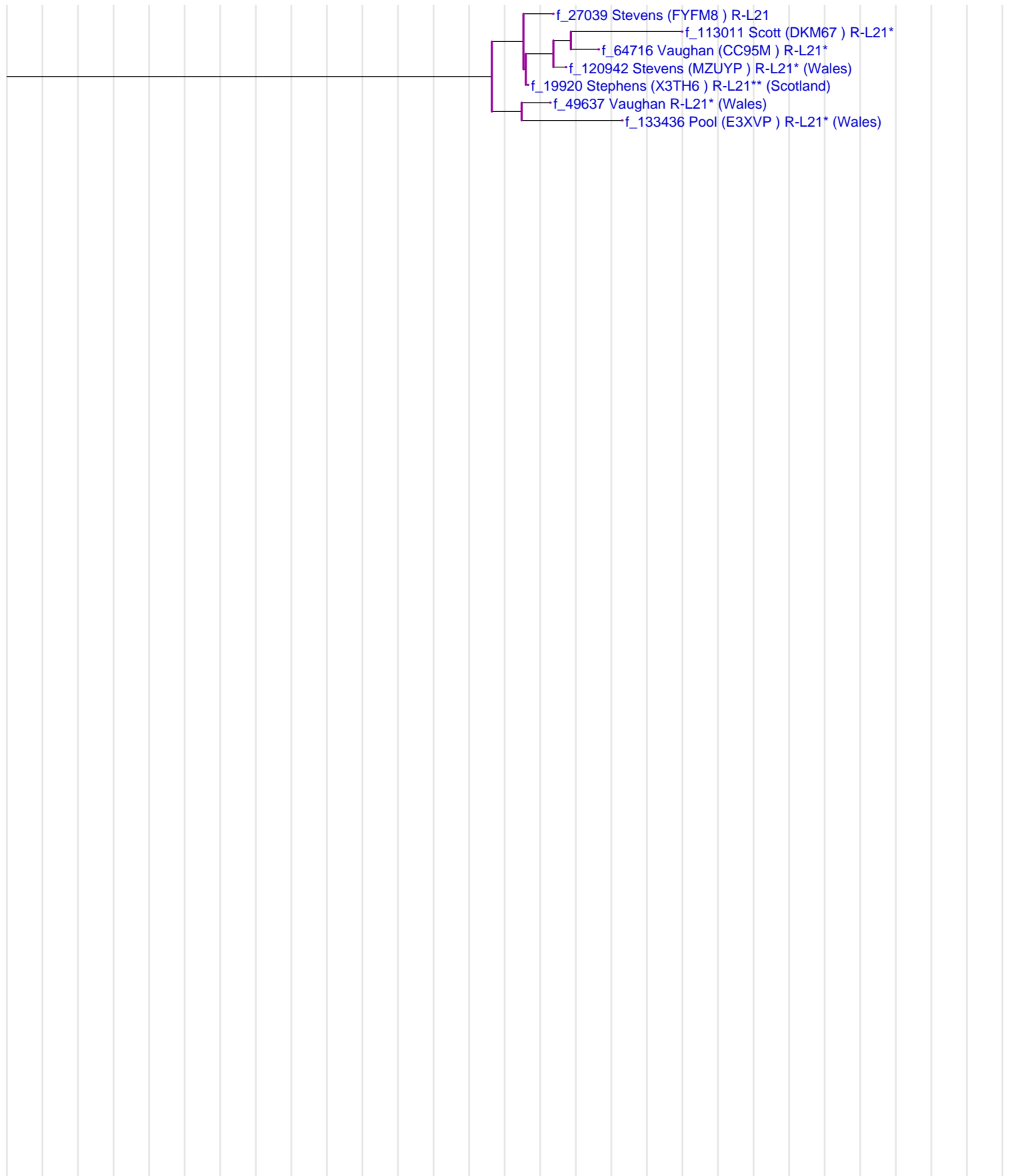
# Mike's Variety 1416-B-WSW

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.

13 24 14 11 11 16 12 12 12 13 15 30 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

## 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.

13 25 14 10 15 12 12 11 13 13 29 15 9 10 11 11 25 15 19 30 15 15 16 17 10 11 19 23 15 15 18 16 37 37 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

## 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	16	5.97%	30.77±3.64	769.224±119.062



The vertical grey lines are separated 10 generations apart.

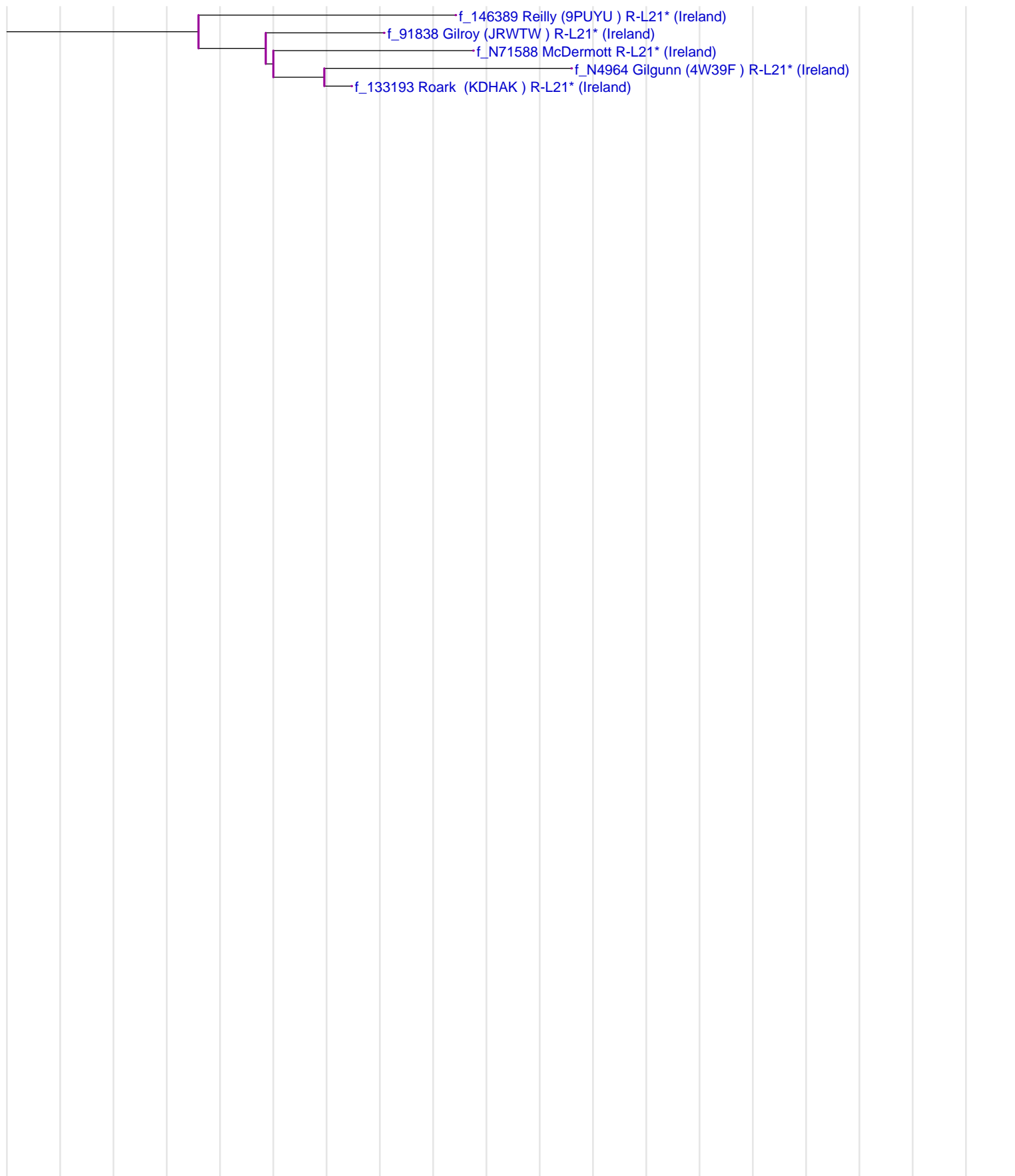
# Mike's Variety 1199

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

13 24 14 11 11 14 12 12 12 13 13 30 18 9 9 11 11 25 15 19 27 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

## 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	28	8.36%	43.61±5.02	1090.31±166.214



The vertical grey lines are separated 10 generations apart.

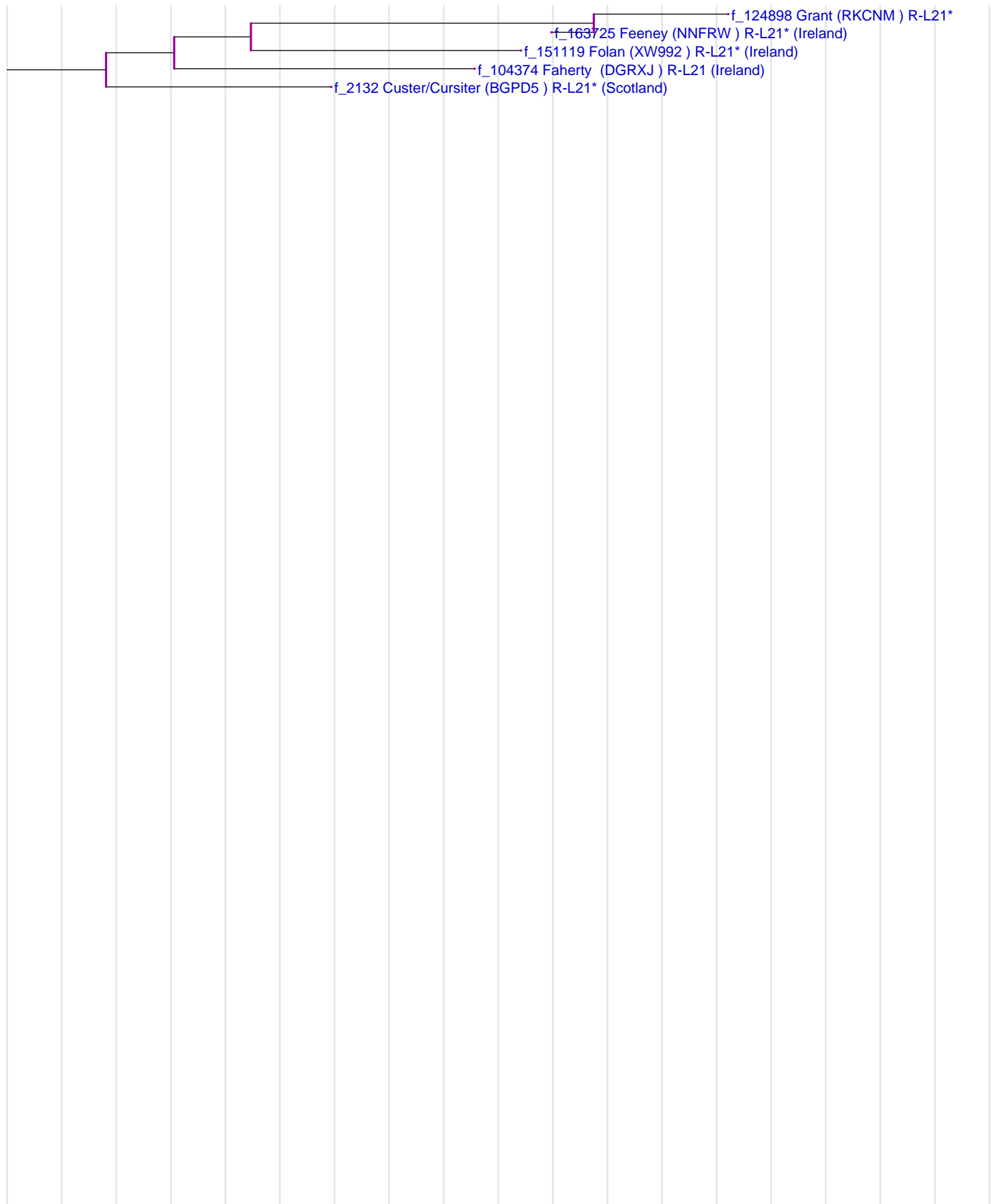
# Mike's Variety 2399-Am

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

13 23 14 11 10 11 12 12 12 13 13 30 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

## 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.

13 24 14 10 11 14 12 12 13 13 29 17 9 10 11 11 25 15 19 31 15 15 15 17 10 11 19 23 17 15 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

## 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	44	10.95%	57.89±6.54	1447.28±218.378



The vertical grey lines are separated 10 generations apart.

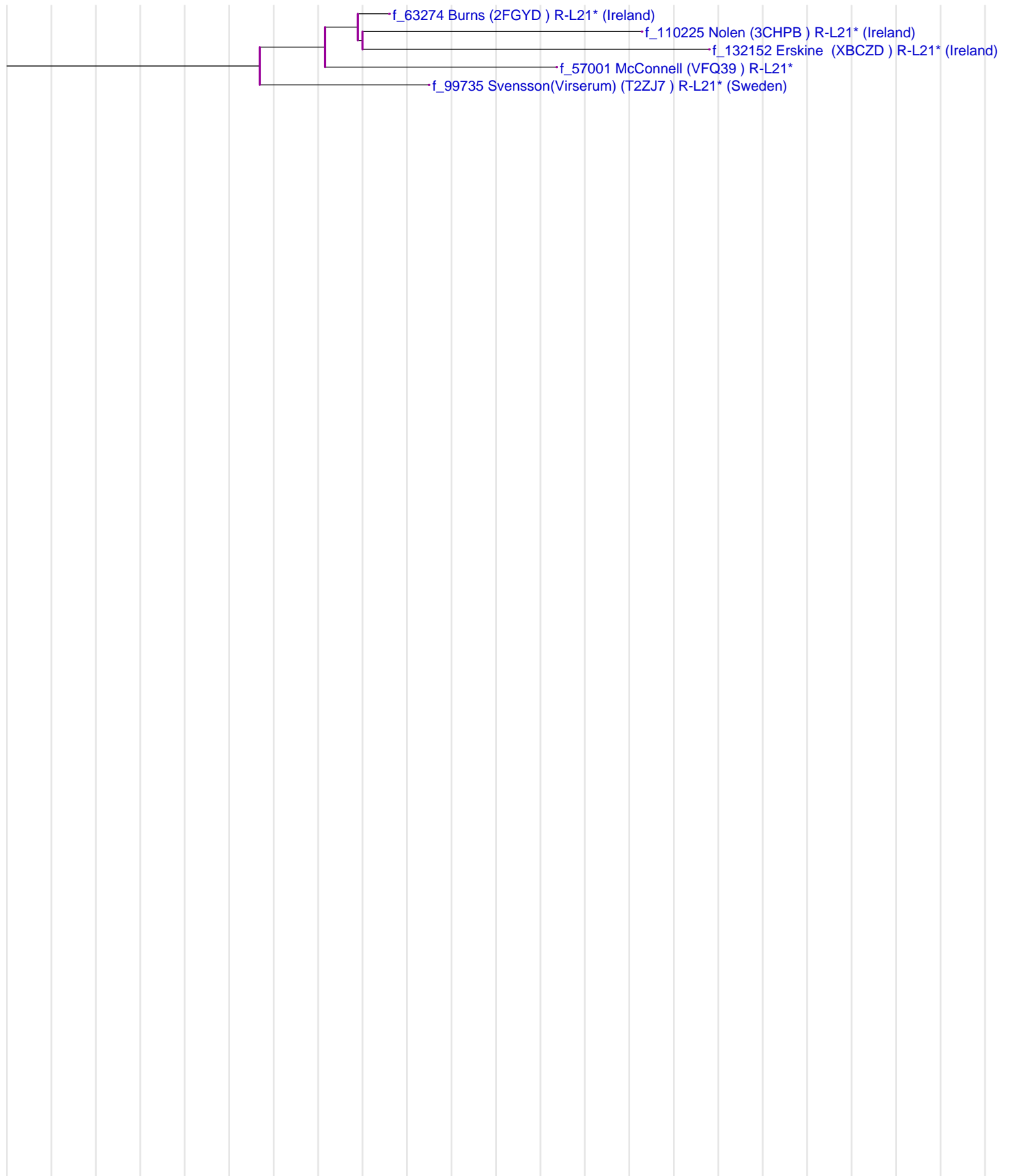
# Mike's Variety V1410

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

14 24 14 11 11 14 12 12 12 13 13 29 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

## 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	34	10.15%	53.46±6.16	1336.42±203.976



The vertical grey lines are separated 10 generations apart.

# Cluster Modals

## Full Tree (R-L21)

13 24 14 11 11 14 12 12 12 13 13 29 17 9 10 11 11 25 15 19 30 15 15 17 17 11 11 19 23 16 15 18 17 37 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

Age: 3506.85±496.112 years

R-M222  
13 25 14 11 11 13 12 12 12 13 14 29 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

Age: 1534.55±217.324 years

Little Scottish Cluster  
13 24 14 10 11 14 12 12 12 13 13 29 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

Age: 1171.84±169.889 years

Scots Cluster  
13 24 14 10 11 14 12 12 12 13 13 30 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

Age: 1463.2±207.745 years

Irish Type III  
13 24 14 11 11 14 12 12 12 11 13 13 29 17 8 9 11 11 25 15 19 29 13 13 15 17 11 11 19 23 15 15 18 17 36 39 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

Age: 1355.25±193.093 years

R-L144  
13 24 14 10 11 14 12 12 12 13 13 29 17 9 10 11 11 25 15 19 30 15 15 16 17 11 11 19 23 16 14 17 18 36 40 12 12 11 10 15 16 8 10 10 8 10 10 12 23 23 16 10 12 12 15 8 12 22 20 12 10 11 13 11 11 12 12

Age: 835.466±125.74 years

Clan Colla  
13 24 14 11 11 15 12 12 13 13 13 29 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 12 22 23 16 10 12 12 16 8 12 22 20 13 12 11 13 11 11 12 12

Age: 1537.05±219.522 years

Irish Type IV  
13 24 14 10 12 15 13 12 12 13 13 29 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

Age: 1302.59±190.972 years

Royal Stewart  
13 24 14 11 11 14 12 12 12 13 13 29 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

Age: 572.517±87.0531 years

Unknown  
13 24 14 11 11 14 12 12 12 13 13 29 17 9 10 11 11 25 15 19 29 15 15 17 17 11 11 19 23 15 14 17 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

Age: 808.928±123.146 years

Mike's Variety 2410  
13 24 14 11 11 15 12 12 12 13 13 29 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

Age: 572.517±87.0531 years

Mike's Variety 1511-A-T2  
13 24 14 10 11 15 12 12 11 13 13 29 17 9 10 11 11 24 15 19 29 15 15 17 17 11 11 19 23 15 15 18 17 36 37 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

Age: 1598.91±228.738 years

R-L193  
13 24 14 11 11 14 12 12 12 13 13 29 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 12

Age: 1093.44±156.234 years

Mike's Variety 1113-A-2(-B,-M)  
13 25 14 11 11 14 12 12 12 13 13 29 16 9 10 11 11 25 15 19 26 18 29 15 15 17 17 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 12

Age: 968.975±142.429 years

Mike's Variety 1113-B-2  
13 24 15 11 11 14 12 12 12 13 13 29 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

Age: 1058.75±156.307 years

Mike's Variety 1113-D-2  
13 23 14 10 11 14 12 12 11 13 13 28 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

Age: 1568.02±230.033 years

Mike's Variety 1113-E  
13 24 14 11 11 14 12 12 12 13 13 29 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

Age: 797.572±119.012 years

R-L159.2  
13 24 14 11 11 14 12 12 12 14 13 30 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 8 10 10 12 23 23 17 10 12 12 15 8 12 22 20 14 12 11 13 11 11 12 12

Age: 1435.51±204.304 years

Mike's Variety 1113-C-2(-R,-M)  
14 25 14 11 11 14 12 12 12 14 13 30 16 9 9 11 11 25 15 19 32 15 15 17 17 11 11 19 23 15 15 19 18 38 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

Age: 1666.52±247.781 years

Mike's Variety 1113-(J,H,C-2(-R,-M))  
14 25 14 11 11 14 12 12 12 14 13 30 16 9 9 11 11 25 15 19 32 15 15 17 17 11 11 19 23 15 15 19 18 38 38 12 12 11 9 15 16 8 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

Age: 2533.52±371.343 years

Mike's Variety 9919-A/B  
13 24 14 11 11 14 12 12 12 13 13 29 16 9 9 11 11 25 15 19 30 15 15 17 17 11 11 19 24 15 15 17 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 12 12 12

Age: 3053.74±439.142 years

Mike's Variety 9919-A-1  
13 24 14 11 11 14 12 12 12 13 13 29 16 9 9 11 11 25 15 19 31 15 16 16 17 11 11 19 24 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

Age: 940.25±140.376 years

R-P314.2  
13 22 14 11 11 14 12 13 13 13 28 17 9 10 11 11 26 15 18 29 15 15 16 17 10 11 19 23 16 15 17 18 37 37 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

Age: 2081.31±306.813 years

Mike's Variety 590917  
13 24 14 11 11 14 12 12 12 13 13 30 16 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

Age: 1205.96±181.783 years

Mike's Variety 1416  
13 24 14 11 11 14 12 12 12 13 15 29 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

Age: 918.748±136.273 years

Mike's Variety 1117  
13 24 14 11 11 14 12 12 13 13 13 29 18 9 10 11 11 25 15 19 30 14 14 16 17 11 11 19 23 16 15 18 16 37 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

Age: 1599.6±231.73 years

Mike's Variety 1211  
13 24 14 11 12 14 12 12 13 13 13 29 17 9 10 11 11 25 15 19 30 15 15 15 17 11 11 19 23 17 14 18 16 35 37 12 12 12 9 15 16 8 10 10 8 10 11 12 23 24 16 10 12 12 14 8 12 22 20 13 12 11 13 11 11 12 12

Age: 2483.38±368.107 years

Mike's Variety 1830-W1(-A)  
13 24 14 11 12 14 12 12 12 13 13 29 17 9 10 11 11 25 15 17 30 15 15 17 17 11 11 19 23 14 15 16 17 35 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

Age: 854.455±127.527 years

Mike's Variety 1416-B-WSW  
13 24 14 11 11 16 12 12 12 13 15 30 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

Age: 489.129±72.9029 years

Mike's Variety 1515-Who  
13 25 14 10 15 12 12 11 13 13 29 15 9 10 11 11 25 15 19 30 15 15 16 17 10 11 19 23 15 15 18 16 37 37 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

Age: 769.224±119.062 years

Mike's Variety 1199  
13 24 14 11 11 14 12 12 12 13 13 30 18 9 9 11 11 25 15 19 27 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

Age: 1090.31±166.214 years

Mike's Variety 2399-Am  
13 23 14 11 10 11 12 12 12 13 13 30 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

Age: 1419.48±216.742 years

Mike's Variety 1121  
13 24 14 10 11 14 12 12 12 13 13 29 17 9 10 11 11 25 15 19 31 15 15 15 17 10 11 19 23 17 15 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

Age: 1447.28±218.378 years

Mike's Variety V1410  
14 24 14 11 11 14 12 12 12 13 13 29 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

Age: 1336.42±203.976 years

# Notes

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 2010-09-27 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.

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.