

# VIKING DNA



**Prof. Stephen Harding**  
**University of Nottingham**





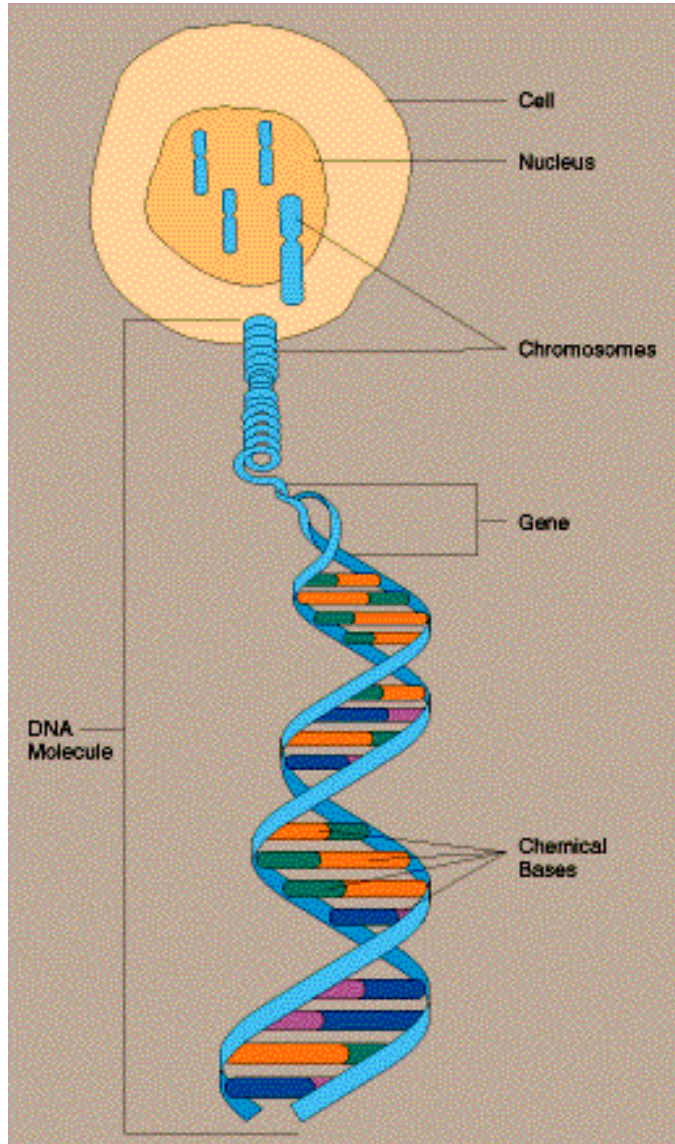


Human cell

nucleus



# DNA - it makes us what we are



## Chemicals:

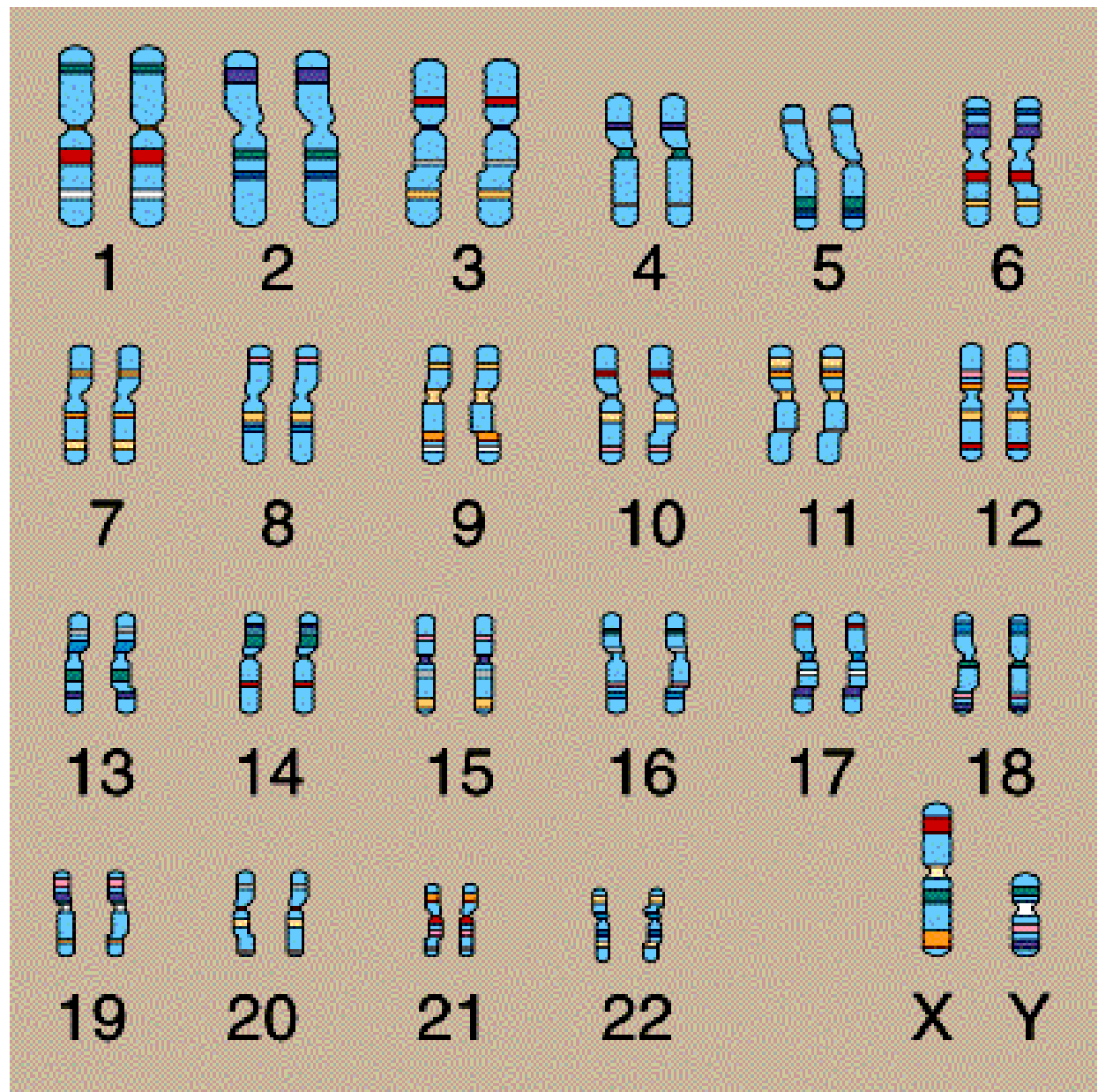
**adenine A**

**Thymine T**

**Cytosine C**

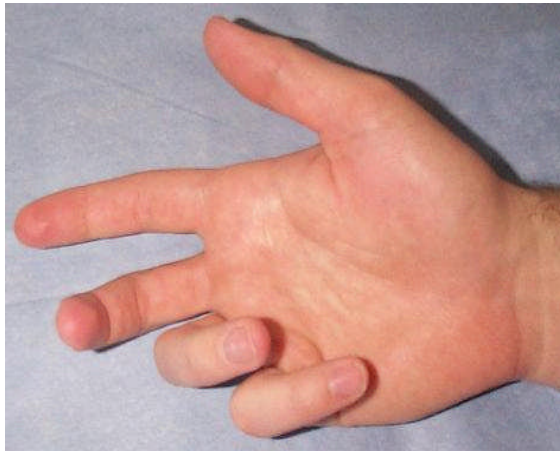
**Guanine G**

In a human cell  
nucleus there  
are 23 pairs of  
chromosomes

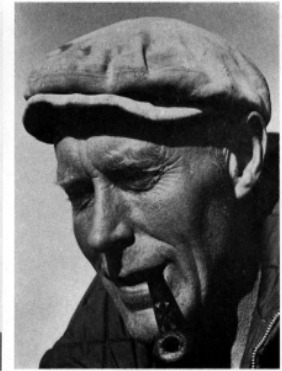




# Genetics of physical characteristics



1 A Dane from Jutland, whose facial features remind one irresistibly of his forerunner, Tollund man (1)



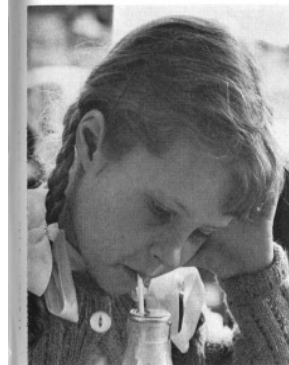
10 An Icelandic from Reykjavik

## LIVING EUROPEAN TYPES

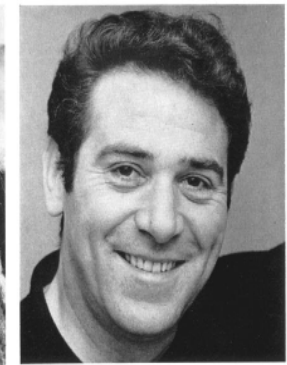
11 A Norwegian woman



12 Max von Sydow, Swedish film actor

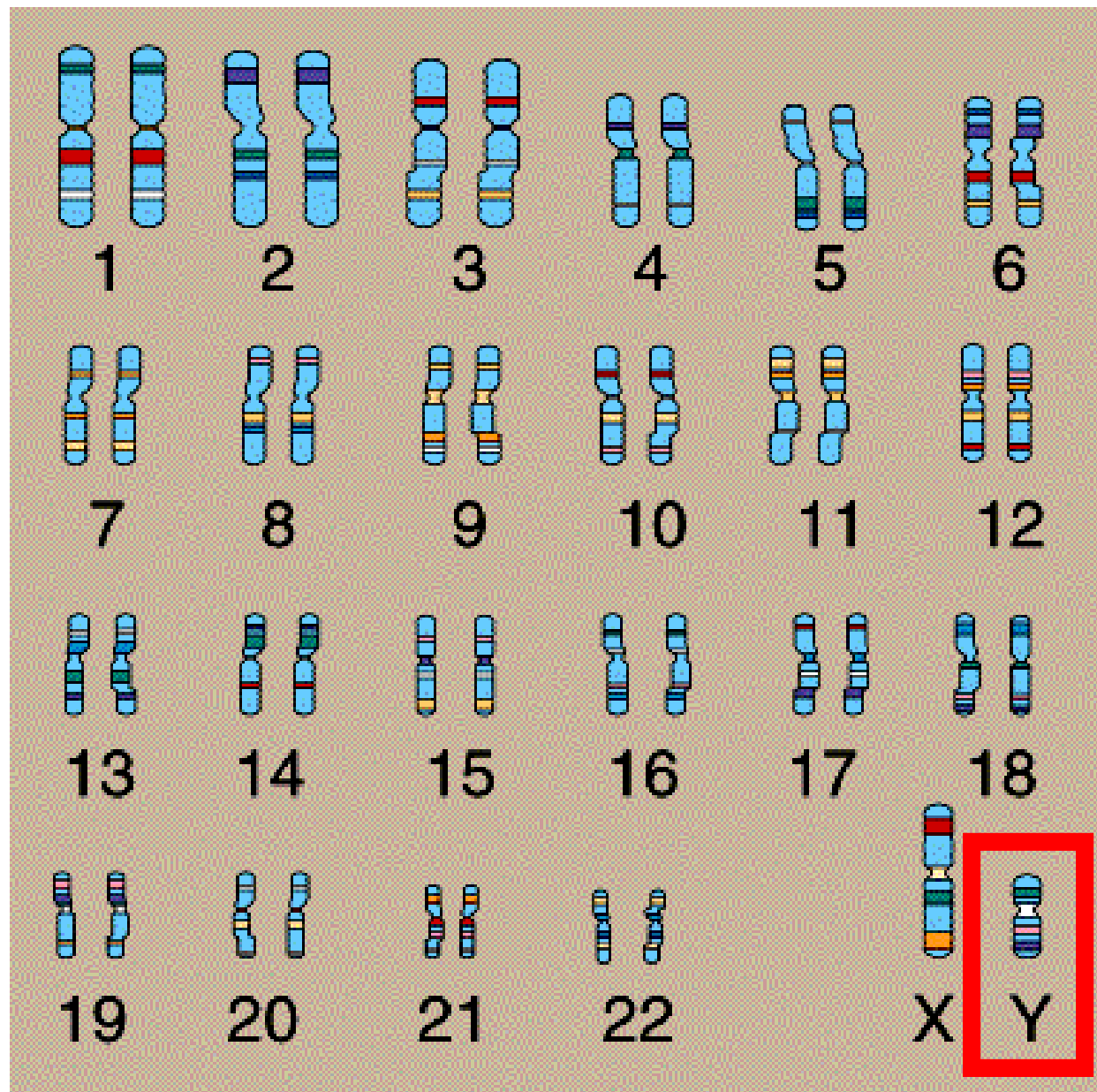


17 An English schoolgirl

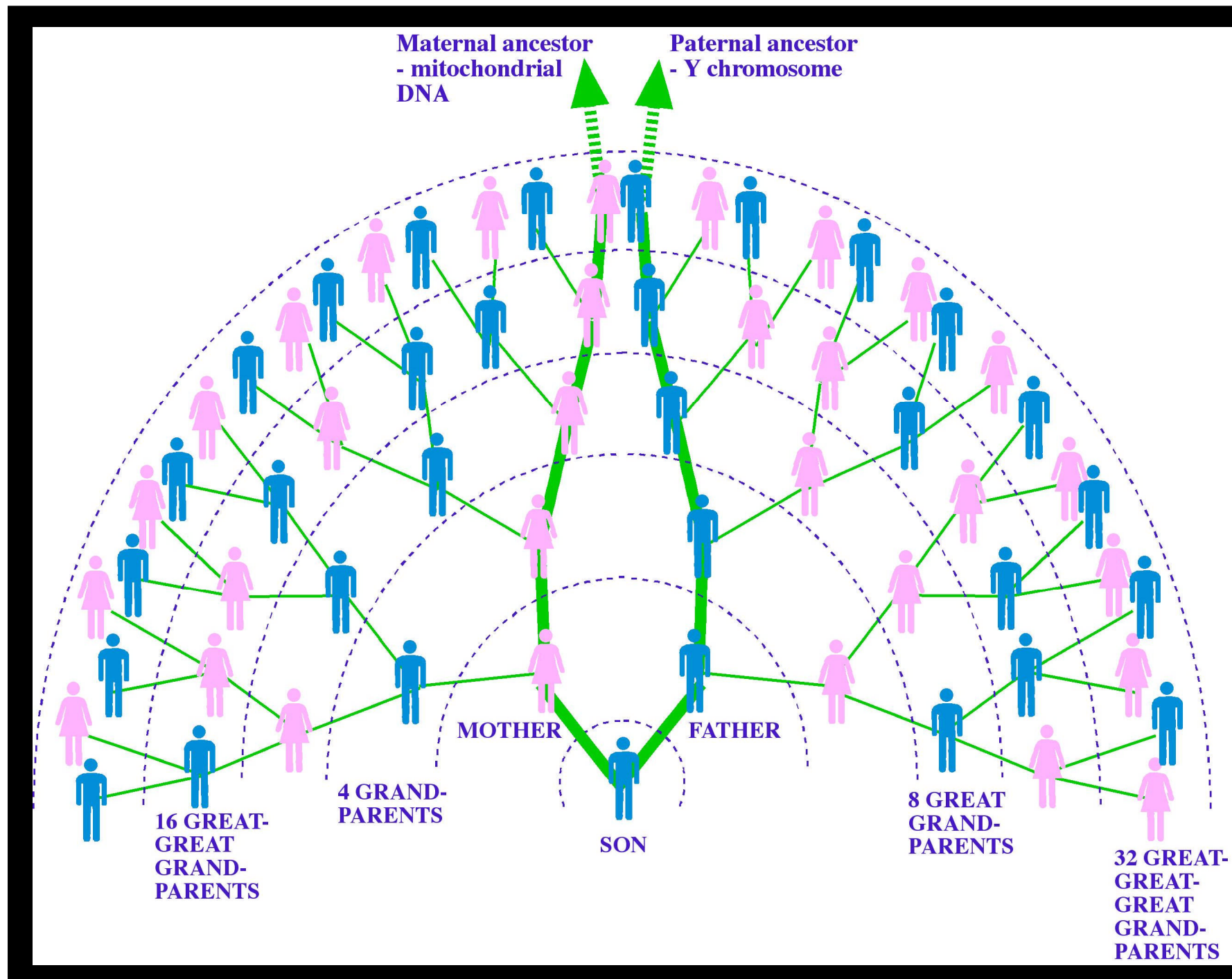


18 Ivor Emmanuel, Welsh singer

In a human cell nucleus there are 23 pairs of chromosomes



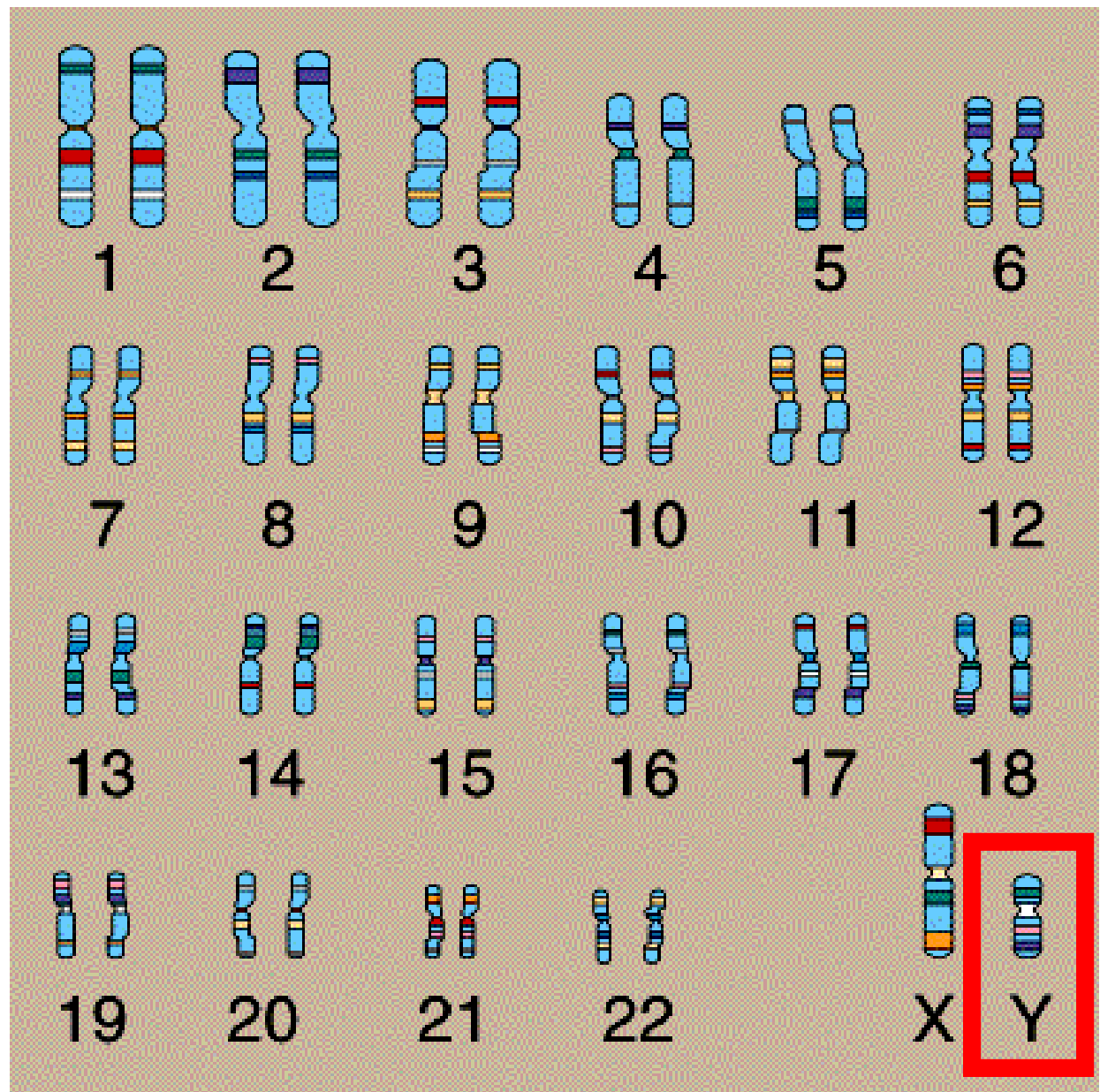








In a human cell nucleus there are 23 pairs of chromosomes



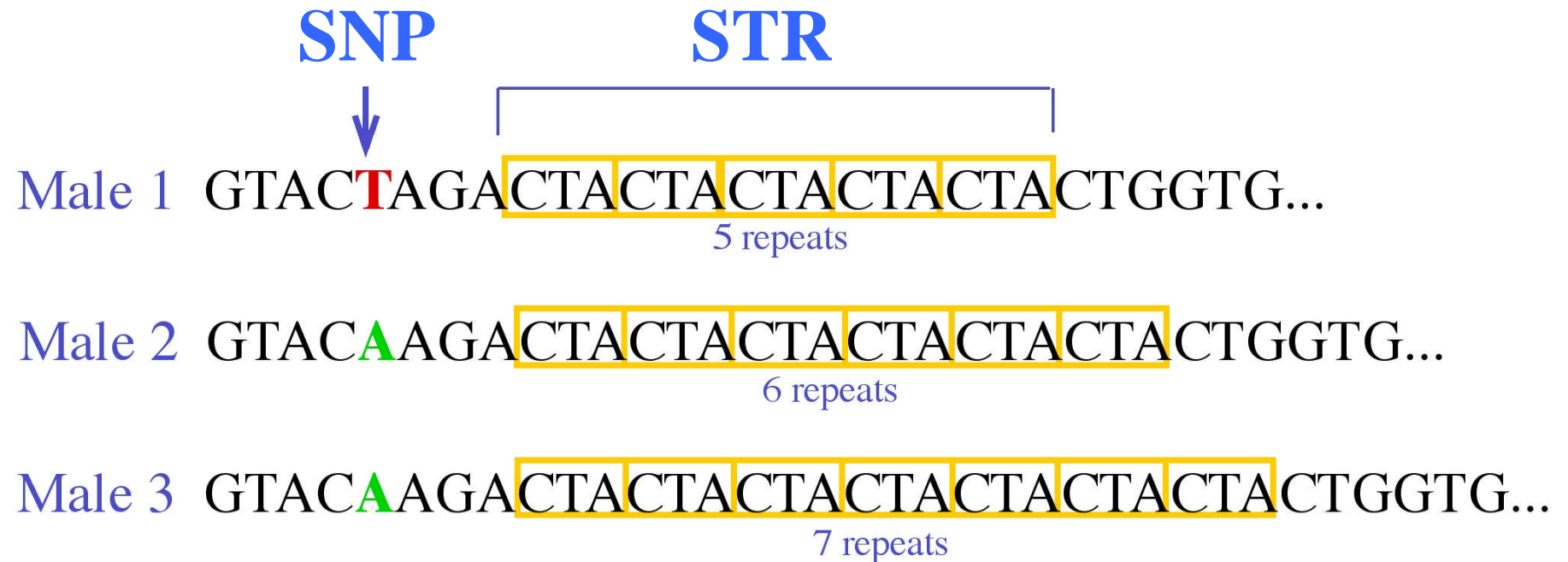


Male 1 GTACTAGACTACTACTACTACTACTGCGTG...  
5 repeats

Male 2 GTACAGACTACTACTACTACTACTACTGCGTG...  
6 repeats

Male 3 GTACAGACTACTACTACTACTACTACTACTGCGTG...  
7 repeats

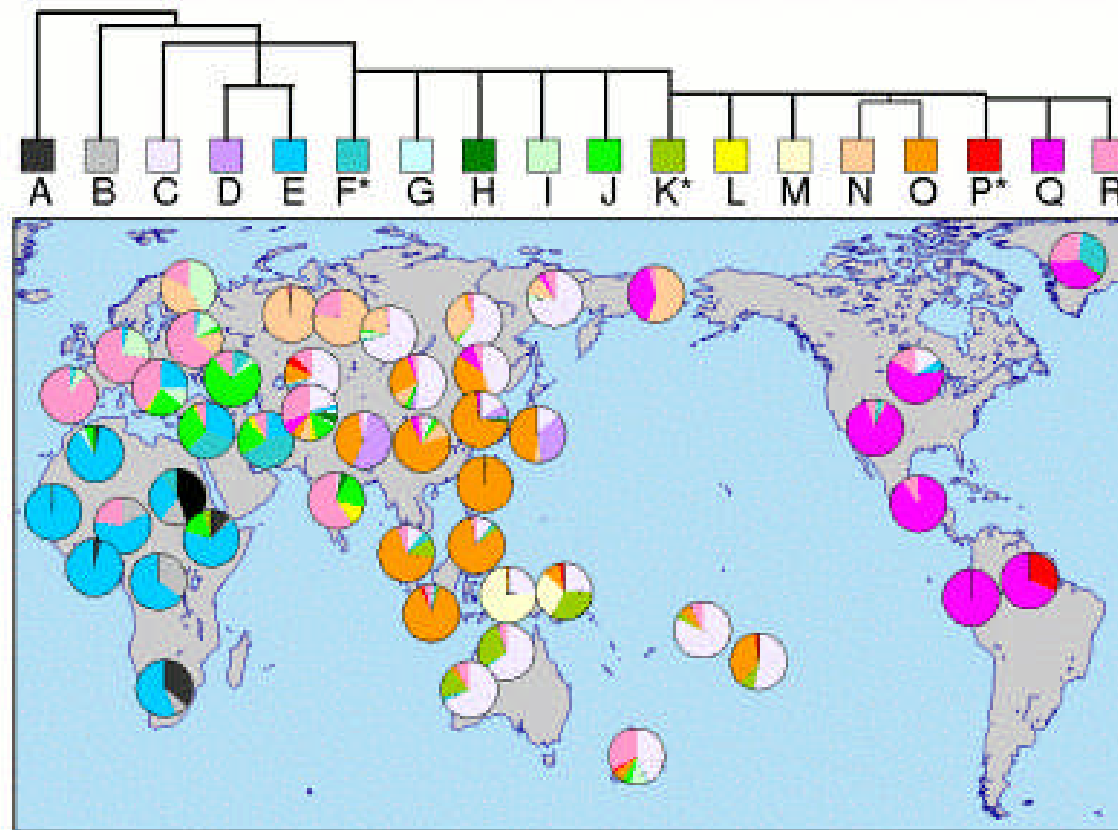
## 2 important jargon acronyms .....



**SNP: Single Nucleotide Polymorphism: Haplogroup**

**STR: Short Tandem Repeat: Haplotype**

## Y-chromosome haplogroups



Courtesy of the Sanger Institute



## Results from a man's y-chromosome test

### HAPLOGROUP

☐ A ☐ BC ☐ DE ☐ F\* ☐ G ☐ H ☒ I ☐ J ☐ K\* ☐ R1\* ☐ R1a ☐ R1b

### HAPLOTYPE

DYS436   
DYS437   
DYS438   
DYS434   
DYS435   
DYS439

DYS391   
DYS390   
DYS393   
DYS392   
DYS388   
DYS19

DYS389I   
DYS389II   
461   
462   
460

# Individual Viking ancestry?





## Results from a man's y-chromosome test

### HAPLOGROUP

☐ A ☐ BC ☐ DE ☐ F\* ☐ G ☐ H ☒ I ☐ J ☐ K\* ☐ R1\* ☐ R1a ☐ R1b

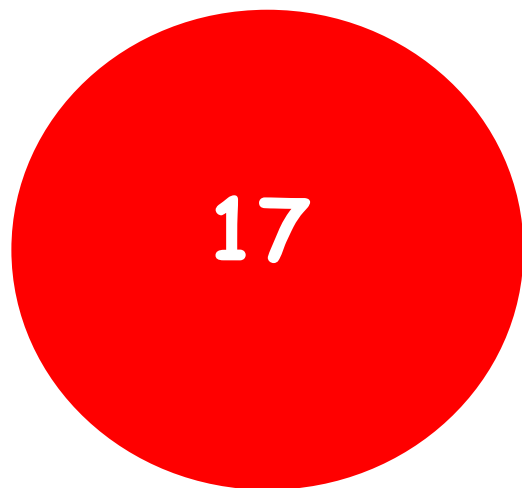
### HAPLOTYPE

DYS436   
DYS437   
DYS438   
DYS434   
DYS435   
DYS439

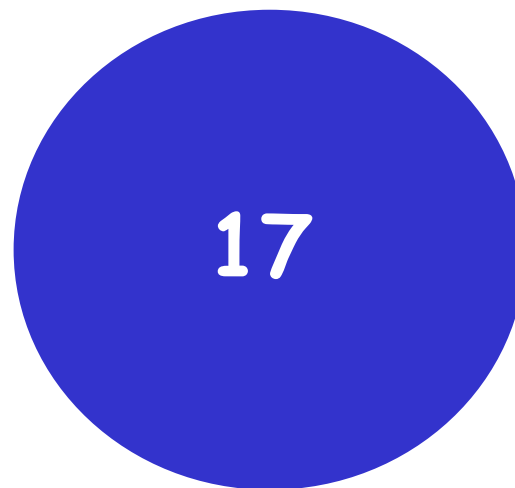
DYS391   
DYS390   
DYS393   
DYS392   
DYS388   
DYS19

DYS389I   
DYS389II   
461   
462   
460

***HIT***

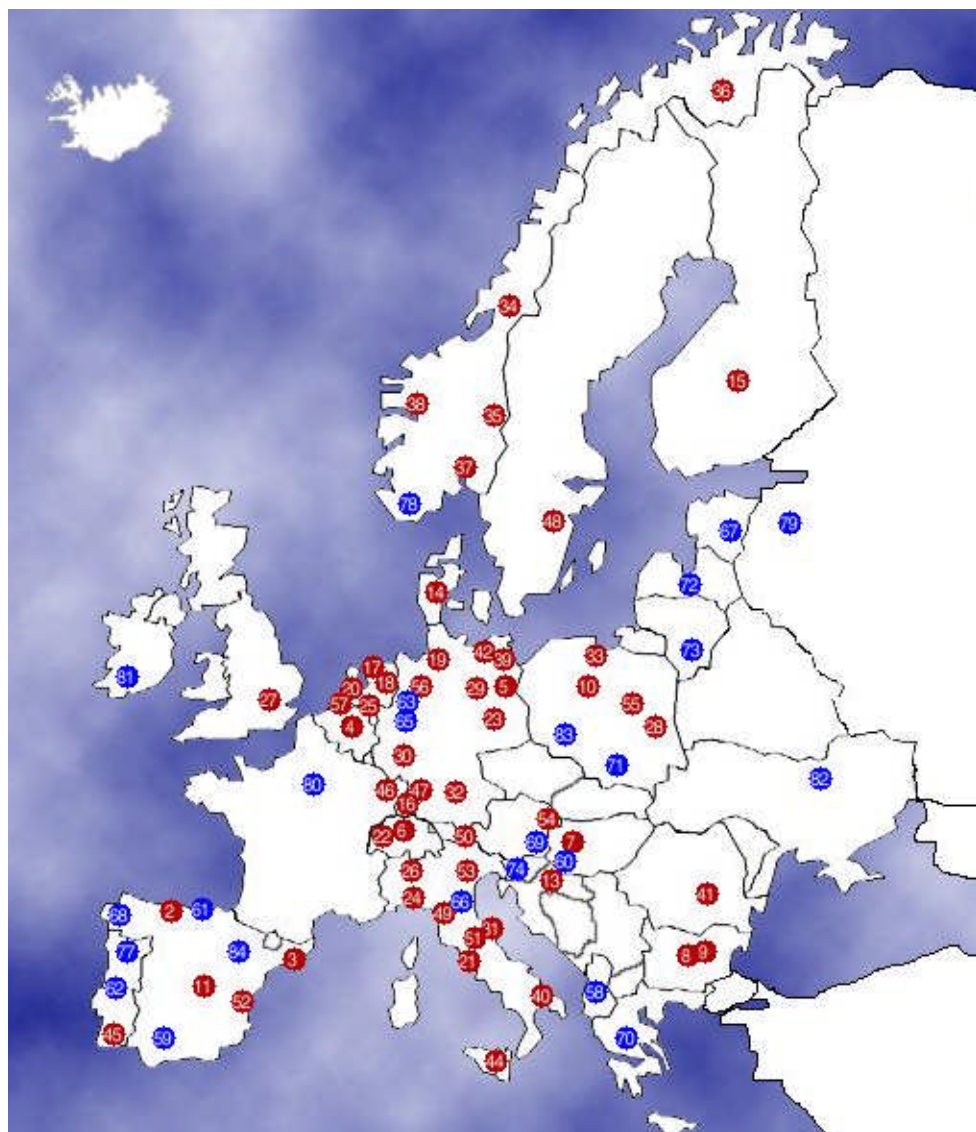


***MISS***



# Peter Forshaw (Irby)

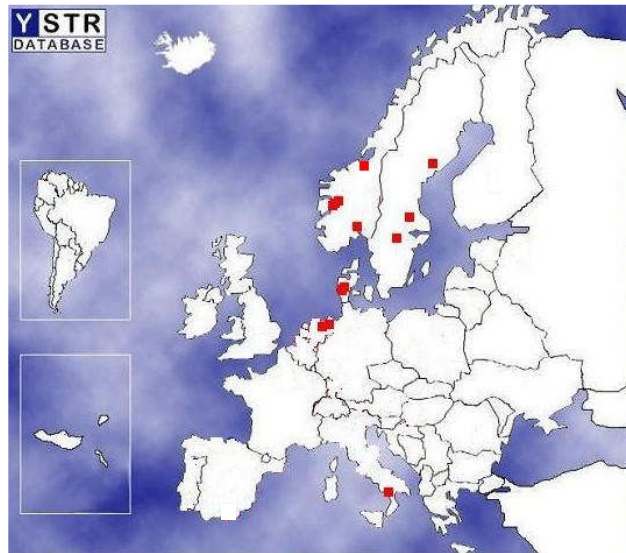
166 matches/13003



Population	Count	Frequency %
Norway Central	3 of 48	6
Norway East	5 of 85	6
Norway Oslo	2 of 33	6
Denmark	4 of 63	6
Norway North	2 of 45	4
Sweden	22 of 510	4
Zeeland	2 of 46	4
Budapest	3 of 117	3
Freiburg	12 of 433	3
Hamburg	3 of 114	3
Latium	6 of 222	3
Norway West	2 of 64	3



# Richard Harding's y-chromosome group



**No mutation, top matches:**

**Ostgotland-Jonköping, and Gröningen,  
~8% of men have a match.**

**One step mutation of one of his STR's:  
Top matches for each mutation:**

**West Norway (2ce)**

**Oslo**

**Puglia**

**Vasterbotten, Sweden**

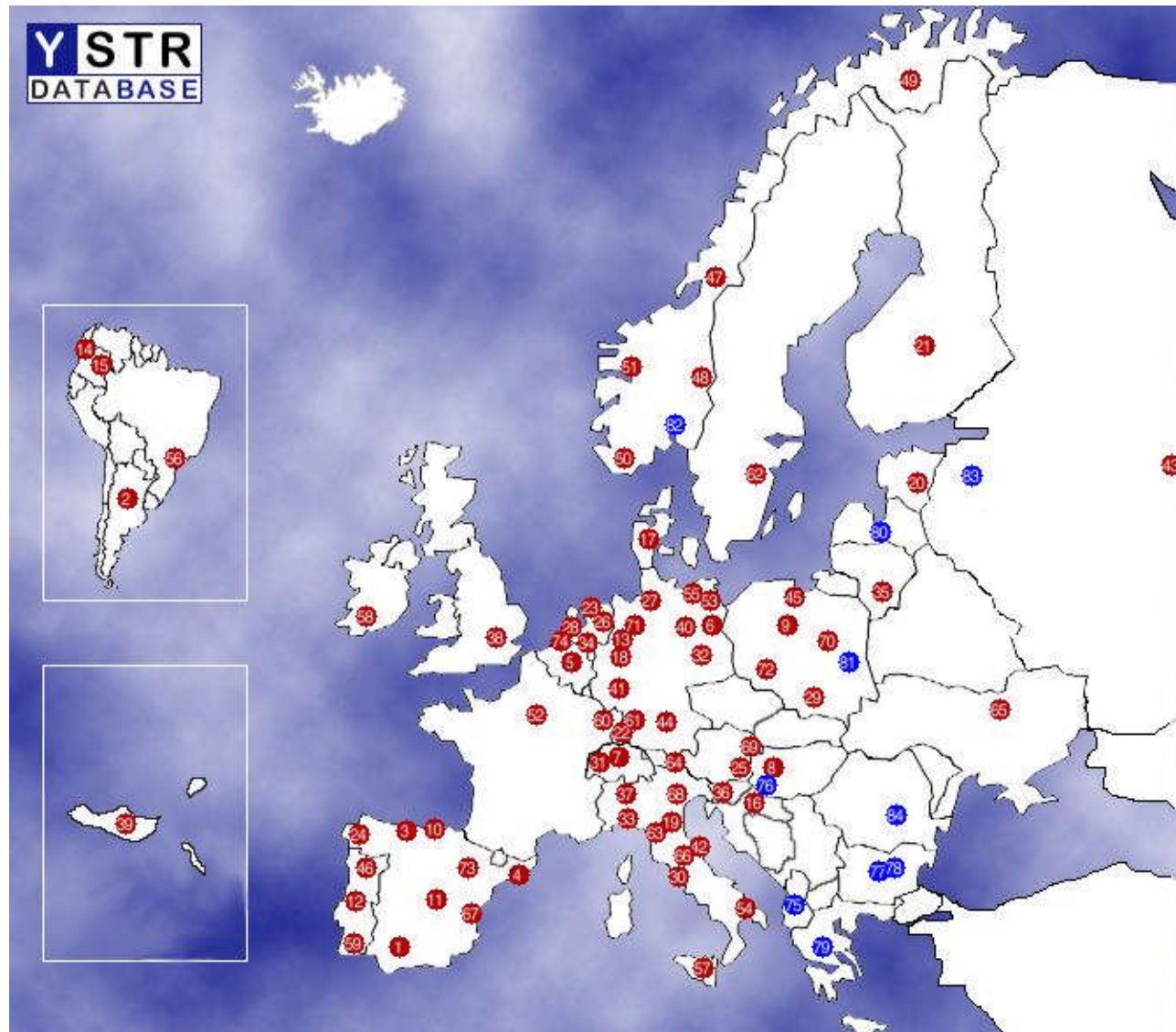
**Uppsala**

**Denmark**

# Kevin Sampson

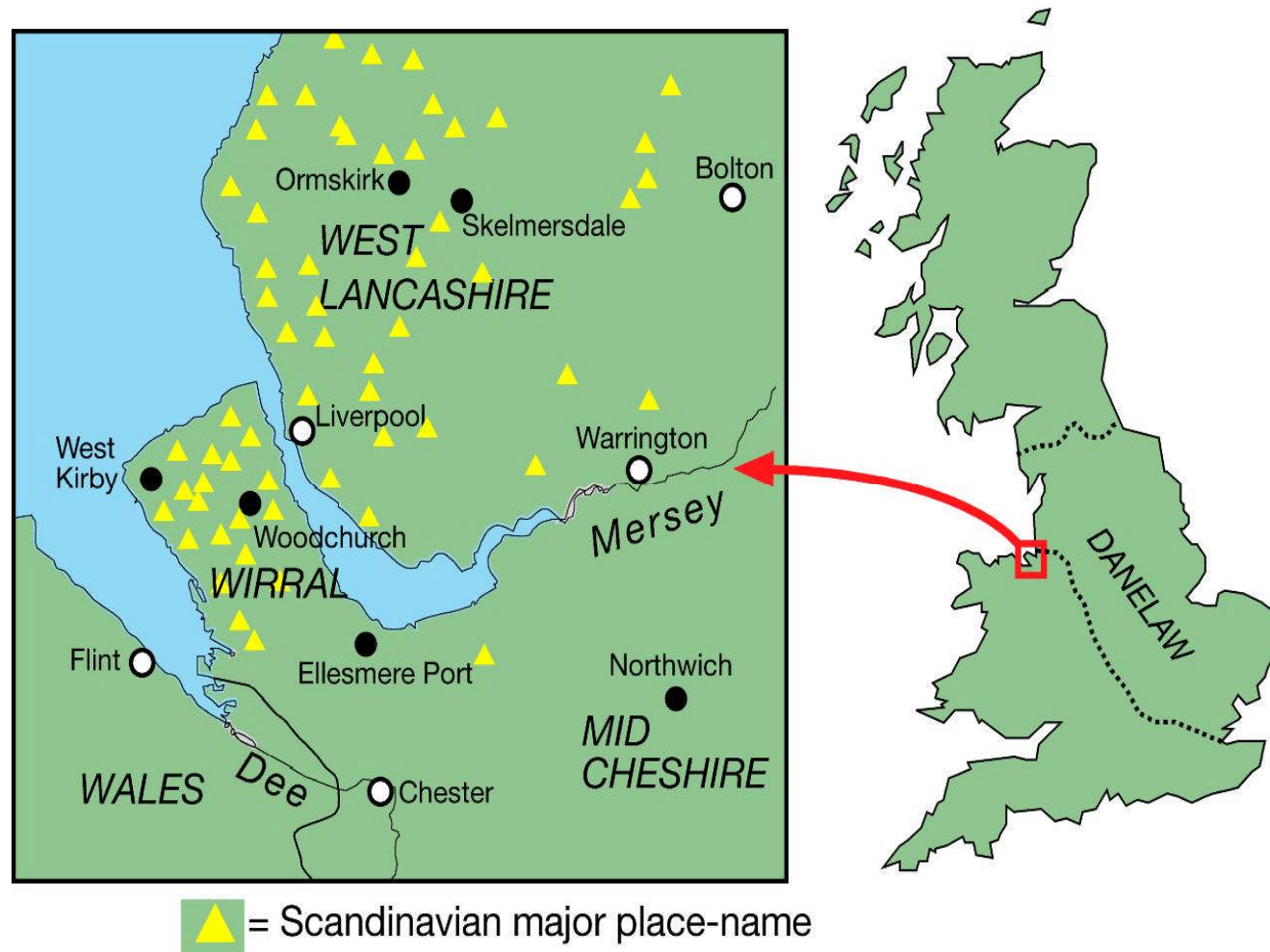


**267 matches/13003**



Population	Count	Frequency %
Denmark	10 of 63	16
Holland	13 of 87	15
Friesland	6 of 44	14
Groningen	6 of 48	13
Zeeland	6 of 46	13
Belgium	15 of 125	12
Norway South	3 of 25	12
Cologne	13 of 135	10
Strasbourg	9 of 99	9
Stuttgart	13 of 155	8
Asturias	6 of 90	7
Central-EastSpain	10 of 148	7
Freiburg	32 of 433	7
London	17 of 247	7
Pomerania	14 of 208	7
Berlin	32 of 548	6
Düsseldorf	9 of 150	6

# Wirral & West Lancashire – Vikings in the DNA?





## Watson-Crick DNA Anniversary award: Wirral and West Lancashire Viking DNA Project 2002-2007

- Mark Jobling
- Steve Harding
- Judith Jesch



## **Medieval Wirral Taxpayers/Criminals/Ale house records:**

Adam, Allin, Alleyne, Andrew, Ball, Barber, Barker, Barrell, Barrow, Bailiff, Beck, Bennett, Bergs, Billing, Bird, Blackburne, Boland, Brant, Bratherton, Browne, Brunt, Burscough, Bryde, Burrows, Bushell, Caley, Carr, Carlile, Carlisle, Challoner, Charnock, Chantrell, Coley, Colley, Colton, Coke, Corf, Corfe, Corness, Cotton, Cowper, Cross, Dalby, Dane, Danold, Davey, Davy, Denham, Denson, Dobb, Doe, Done, Duke, Dunn, Edmonds, Edmunds, Ellcock, Fazackerley, Fiddler, Fidler, Foreshaw, Forshaw, Fox, Francis, Gallie, Gardener, Gardiner, Gardner, Garratt, Garrett, Gibson, Gill, Gleave, Glegg, Goodacre, Grace, Gray, Gregory, Grey, Grice, Hale, Hancock, Hand, Harding, Hare, Harper, Harrison, Harvey, Heath, Helsby, Hesketh, Hey, Heyward, Hide, Hill, Hogg, Hole, Holme, Holmes, Home, Hough, Hulme, Hulmes, Humphrey, Huntington, Hynes, Jennion, Jensen, Jeunds, Johnson, Jump, Kemp, Kirk, Kirkby, Leck, Lancelyn, Ledsham, Leighton, Lennard, Leonard, Ley, Lightfoot, Linacre, Little, Lunt, Macklin, Massie, Massey, Matthew, Mayle, Mayles, Middleton, Milner, Molyneuz, Moss, Moulding, Mutton, Nelson, Newbold, Newton, Otter, Otty, Page, Parr, Pearson, Pemberton, Pendleton, Pennington, Penketh, Penney, Philip, Phylip, Pigot, Pinnington, Plumbe, Poole, Potter, Prenton, Pye, Pyke, Radcliffe, Rathbone, Richardson, Rider, Ridley, Rimmer, Robinson, Rogerson, Russell, Rutter, Saddler, Sadler, Sampson, Scarff, Scarffe, Scarisbrick, Sclater, Scriven, Sefton, Sharpe, Shephard, Shepherd, Sherlock, Skinner, Smalley, Smythe, Spenser, Stones, Swain, Swaine, Swarbrick, Swindley, Tarleton, Taskar, Tellett, Thomason, Thomasson, Thomson, Threadgill, Threadgold, Tottey, Totty, Tumath, Tyldesley, Wade, Wainwright, Walley, Walton, Warburton, Waring, Warrington, Watmough, Watt, Whalley, Wharton, Wilkinson, Williamson, Whitby, Whitehead, Whitelaw, Whitfield, Whitmore, Whittle, Whyte, Williamson, Willoughby, Worral, Woods, Woodward, Wilcock, Wise, Wyse, Young, Yoxon.



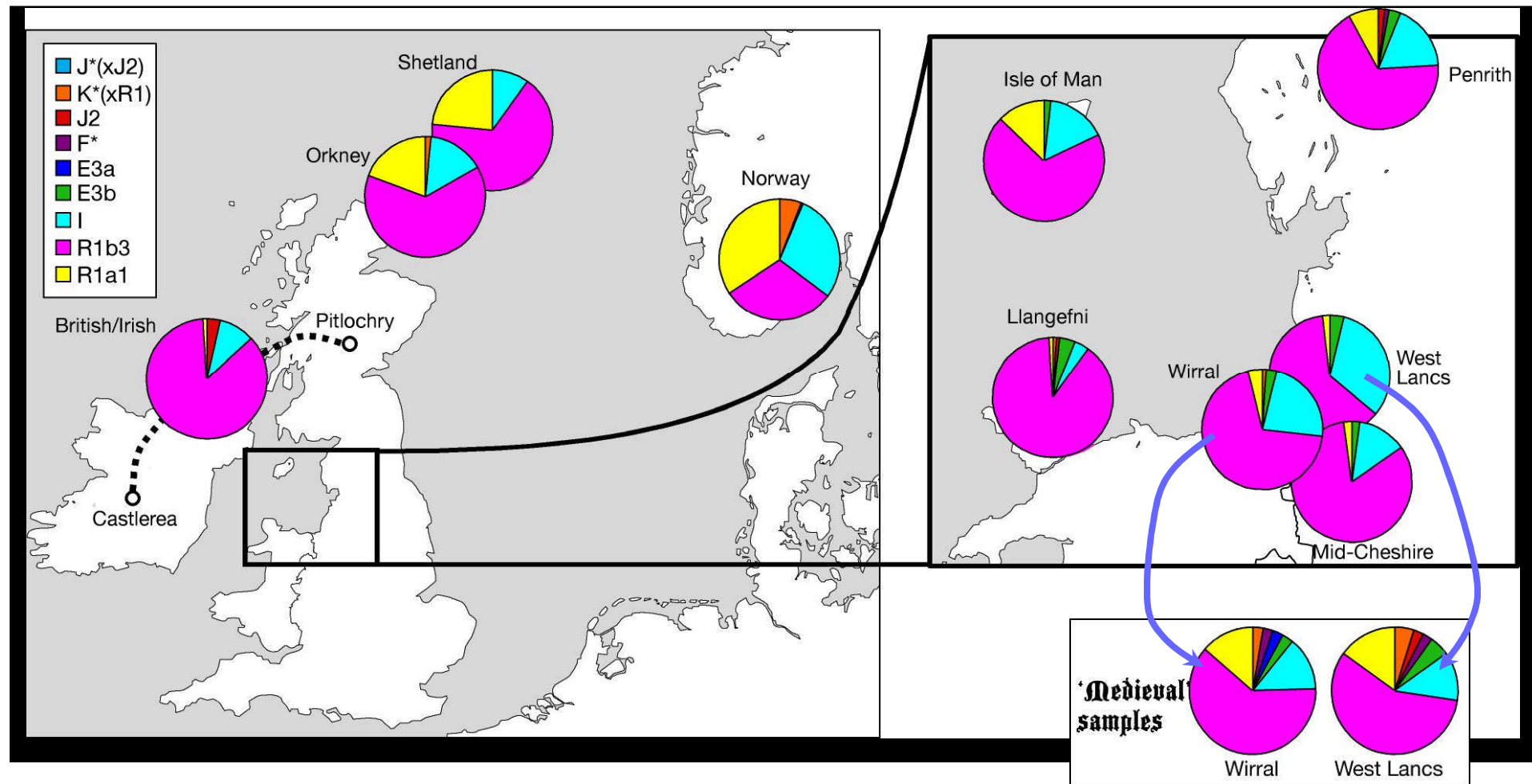


## Y-chromosome distributions for the north west

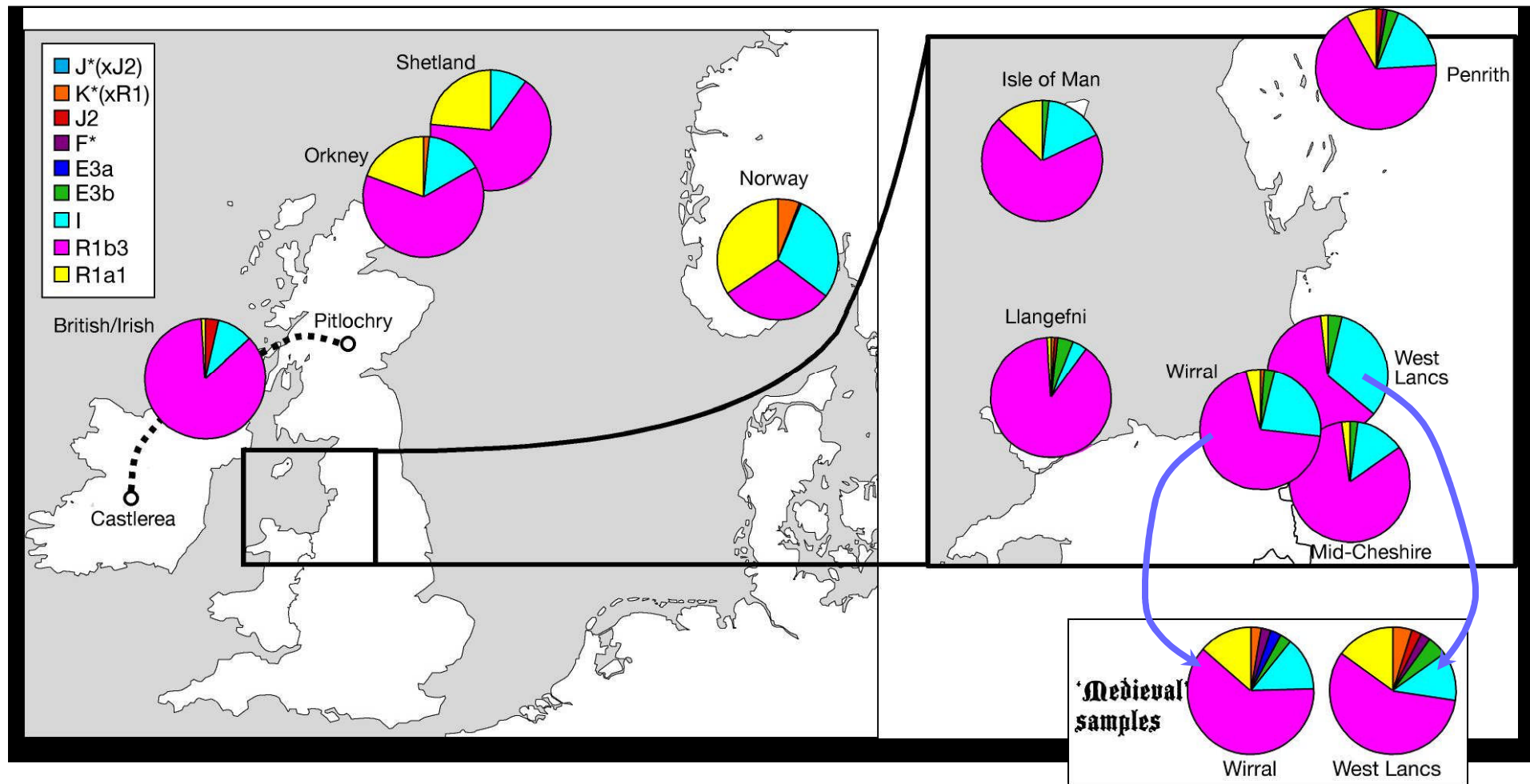


*2 generation test*

# Y-chromosome distributions for the north west



# Y-chromosome distributions for the north west



**30-50% Scandinavian**



# My Viking Dad with my Viking dog!



**From Abigail Forshaw**

# My Viking Dad with my Viking dog!

Viking  
beer!



From Abigail Forshaw

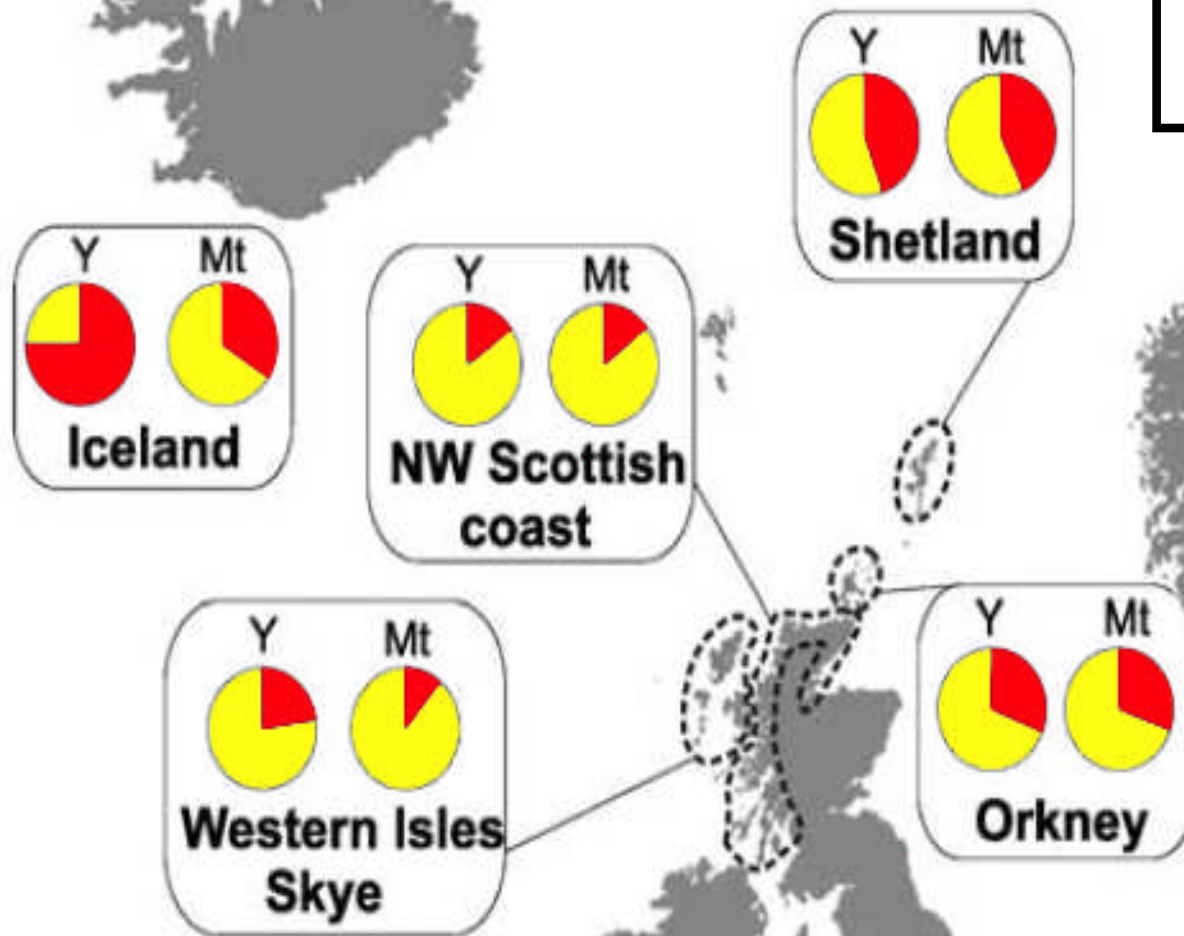


## **Merseyside Young Archaeologists, January 2003**





*Viking family  
movements?*



**ANCESTRY**

- Scandinavian
- British/Irish

# Next project: N. Lancashire, Cumbria and N. Yorks



... and a closer look at old Scandinavia



# Last Viking Invasion of Liverpool 902AD





*But you just never know...*

# HOW TO AVOID A VIKING ATTACK ON YOUR WAY TO THE LIBRARY

- 1** Keep your head – don't try to reason with them (they hate softies).
- 2** Show them you don't wear a vest – you're obviously a man to be reckoned with!
- 3** If they persist head directly to the public library.
- 4** Vikings are notoriously noisy, and will be expelled forthwith!
- 5** Once the coast is clear, head down to your nearest Cains' pub and reward your ingenuity with a refreshing pint of Cains – you deserve it.



*Show them  
you don't  
wear a vest*

*Vikings are  
notoriously  
noisy*



**Tell us about your narrow escapes and  
win an 'I KEPT MY HEAD' T-shirt!**

Send your true stories to:  
I Kept My Head,  
Robert Cain Brewery, Stanhope Street,  
Liverpool L8 5XJ or  
e-mail: [ikeptmyhead@cainsbeers.com](mailto:ikeptmyhead@cainsbeers.com)  
All respondents qualify to join the "Cains



***<http://www.nottingham.ac.uk/-sczsteve>***