Facts & Genes from Family Tree DNA
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In This Issue
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Editor's Corner

Welcome to this issue of Facts & Genes, the only publication devoted to Genetic Genealogy.

Since 2002, Facts & Genes has been published every month, and provides valuable information about utilizing Genetic Genealogy testing for your family history research, and keeps you informed about the latest advancements in the field. If you missed any of the past issues, they can be found online at FamilyTreeDNA.com. Click on the link below for the past issues of Facts & Genes:

http://www.familytreeDNA.com/facts_genes.asp?act=past

Any issue of the newsletter can be printed or downloaded from our site. If your email program causes you problems when you try to print the current issue of the newsletter, try the issue at our web site. The issue at our web site will usually print on the minimum amount of paper without any problems. Click on the link below to print or download the current issue of the newsletter:

http://www.familytreeDNA.com/facts_genes.asp

If you have fellow genealogists, friends, family members, or participants in a Surname Project who you think would enjoy receiving our monthly newsletter, Facts & Genes, send them the link below, where they can get a free subscription:

http://www.familytreeDNA.com/fgregister.asp

If you are a Group Administrator and it has been a while since you established or reviewed your Project Profile, why not start the year with a review. Your project description in the Project Profile provides 1000 c haracters for a description. Perhaps you can make your Project Profile
more interesting and more inviting. A high volume of visitors to FamilyTreeDNA.com search on their surname each day, and view Project Descriptions. Your Project Description will be the first item they

encounter for one of your surnames. Does your description encourage them to learn more by visiting your web site?

Last month we announced our new 37 Marker Y DNA test. If you have matches with other Surnames, the 37 Marker test is recommended. If you are in a Surname Project, the test could help identify branches, or resolve situations where the genetic distance is unclear. To order an upgrade to
37 Markers, log into FamilyTreeDNA.com with your kit and password, and click on the selection at the top of your Personal Page, next to your name, labeled "Order Tests".

Family Tree DNA now has over 750 Surname Projects which include over 6,000 surnames. Our database of Y DNA results is also growing, and now has over 18,000 records.

We at Family Tree DNA would like to thank everyone for his or her suggestions, comments, and submissions. Your input is appreciated. Send your comments, suggestions, tips, questions, and tell us about your Surname Project to: editor@FamilyTreeDNA.com. We hope you enjoy this issue.

In the News: Family Tree DNA Announces mtDNA Enhancements

Family Tree DNA is pleased to announce that mtDNA Haplogroup descriptions are now available. These Haplogroup descriptions were prepared specifically for Family Tree DNA. For those who have taken a mtDNA test at Family Tree DNA, when you view your test results, you will find a description for your Haplogroup shown on the page for your mtDNA test results. The Haplogroup description is located below your mtDNA test results.

To view your mtDNA Haplogroup description, log into FamilyTreeDNA.com with your kit and password. From your Personal Page, click on the selection "mtDNA Results".

For more information about mtDNA and mtDNA Haplogroups, see the article below titled "Understanding Your Results: mtDNA Haplogroups".

There are two mtDNA tests available from Family Tree DNA:
mtDNA [Previously called Maternal Match] mtDNA Plus

A mtDNA test will tell you about your direct female line, which is your mother, her mother, and her mother, back in time. The mtDNA test provides information about your direct very distant maternal Line ancestor.
Therefore, the mtDNA test is known as an anthropology test, since the results relate to the very distant past. The mtDNA test may also be used for genealogical purposes.

The mtDNA test can be taken by males and females. Both males and females inherit mtDNA from their mothers, though only females pass on mtDNA.

To order a mtDNA test, click on the link below:

http://www.familytreeDNA.com/products.html

The Year in Review: 2003

2003 was an exciting year at Family Tree DNA. Genealogists are starting to discover Genetic Genealogy, and the information that can be uncovered with DNA tests. Genetic Genealogy is still in its infancy, and the majority of those researching their family history are not yet aware of this powerful new tool, that will assist them with their research.

We started the year with 309 Surname Projects, and finished the year with 750 Surname Projects!! We also shipped over 10,000 test kits.

In 2003, Family Tree DNA again set a new industry standard with the 37 Marker Y DNA test. This scientific advancement came only a short time after the 25 Marker test was introduced in July 2002. The 37 Marker Y DNA test provides more data and is more cost effective than any other test on the market.

In 2003, Family Tree DNA introduced three Haplogroup products:

Y DNA Haplogroup estimate
Y DNA Haplogroup test
Haplogroup database

We are the only testing service to provide these tools and the only vendor to offer the Y DNA Haplogroup test.

Our other major accomplishments in 2003:

-Implemented Public/Private Setting on an individual level -Various enhancements to the Group Administrator Tools and reports -African data added to the Haplogroup database -Implemented the Family Tree DNA Forum -Commenced the Y DNA Mutation Rate Study -Ysearch

In our January 2003 newsletter, we promised an aggressive plan of developing new features and products for our customers. We hope you will agree that our 2003 results met that commitment.

Predictions for the Future of Genetic Genealogy

We expect many exciting developments at Family Tree DNA this coming year, as well as scientific advancements in DNA testing that will benefit genealogists. DNA testing for genealogy is still in its infancy, and many discoveries are expected in the coming years.

Just three and one half(3 1/2) years ago, in late May 2000, Family Tree DNA began offering a Y DNA test and an mtDNA test. Family Tree DNA was

the first commercial testing service to offer Y-DNA Genetic Genealogy tests to the public. The initial Y DNA test was for 12 Markers, and the mtDNA test was only for the HVR1 region.

During the same month, Oxford Ancestors, under the direction of Professor Brian Sykes, announced mtDNA testing, and stated that Y DNA testing would soon be available.

At that time, Family Tree DNA offered 12 Markers, and Oxford Ancestors launched an offering of 10 Markers for their Y DNA test late in 2000. Today, Family Tree DNA offers 37 Markers, and tests mtDNA HVR1 and HVR2 region.

Genetic Genealogy has just entered the growth phase, called Technological Growth and Diversity or Stage 2. During this phase, which will last for several years, more people will hear about Genetic Genealogy tests, and get an understanding of what the tests can provide for their family history research. In this stage, we will see a significant increase in Surname Projects, as well as participants in the Surname Projects. In addition, in this stage we expect to see rapid product improvement, a higher variety of products, and a higher rate of new product introduction. Family Tree DNA expects that this next market stage will last about 3 years.

As an industry starts to grow, auxillary products and services appear. These auxillary products and services are starting to appear for Genetic Genealogy, which is another indication that the industry is in Stage 2.
For example, one company was recently formed to provide lapel pins which show a mtDNA Haplogroup. http://www.dnapin.com

Family Tree DNA has an aggressive plan of developing new features and products for our customers in 2004. In addition, we expect Ysearch to become the industry standard tool for analyzing Y DNA results. In 2004,
we also expect a higher coverage of Genetic Genealogy by the Genealogy magazines, which will result in more genealogists understanding the power of DNA testing for genealogy. This increased coverage by the magazines will especially benefit Group Administrators, who often contact people who have never heard of Genetic Genealogy. The magazines will also play a role in helping people to feel more comfortable with DNA testing, since education will typically overcome fear of the unknown.

In 2004, we expect both our Y and mtDNA database to grow substantially.

We are looking forward to 2004, and have an aggressive plan of developing and implementing new features for our valued customers.

Understanding Your Results: mtDNA Haplogroups

Each mtDNA Haplogroup represents all those persons descended from one of the Clans, actually subdivisions from the female that we all descend

from...In lay terms, the mtDNA Haplogroup is often referred to as the "Daughter of Eve" or the "Clan Mother".

Each of these females or clan mothers now have millions of descendents today, who are all identified as belonging to the same Haplogroup, althoigh their specific DNA signature may vary.

Humans originated in Africa about 120,000 to 150,000 years ago. The original female to exist in Africa is known as the Mitochrondrial Eve. The "Clan Mothers" or "Daughters of Eve" are descendents of this original Mitochrondrial Eve.

Scientists have identified a few dozen mtDNA Haplogroups around the world, and more mtDNA sub Haplogroups could be discovered as the scientists research remote populations.

mtDNA Haplogroups are identified by letters of the alphabet, and some of these Haplogroup labels also have numbers. When a subgroup is identified a number is placed directly after the letter, for example J1 indicates that at least 1 specific subgroup for J has been identifed.

Below are some of the Haplogroups for mtDNA:

A, B, C, D, F, G, H, I, J, K, L, L1, L2, L3, T, U, V, X

Each mtDNA Haplogroup originated in a different geographic area, thousands of years ago. For example, it is known that Haplogroup H originated in Europe, and was involved in a population expansion about 20,000 years ago.
Over time, populations migrated, and Haplogroup H is now spread out over Europe, and about 40% of all Europeans belong to mtDNA Haplogroup H.
Haplogroup U5 is the oldest European lineage, dating about 50,000 years ago, and may have come in contact with Neanderthals living in Europe at the time.

The classification of mtDNA Haplogroups should not be confused with the classification of Y DNA Haplogroups. Y DNA and mtDNA each have a separate system for classifying the respective Haplogroup. Y DNA Haplogroups are based on a test of the Y chromosome, and mtDNA Haplogroups are based on a test of mtDNA. Even though Y DNA has an A Haplogroup, and mtDNA has an A Haplogroup, these Haplogroups are completely different.

Both males and females inherit mtDNA, and only females pass on mtDNA. Your mtDNA represents your direct female line, which would be your mother, her mother, and so forth. Therefore, both males and females can take the mtDNA test, to learn about their direct female line. Your mtDNA can be traced back thousands of years to one of the original females. You Haplogroup defines which of these females was your ancestor.

Your mtDNA Haplogroup will tell you some information about the general geographic area where you Daughter of Eve originated or at least where that Haplogroup is most commonly found today:

Southern Europe: J, K
Northern Europe: H, T, U, V, X
Middle East: J,N
Africa: L, L1, L2 and L3.

Asia: A, B, C, D, F, G

Native American: A, B, C, D and sometimes X

mtDNA Haplogroup X is found in Europe and Asia, and is believed to have migrated to the Americas about 15,000 years ago, making up a very small component of the Native American population.

The mtDNA Haplogroup descriptions at Family Tree DNA provide additional information about your mtDNA Haplogroup.

There are two mtDNA tests available from Family Tree DNA:
mtDNA
mtDNA Plus

The test called mtDNA will test one region of mtDNA and provides the results for this region, and identify your Haplogroup. The mtDNA Plus test includes the mtDNA test, and also tests a second region of mtDNA. These regions are called HVR-1 and HVR-2, and are known as HV (Hyper Variable) Segment or HV Region. The HVR1 and 2 tests look at mutations with teh control region of yoru mtDNA...an area of teh mtDNA that is not known to 'code' for anything and enjoys teh fastest mutation rate of any region in the mtDNA. The scientists use both the terms HV Segment and HV Region, and you may well find these terms used interchangeable, as well as the associated abbreviations.

In summary:

Test	What is Tested
mtDNA	HVR-1 and determines the Haplogroup
mtDNA Plus	HVR-1, HVR-2 and determines the Haplogroup

Occasionally, an ancient human has been discovered and their mtDNA tested, such as the Ice Man. The 5000 year old Ice Man belongs to Haplogroup K.
The Cheddar Man belongs to Haplogroup U.

The mtDNA test is often called an anthropology test, since mtDNA mutates very slowly, much more slowly than Short Tandem Repeats (STR's) that we test with the Y chromosome. The results for a mtDNA test tell you about your most distant female ancestor, or Clan Mother.

The mtDNA test, besides telling you about your very distant direct female ancestor, can also be used to confirm genealogical relationships. If two persons are linked by a common female ancestor, then their results from the mtDNA test will match exactly. The two persons could be either male or female, as long as the male's mother belongs to the direct female line being tested.

Since mtDNA mutates very slowly, if you are interested in finding matches to others, or using mtDNA for genealogy purposes, it is important to take the mtDNAPlus test. If you have already taken the mtDNA test (Maternal Match), this test can be upgraded to the mtDNA Plus test. The addition of testing the second mtDNA region, HVR-2, will shorten the time frame of any matches.

It is highly recommended that the mtDNAPlus test be ordered by those persons interested in a genealogical application, or for matching. mtDNA has a very slow mutation rate. The chart below shows the time frame of the common ancestor for a random match.

Test	Time frame of common ancestor for a match
mtDNA	50% of the time, 52 generations or less
mtDNAPlus	50% of the time, 28 generations or less

These time frames are for random matches. When you are utilizing mtDNA testing for genealogical purposes, you have identified the ancestors or potential ancestors, so the time frames shown above are not relevant.

mtDNA test results show the Haplogroup, and the mutations compared to the standard, which is called the Cambridge Reference Sequence (CRS). The CRS is simply the first mtDNA sequenced, so all results are presented as the mutations compared to this standard.

Since mtDNA mutates, or changes, very slowly, the Matching selection at familytreeDNA.com only provides exact matches, since partial matches are not genealogically relevant.

You mtDNA goes back further than any written record. To order a mtDNA test, click on the link below:

http://www.familytreeDNA.com/products.html

Recruiting Participants: The Cost of Genealogy Research

Genealogy is one of those hobbies where a lot of small costs can add up over time. Many of the research guides suggest that you keep an Expense Log, and record all you expenses. I don't know about you, but I started my Expense Log, and quit after about the third item. I had enough record keeping to do, with a Correspondence logs, a Research Log, and entering data in my family tree program. I certainly didn't need an Expense Log.

The benefit of the Expense Log is that it would provide a total for the year of all the small expenses, that add up over time, and often aren't remembered. This information would be very helpful when considering the cost of a DNA test.

In place of an Expense Log, we will look at some of the typical expenses incurred for genealogy. If you add up those expenses that apply to your situation, then you can compare this amount to the cost of a DNA test. A DNA test is a one time expense, which will provide information that can not be determined from any other source - plus, the test will keep providing information. As other participants test, you are sent an email informing you of a match. A DNA test is the only investment you can make in genealogy, that keeps providing a return, year after year. A DNA test will provide new information, as others participate and either match, or don't match. Even when they don't match, you have new information.

A DNA test can also save you time and money, for those that are researching the wrong tree, or the wrong location, or whose research is based on incorrect theories.

The cost of genealogy research is also increasing, as more state and local governments, as well as national governments, see genealogy researchers as a new source of funding for their budget short falls.

Below are some typical expenses relating to genealogy, broken down by category. The figures provided are either from a vendors site, or an estimate, if so noted. All figures are in US Dollars. The calculation from foreign currencies to US Dollar were done with mid-market rates.

Magazines
=========
$27.00 or more per year for one subscription (estimated)

Books
=====
$30.00 - $50.00 or more for one or two books a year

Memberships
===========
$12-$100 per year, depending on the organization. One or two or more memberships.

CD Purchase
===========
$20-$400 depending on the CD, or whether it is a set such as UK Census or UK Parish records

OnLine Services
===============
$229.00 Ancestry.com: Full year of all subscriptions $44.00 OtherDays.com 1 year subscription

Pay per View Sites/ short term subscriptions
==

$8.00 for 72 hours at Otherdays.com
$.10-.13 each to view items at FamilyHistoryOnline.net
$9.75 for 300 credits to view items from the Society of Genealogists

Conference
==========
$10.00 - $500.00 plus, depending on travel and registration fees

Film Rental at a FHC
====================
$3.25 - $3.50 each. At 1 per month, this is $42.00 per year. At 3 per month, $126.00

Certificates + Documents
========================
$27.00 US SSDI For SS-5 [Application for Social Security number] (number
known)
$37.00 US Civil War Pension File
$14.50 Search + transcript of Old Parish Registers by Scotsorgin.com
 $5.54 For a digital image delivered electronically of a PCC Will
$18.46 To provide an estimate for the cost of to copy up to 5 documents [PRO]
$14.77 The minimum postage charge by the PRO to mail copies.
$15.00-$25.00 UK BMD certificate: Depends if references are known
$38.78 Authentication fee, per page [PRO]

Copies
======
$.10-$1.00 each at a FHC, depending on the microfilm printer available
$2.00 per page, ordered from Salt Lake
$34.53 per page for A0 paper at the PRO
$129.65 per color copy per page size A0 [PRO]

Professional Researcher
=======================
$25.00 - $100.00 per hour, depending on expertise, experience, and country

Research Trip
=============
$10.00-$1000.00+ depending whether you go to the local cemetery or another state/country
$680.00   Example 4 day trip from Atlanta to Tennessee and Virginia.
                 Gas, vehicle operating cost, hotel, meals, and document copies

Expenditures on genealogy research can quickly add up, and the total is often hidden, since there are usually a lot of small expenses. The

list above can be used to refresh your memory, and estimate your genealogy expenses in a year. This expense can then be compared to the cost of a DNA test.

You can get a Y DNA test for 12 Markers cheaper than a color copy of an A0 piece of paper from the PRO, UK.

A DNA test can save you time and money. In addition, the DNA test will continue to provide a return, for years in the future.

Often Group Administrators encounter a price objection from a potential participant. If the potential participant is an active genealogist, one who goes beyond surfing the net, costs are incurred as they pursue their
hobby. The potential participant may not realize that all the small costs throughout the year add up to more than the cost of a DNA test. Those on a budget may want to start with the 12 Marker test, and upgrade to the 25 Marker test at a later date. Perhaps some of their genealogy expenses, such as subscriptions or memberships, can be skipped for a year, and the funds applied to the DNA test.

For more information on dealing with a price objection, see the article "Recruiting Participants: Cost Justify the Price". Click on the link below.

http://www.familytreeDNA.com/facts_genes.asp?act=show&nk=2.9

To quote one of our customers:
"One trip cost me more than I've spent on the Y DNA 25 marker and the 37 Marker upgrade - and what I found at all of the courthouses, libraries, etc. that I visited, was of minimal real value to my research. DNA testing is much less expensive than research and CAN BE much more valuable."

Ysearch: Entering Ancestry.com results

Ysearch.org is the public service database sponsored by Family Tree DNA, for Y DNA results. Ysearch.org is a free public service for those whom have utilized Y DNA testing, and provides tools to enter your test results, and search and compare results. The Ysearch database offers the ability to enter results for up to 43 Markers. These 43 Markers represent those used by commercial testing companies as well as scientific laboratories.

If you had a Y DNA test done several years ago through Ancestry.com, your results for Marker Y-GATA-H4 have probably not been restated in the new protocol. If this Marker shows a result over 14, it has not been restated with the new protocol. Therefore, to enter your Y-GATA-H4 result into Ysearch, you must subtract 15 from the result that Ancestry.com shows for Y-GATA-H4. For example, if Ancestry.com shows a 28, you would subtract 15, which would result in 13. The 13 would be entered at Ysearch. The highest value Y-GATA-H4 reported under the new protocol is 14.

Case Studies in Genetic Genealogy

In each issue of the Newsletter, we look at what Genetic Genealogy will do for your Family History research. This article is a continuation of the topic, with situations, called "Case Studies", followed by a recommendation. The objective of the case studies is to present different situations you may encounter in your family history research, and how DNA testing can be applied.

Case Study

We received the first three (3) results back for participants in our Surname Project. Each individual had a different result, and all 3 are in a different Haplogroup. How do I interpret this data? Are these 3 people related, or are they from different Lines?

Recommendation

The 3 participants are not related, and each represent a different Line of the Surname. To confirm this conclusion you would want to test at least one more person from each Line, who is a distant cousin to the person tested. This step is recommended to validate the result for the Line. In addition, this step could identify the Ancestral Result for the Line.
Determining the Ancestral Result will be very beneficial for analyzing the results of future participants.

Spot Light: Perryman Surname Project

The Perryman Surname Project includes the surnames: Parriman, Pearman, Periman, Perreman, Perremon, and Perriman. According to the U.S. Census Bureau, Perryman was the 2,541st most common surname in the United States in 1990. According to a database from the Office of national Statistics, UK, there are 2377 persons with the Perryman surname currently in the UK, and the surname ranks as number 3170 out of 270,000 surnames in the UK.
According to this ranking, 3169 surnames have a higher population, and 266,830 surnames have a lower population.

The Perryman Surname Project is taking a focused approach. The Surname Project is initially focusing on those Perrymans who came to America more than 300 years ago. Research in early American records is difficult and often inconclusive due to the destruction or loss of records.

The current objectives for the project are:
* Identify the Perryman families

* Validate existing research
* Resolve "brick wall" issues
* Determine areas for additional research
* Establish a DNA database for future researchers
* Identify the origin(s) of the surname

The Perryman Surname Project is in its infancy, and has 10 test results back from the lab. These 10 participants had 6 different DNA results, representing 6 different Perryman Lines. This result is an early indicator, not conclusive, that the surname has multiple points of origin.

In the Next Issue

We hope you have enjoyed this issue of Facts & Genes. Please feel free to contact the editor with your comments, feedback, questions to be addressed, as well as suggestions for future articles. If you would like your Surname Project featured in our Spotlight column in a future issue, please send an email telling us about your project. If you are a Project Manager and can help others with tips or suggestions, please contact the
editor: editor@FamilyTreeDNA.com