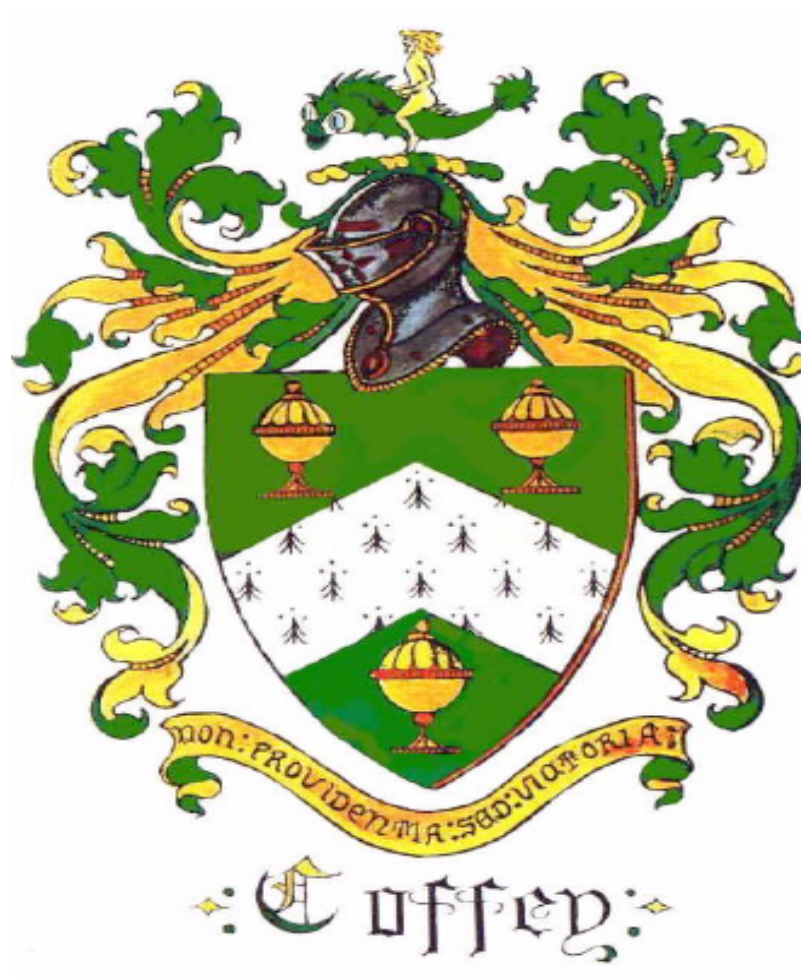
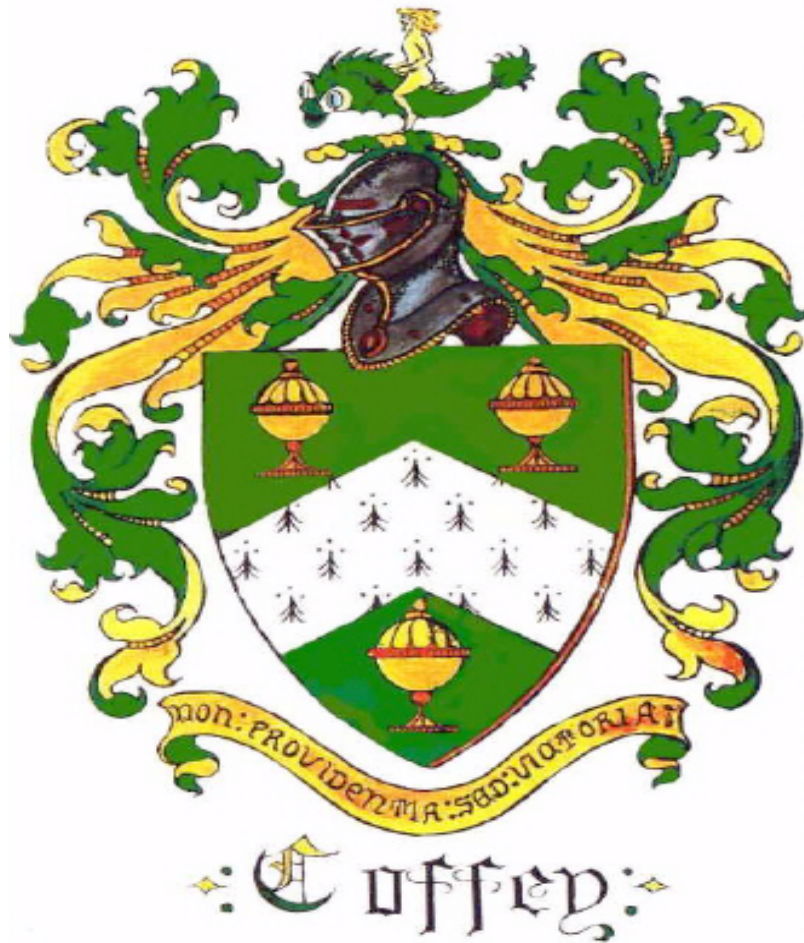


Your DNA, Your Family Tree, and Coffey Cousins Diversity



Your DNA, Your Family Tree, and Coffey Cousins Diversity



Your DNA

Your Family Tree

"Coffey" Diversity

Presented by:

FredCoffey@aol.com

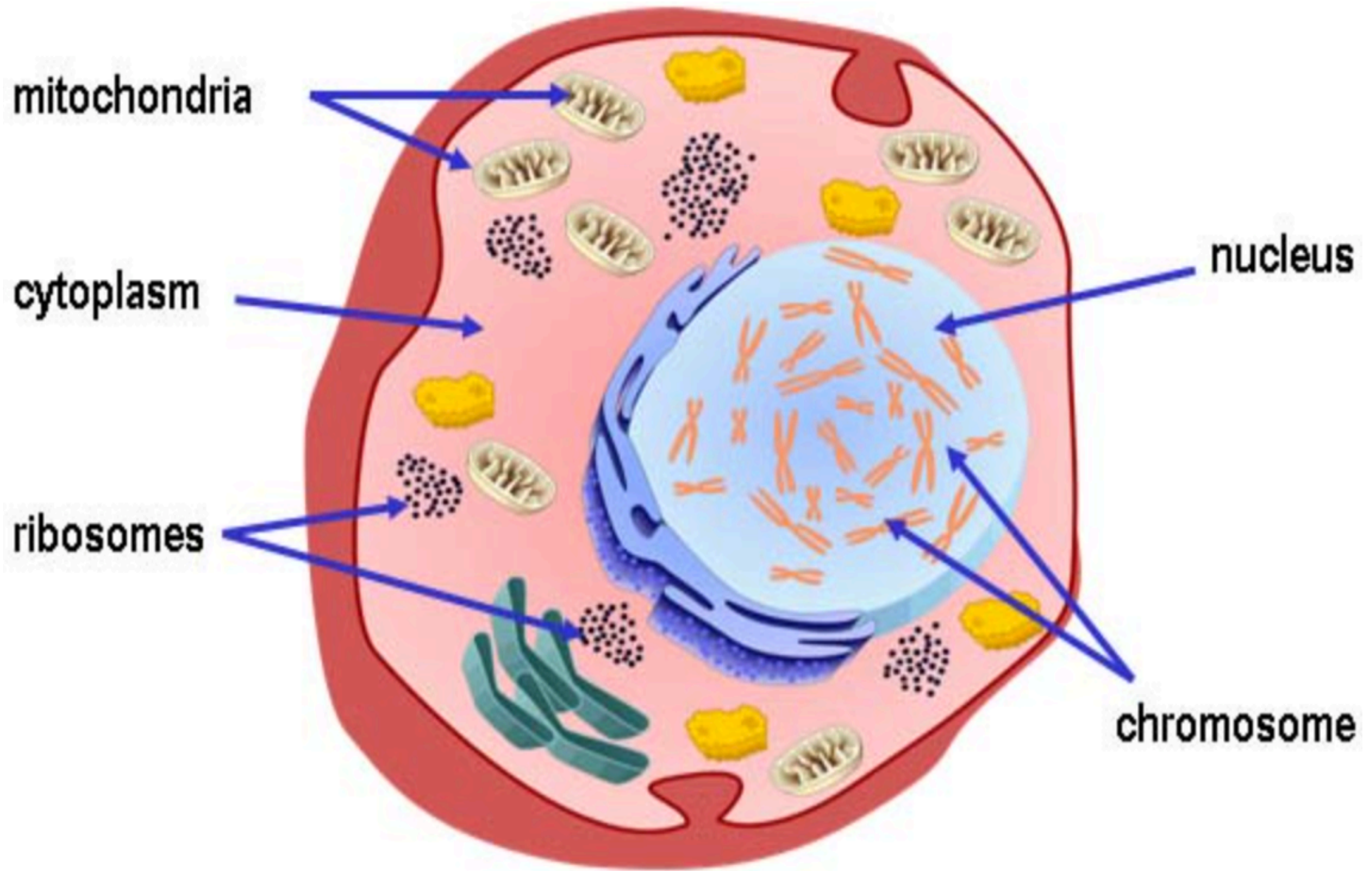
Your DNA and Your Family Tree

My name is Fred Coffey, and I am co-administrator of a large DNA testing project (presently 360 members). And I also manage a large data base of information, where I collect and organize any information I can find about anybody named Coffey or Coffee.

This paper is intended to help readers understand what they can learn about their own family via DNA testing. And to learn about the tremendous diversity of Coffey "Cousins". We are not a single united family, there are dozens of distinct and unrelated families.

And I don't believe ANY of us have a valid claim to the Coffey Crest on this first chart. But it is pretty!

YOUR DNA IS IN ALL OF YOUR CELLS



YOUR DNA IS IN ALL OF YOUR CELLS

Where do we find your DNA? Every single one of your body's cells has a full complement. Let's slice open one of those cells:

Most of your DNA is in the chromosomes, found in the cell nucleus. We'll talk more about those in a moment.

However there are also a number of critters scattered through the cytoplasm, called mitochondria. They have their own, entirely separate, DNA.

And how do we get a sample for DNA testing? Order a test kit, and rub the inside of your cheek with a plastic swab. That will rub off enough dead cells for testing. Then send the sample back.

DNA MOLECULE: A DOUBLE HELIX



DNA MOLECULE: A DOUBLE HELIX

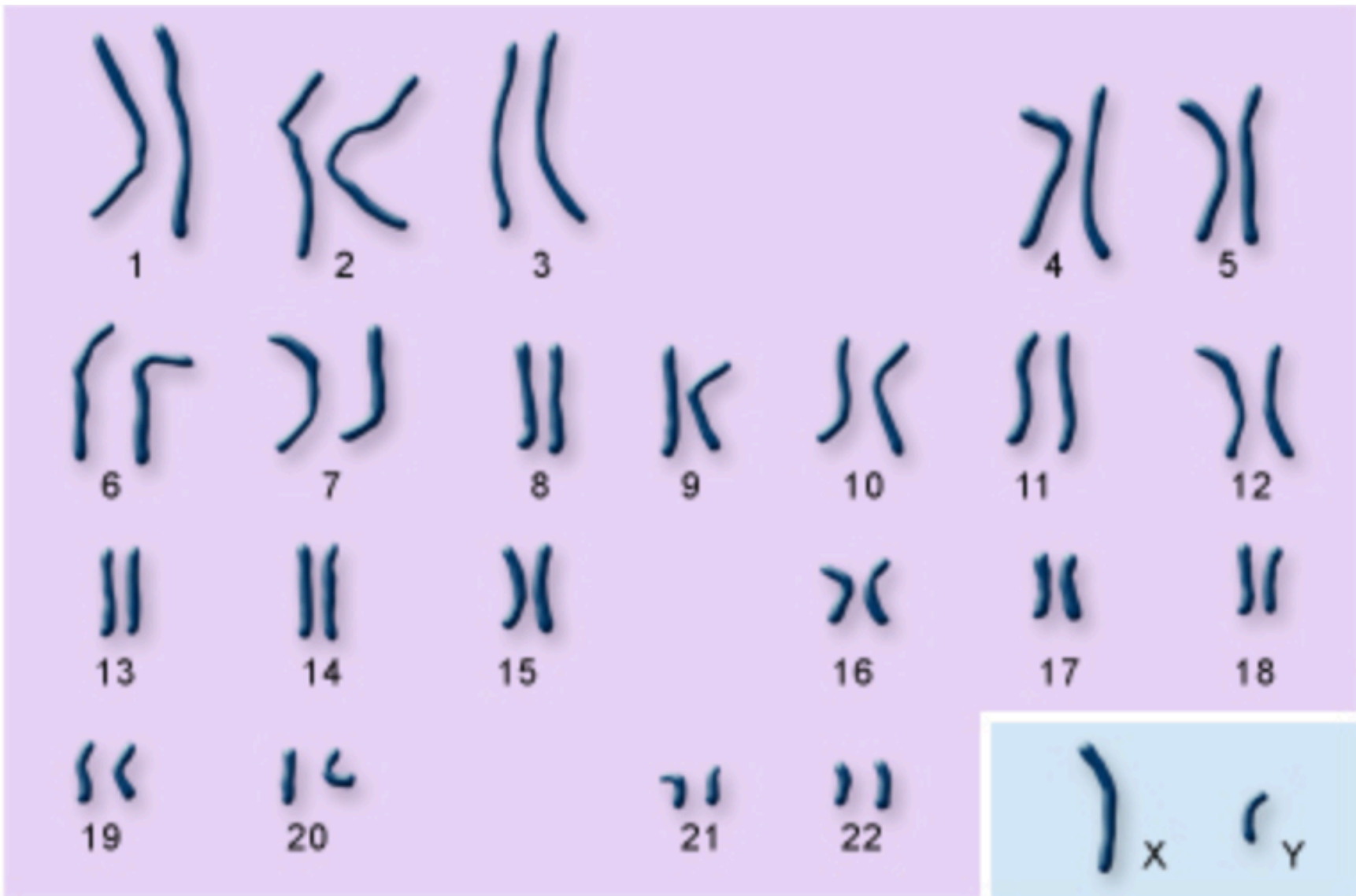
Next, let's have a quick look at a small segment of a DNA molecule.

It's in the shape of a double helix, that spirals around like this sketch. And the backbones of each side helix are attached by connectors. The connectors are complex molecules, with long names, and are usually referred to by their initials A, T, C and G. The connectors are fussy - An "A" will only connect to a "T", and a "C" will only connect to a "G". So if you know one side, you automatically know the other.

Let me focus on the middle segment. On the left we have blue, yellow, red and green. We could label that section "CAGT"

Your entire DNA genome can be described by a list of these connectors, or nucleotides. And it is possible to do a "full genome" DNA test, and get the full list of your DNA nucleotide sequence. But you're going to need a lot of paper to write it down. There are SIX BILLION of these nucleotides in your genome!

THERE ARE 23 PAIRS OF CHROMOSOMES



autosomes

sex chromosomes

THERE ARE 23 PAIRS OF CHROMOSOMES

Now, back in the nucleus, there are 46 chromosomes, in 23 pairs. Taken together, they are all the instructions necessary to create and maintain a human life. The first 22 of these pairs are called autosomes. Let's focus in on one of the big ones, like chromosome #1.

You got one of the chromosomes in this pair from your father, and one from your mother.

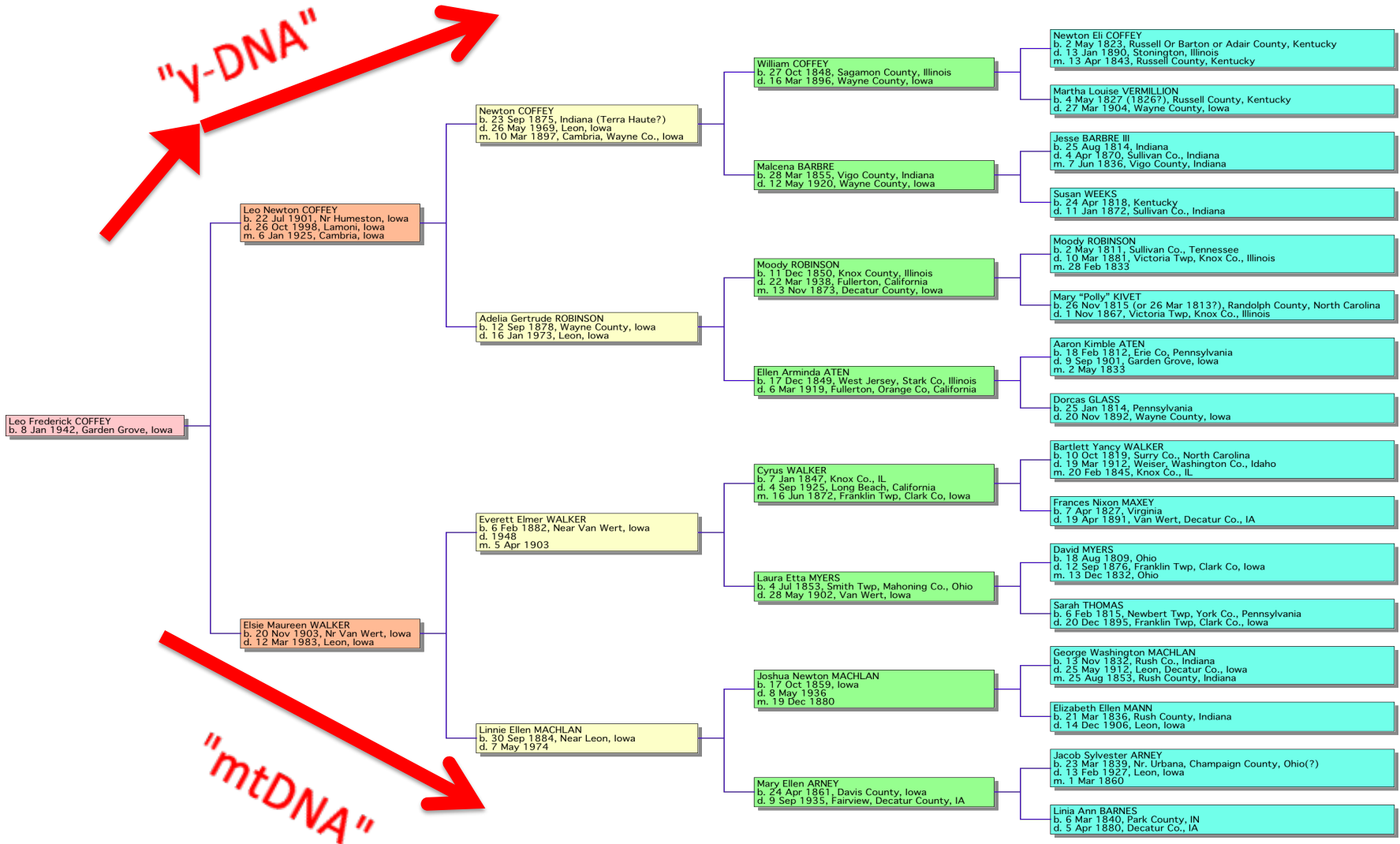
But you will only be able to pass on a SINGLE chromosome to your children. Which one will be used? Your body, before passing on a single chromosome to a child, will break the original pair into shorter segments, and then reassemble the pieces into a single chromosome. This is called "recombination".

The child then gets two of these 'recombined' chromosomes, one from each parent. Ultimately, the child ends up with a mix of segments from his parents, from grand parents, and so on back.

Now, at the bottom right there is a special pair of chromosomes. If you have two of the "X" chromosomes, you are female. If you have one "X" and one "Y" you are male. While two "X" can recombine, the "Y" is never able to do so.

And since "Y" is only found in males, it is handed down from father to son, just like the "Coffey" surname. And this makes it a wonderful target for tracking male-line genealogy!

WHAT THE DIFFERENT TESTS CAN LOOK AT



WHAT THE DIFFERENT TESTS CAN LOOK AT

To see what the different tests can explore on your family tree, we need a tree. This is mine. I'm the guy on the far left. Moving up and to the right, you see my father, my grandfather, my great-grand father, and so on.

The y-DNA tests can follow this line.

A moment ago I mentioned the mitochondria, which have their own DNA. Everybody has mitochondria, but we all got them ONLY from our mother. So a mtDNA test will follow the female line. Cool, just like the yDNA and the male line.

But there are two problems. First, mtDNA changes only slowly. Two people may have a PERFECT mtDNA match, and you then KNOW you have a common ancestor, but you don't know if that ancestor lived 100 years ago, or 1000 years ago.

And the second problem is that our convention is for females to change their name upon marriage. That quickly gets confusing. My mtDNA line is "Walker/Machlan/Arney/Barnes/etc/etc.

Finally, we have autosomal DNA tests. This looks at the MIX of all of the atDNA from all of our ancestors. It requires a LOT of data, but it's QUITE GOOD at spotting cousins out to at least the third cousin level. My third cousin would be anybody who descends from any of the sixteen people listed on the far right.

LOOKING AT THE "Y" CHROMOSOME

SNP short tandem repeat (STR)



Man 1 GTACT**T**AGACTACTACTACTACTACTGGTG...
5 repeats

Man 2 GTAC**A**AGACTACTACTACTACTACTACTGGTG...
6 repeats

Man 3 GTAC**A**AGACTACTACTACTACTACTACTACTGGTG...
7 repeats

LOOKING AT THE "Y" CHROMOSOME

Now let's take a quick look at that little Y chromosome:

Here are three men, showing one hypothetical segment of their yDNA. They all start out with a sequence "GTAC".

But wait, something is different in the fifth position! Maybe every male in the world originally had an "A" here, but there was a rare mutation, and one male got a "T". The mutation did him no harm, but from then on EVERY descendant of that first mutation now has a "T".

This is called a "single nucleotide polymorphism", or a "S N P", or a "snip". This has a lot of genealogical potential, but there are now many thousands of known "snips" in the human y-chromosome, and trying to organize them can be a real challenge. But there has been a lot of progress, and we'll talk about that a bit later.

There's another type of mutation that is easier to use for genealogy. At a number of places in the yDNA there are sections where a short segment repeats itself. These are called "short tandem repeats", or STR's. Man #1 has the sequence CTACTACTACTACTA, or 5 repeats. Man 2 has six repeats, and man 3 has 7 repeats. The number of repeats will sometimes change. This does no harm to the man, but the number combinations can become associated with a particular family line, like "Coffey".

EXAMPLE: Y-DNA Test Result

"EDWARD COFFEY" GROUP (12-MARKER TEST)

<u>Locus</u>	<u>DYS#</u>	<u># of STR's</u>
1	393	13
2	390	24
3	19/394	14
4	391	11
5	385a	11
6	385b	14
7	426	12
8	388	12
9	439	12
10	389-1	12
11	392	13
12	389-2	28

Haplogroup is "R1b"

Think of "Locus" and "DYS#" as just labels.

For each location, the test reports the number of those STR's, or "short tandem repeats".

There is an estimated "1 in 500" chance the number of repeats at a given location will lengthen or shorten with the next generation.

"Haplogroup R1b" says these Coffey's are European.

EXAMPLE: Y-DNA TEST RESULT

Here's an example of how this works for one family. This happens to be MY y-DNA, but all descendants of Edward show an identical, or nearly identical pattern:

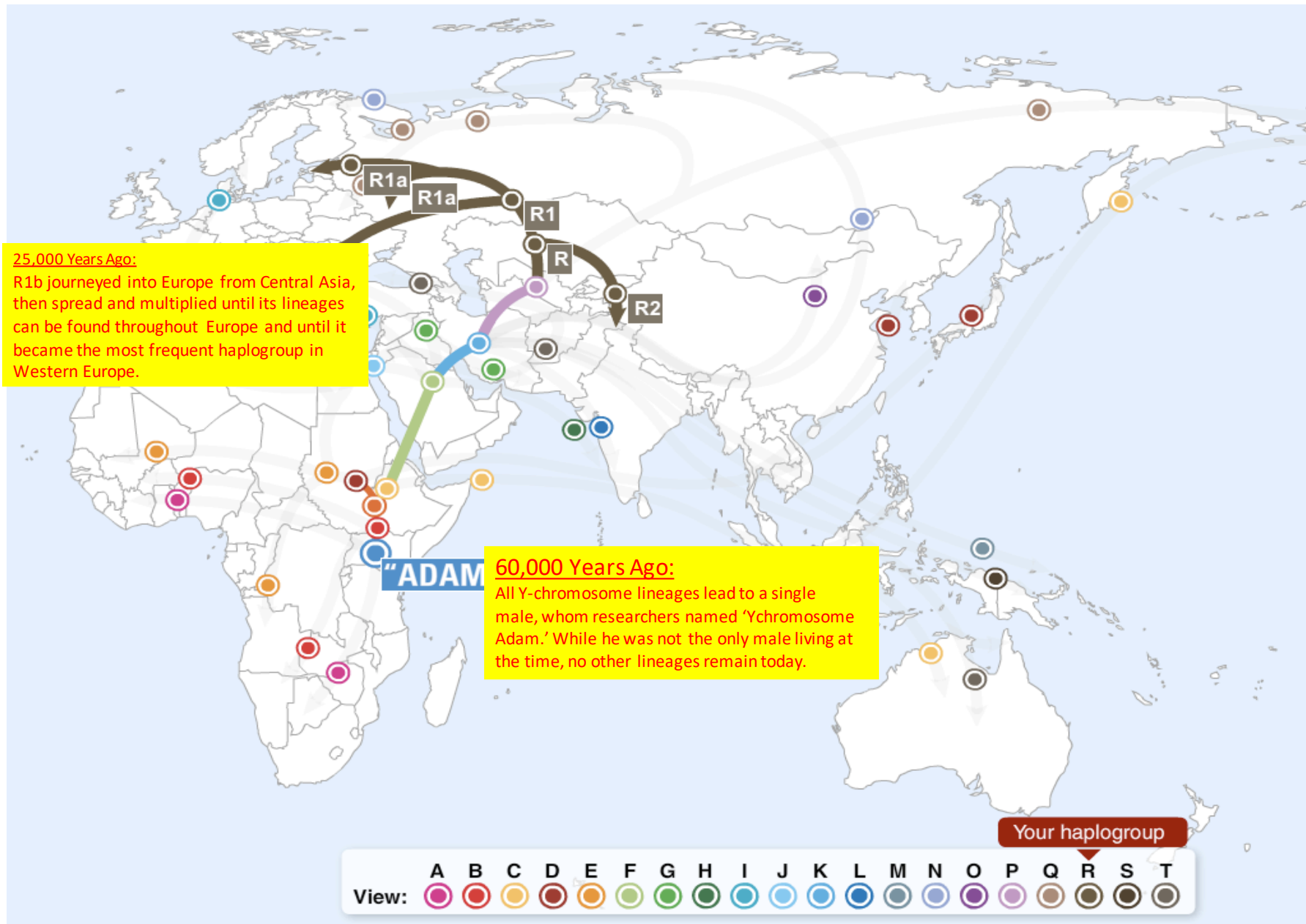
In the first test position, called "DYS 393", I have 13 STR's. In the second position, called DYS 390, I have 24 STR's. And so on down the list.

All Edward descendants have essentially the same pattern. You may once in a while see one marker that has changed, and possibly even two. But if the two tested people you are comparing also have the name "Coffey", this may be a significant match.

Generally we would like to see a test on at least 37 markers, and the tests go up to 700 markers. (If you're just getting started, a 37-marker test should be adequate to determine your general male-line ancestry.)

The testing service computers also look at the overall pattern of each sample, and conclude that this looks like "Haplogroup R1b". That simply indicates that the Edward descendants are part of a larger group, which includes much of the population of Europe.

MOST COFFEYS YDNA IS GROUP "R1b"



MOST COFFEYS' YDNA IS GROUP "R1b"

Let me briefly discuss this "Haplogroup", since it tells us something about the evolution of the Coffeys:

There are many different Haplogroups, as indicated by the list at the bottom of this page.

Scientists believe that all y-chromosome lineages eventually lead back to a single male, who lived about 60,000 years ago. They call him "Ychromosome Adam". He was not the only male living at the time, but all the other lineages failed to survive.

The original "Adam" DNA evolved through several different Haplogroups, and eventually led to the "R" group, which split off "R1", which became "R1b" by about 25,000 years ago. This is the most common group in Europe, and is particularly concentrated in Ireland.

We are using SNP testing to begin to break this into smaller and smaller sub-groups. More on that later.

SOMETHING YOU LEARN FROM ATDNA

Leo Coffey (AKA "FRED")

Europe 100%

Western Europe

● England, Wales, and Scotland 69%

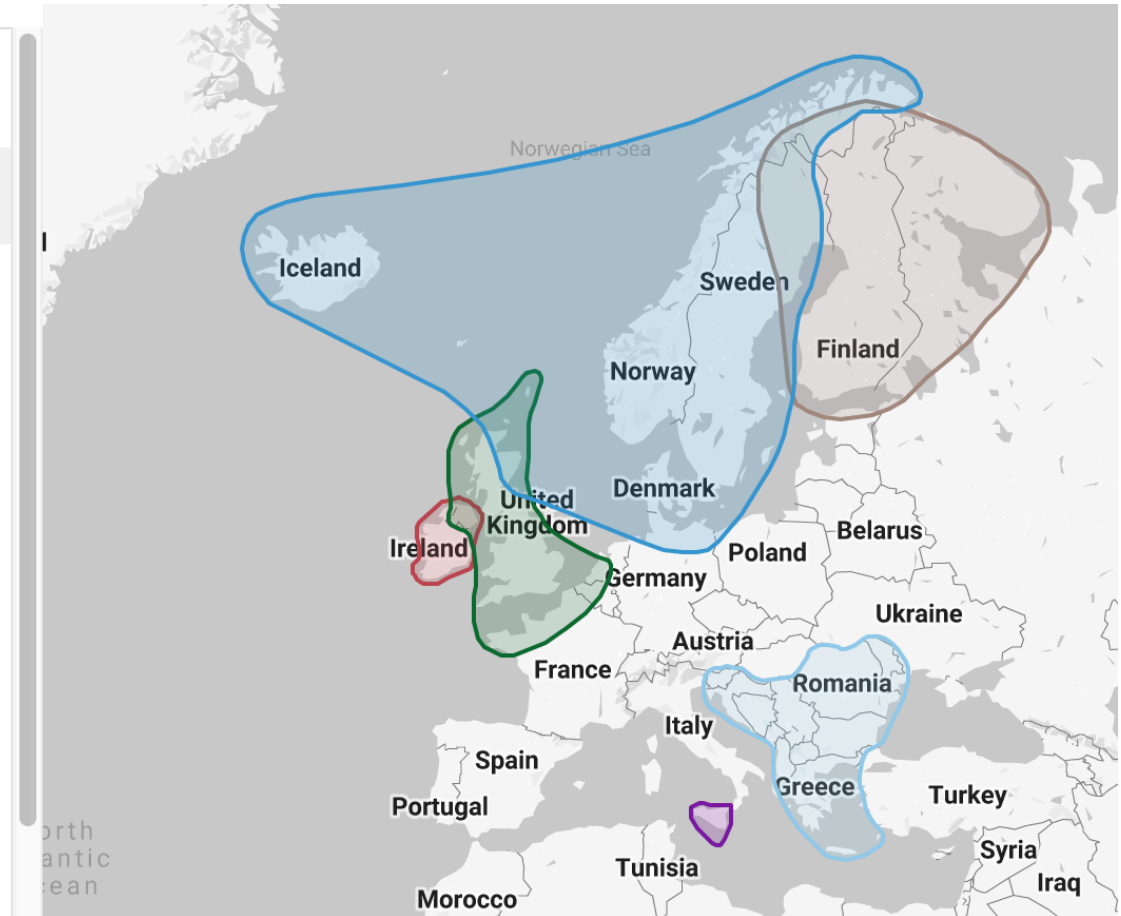
● Ireland 22%

● Scandinavia 6%

Southern Europe

● Greece & Balkans ⓘ <2%

● Malta ⓘ <2%



SOMETHING YOU LEARN FROM ATDNA

Enough on yDNA for the moment, let's turn to autosomal DNA:

There are several testing services doing autosomal DNA. This chart comes from FTDNA, but Ancestry and 23&Me present much the same thing. They are all running exactly the same test, they just put different spins on their presentation of results.

One of the interesting things you get from this test is an assessment of your overall Ethnic Makeup. My test says that I am, overall, 100% from European stock. And of that, I am 69% United Kingdom, and 22% irish.

Be aware, this is looking at ALL your DNA, NOT just the tiny parts that are "Coffey Male Line". ("Coffey" is absolutely an Irish name, but only an extremely tiny percentage of my total DNA comes from ancestor Edward Coffey.)

MATCHES FROM "FAMILY FINDER" FOR FRED

All (9006)

Paternal (0)

Maternal (0)

Both (0)

Filter

Name <i>i</i>	Ancestral Surnames <i>i</i>	Relationship Range <i>i</i> ↑	Shared DNA <i>i</i>	Longest Block <i>i</i>
<input type="checkbox"/> Dorothy Coffey Smith	?, ATEN, ALDRIDGE, AMICK, BADYN, BELL, ... View Details	Half Sibling Uncle/Aunt/Niece/Nep... Link on Family Tree	1858	130
<input type="checkbox"/> Charles Coffey	—	1st Cousin, Great/Half Uncle/Aunt/Niece/Nep... Link on Family Tree	976	88
<input type="checkbox"/> Karen Louise Smith	Cox, Dunham, Graham, Huntsman, Jones, Stelt... View Details	1st Cousin, Great/Half Uncle/Aunt/Niece/Nep... Link on Family Tree	975	123
<input type="checkbox"/> Ellen Hickman	ATEN, ALDRIDGE, ALLEN, An, AMICK, ... View Details	1st Cousin - 2nd Cousin, Great/Half... Link on Family Tree	709	115
<input type="checkbox"/> Martha Veasman	(?) Mill, ?, (?) Sorrency, Aten, Alexander, ... View Details	1st Cousin - 2nd Cousin, Great/Half... Link on Family Tree	345	69
<input type="checkbox"/> Roy E. Robinson	? Gore, ? Washington, (?) Mill, (?) Sorrency, ?, ... View Details	1st Cousin - 3rd Cousin, Great/Half... Link on Family Tree	257	69

MATCHES FROM "FAMILY FINDER" FOR FRED

Perhaps more useful, the atDNA test provides an assessment of people that the computer has identified as sufficiently closely matched to be your "cousin" at some level.

It gives me a list of 9006 matching people, ranging from very close (nobody can beat an identical twin) down to remote. That's rather an overwhelming number!

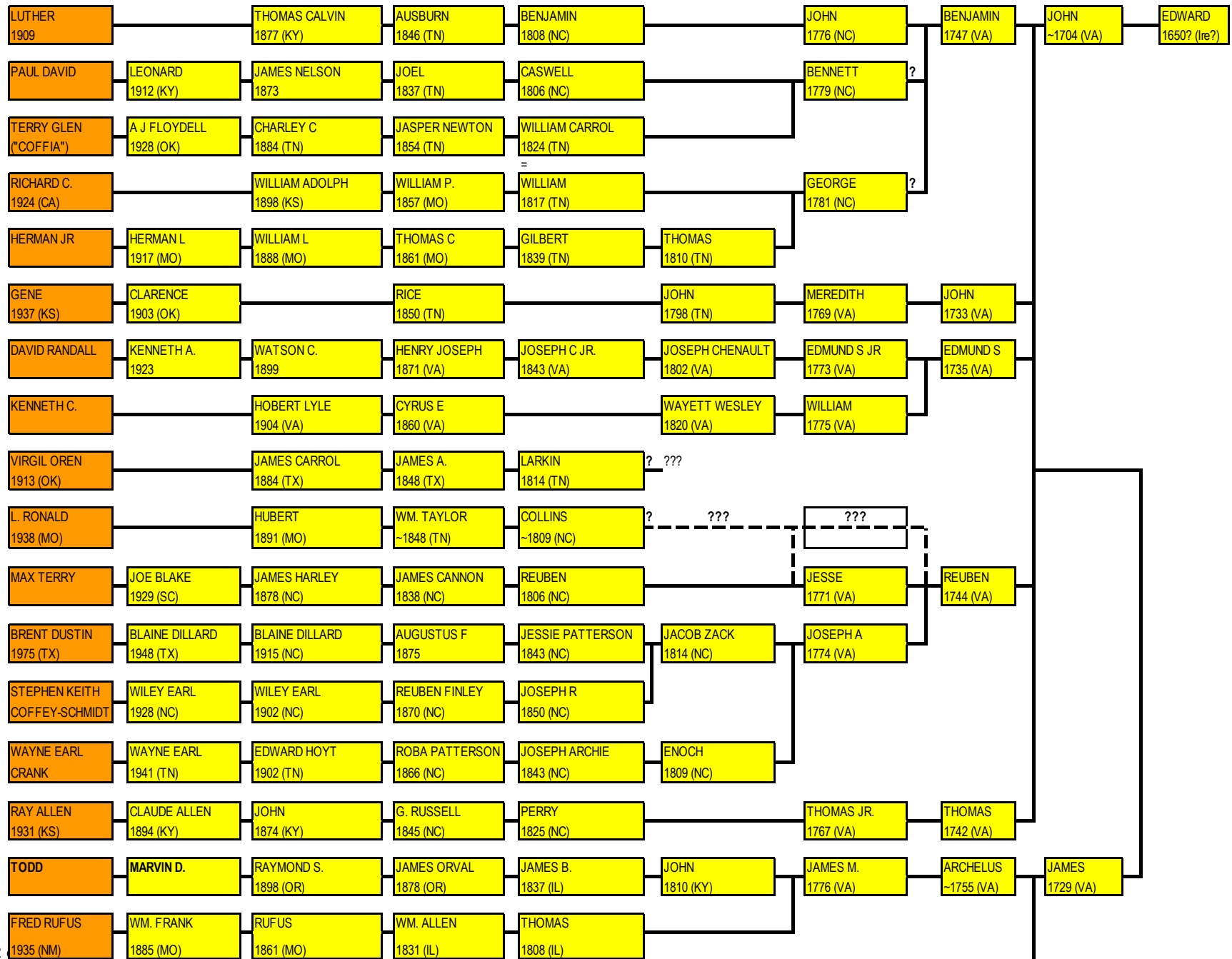
However here are the closest six people it has identified for me.

Number 1 is Dorothy (Coffey) Smith. She is actually my father's sister, and Family Finder suggests she might be my aunt. Got that right! Number 3 is Dorothy's daughter, and it suggests I'm looking at a first cousin. Got it!

All of the remaining people on this page are actually KNOWN cousins of mine, plus many more beyond those. This is Tim Peterman's fault. He is co-administrator of our DNA project, and does very extensive work on atDNA. My aunt Dorothy is one of his favorite subjects, because she was from the closest tested generation to our core ancestor pool.

(Oh, I can tell it to find my match to Tim Peterman. FTDNA says he looks like a "2nd to 4th Cousin". He's actually my "Quadruple 3C1R".)

EXAMPLE: EDWARD GROUP YDNA CONNECTIONS



EXAMPLE: EDWARD GROUP YDNA CONNECTIONS

The "Coffey Cousins" have a huge database on descendants of Edward Coffey. The above chart is just a small part of the genealogies we track for Edward's descendants. Don't try to read the details, the purpose here is just to show how I display genealogies for people who have done y-DNA testing:

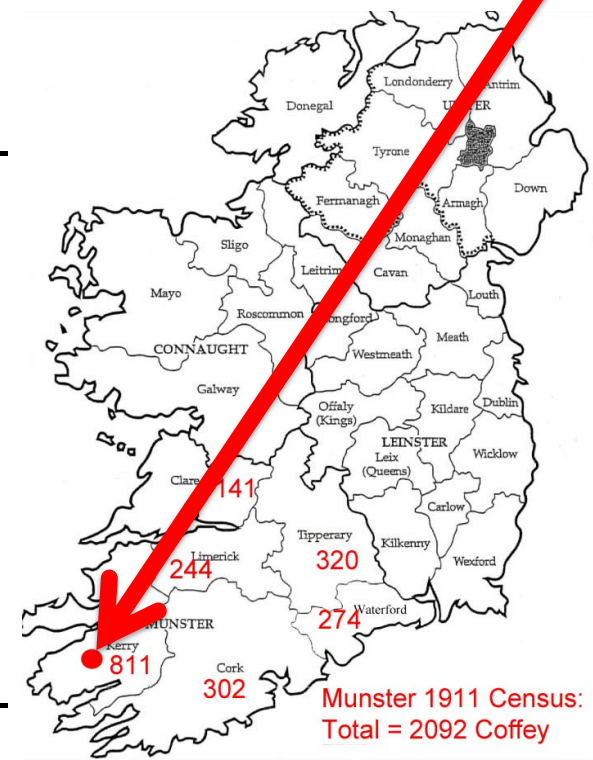
The people listed on the far left are some of the tested people. Each has given me his assessment of HOW he descends from Edward, per the lines of yellow boxes. All of them ultimately arrive back to Edward, on the far right.

The test results don't tell me anything about the individual path to Edward. Some aren't fully known, and many have question marks. The yellow paths all came from the participants.

But one thing is NOT in doubt. All of these people descend from Edward by SOME path. There is NO DOUBT of that. The DNA tells us that much.

IRELAND TOUR: "MUNSTER" GROUP

MICHAEL (KERRY, IRE)	MICHAEL (KERRY, IRE)	MICHAEL 1893 (KERRY)	MICHAEL 1864 (KERRY)	?	?	?	?	?
AEDAN D C 1961 (IRE)	D MANUS G 1935 (IRE)	H DIARMID J 1888 (DUBLIN)	GEORGE 1857 (DUBLIN)	JAMES CHARLES 1815 (DUBLIN)	EDMUND 1786 (DUBLIN)	EDMUND (KERRY, IRE)	DARBY (KERRY, IRE)	JOHN (KERRY, IRE)
JAMES M. (JR) 1965 (NY)	JAMES M (SR) 1942 (NY)	JAMES J. 1896 (PA)	MICHAEL 1867 (KERRY, IRE)	?				
PAUL BRANCKY	LEO BRANCKY 1920 (IL)	<< LEO ADOPTED SEE NOTE >>	? FRANK COFFEY 1868 (IRE)	?				
STEPHEN 1951 (CA)	HERBERT 1924 (CA)	HERBERT 1897 (CA)	WILLIAM 1869 (CA)	WILLIAM 1845 (NY)	JAMES 1804 (IRELAND)	?		
DANIEL DOMINIC	DANIEL MICHAEL 1947 (NY)	DANIEL F JR. 1920 (NY)	DANIEL F SR. 1883 (NJ)	MICHAEL 1843 (KERRY, IRE)	?			
RBT. EUGENE 1939 (MI)	EUGENE C. 1913 (MI)	DANIEL FRANCIS 1870 (MI)	DANIEL F. 1841 (IRE)	DANIEL (IRELAND)	?			
JAMES (JR)	JAMES EDWARD 1913 (NY)	WILLIAM 1877 (NY)	WILLIAM 1845 (CORK, IRE)	?				
JOHN JOSEPH 1948 (MA)	WILLIAM EDWARD 1913 (MA)	JEREMIAH C 1874 (MA)	JAMES 1849 (IRE)	?				
DAN ALAN ROSS 1956 (TX)	DANIEL R ROSS 1923 (TX)	DANIEL W ROSS 1896 (OK)	CHARLES ROSS 1864 (MS?LA?)	?				
WILLIAM EDWARD 1922 (PA)	JOHN CHRISTOPHER 1884 (CORK, IRE)	JOHN (IRE)						
MARTIN JAMES	MARTIN ALEXANDR	MARTIN ALEXANDR 1901 (CT)	JEREMIAH JOS. 1863 (CORK, IRE)	CORNELIUS (IRELAND)	?			
ALAN DALE (OK)	LAWRENCE D. 1929 (OK)	HUBERT DENSON 1905 (OK)	JOEL W.L. 1874 (AL)	JOHN JAMES 1851 (AL)	?	JOEL W. 1826 (AL)	?	?



IRELAND TOUR: "MUNSTER" GROUP

Let's leave Edward for a bit, and talk about other unrelated families, and where they came from in Ireland.

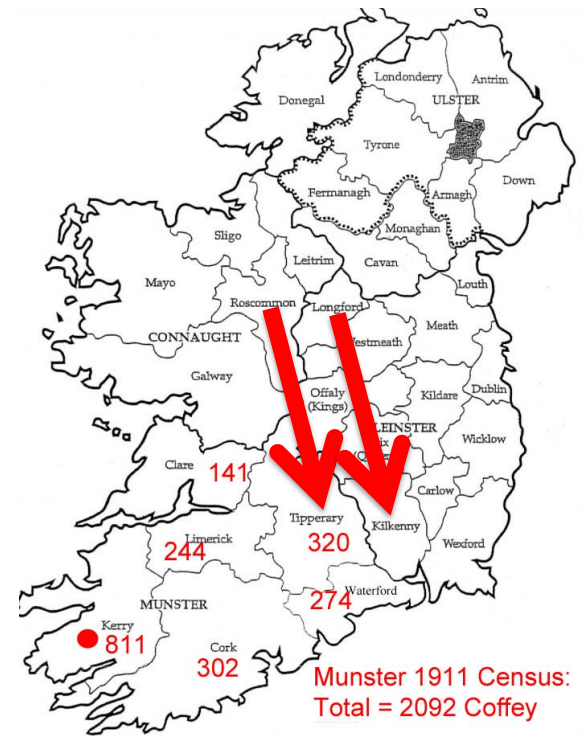
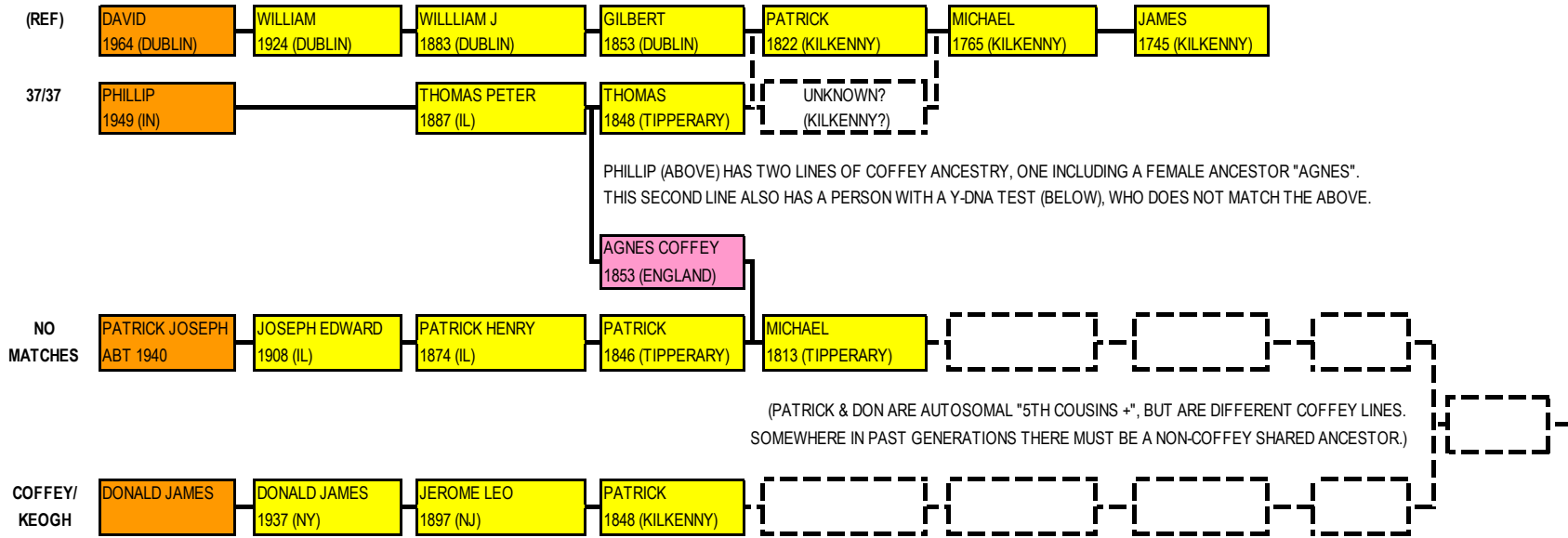
One group, with DNA matching individuals, is our "Munster" group. Munster is an ancient area in Ireland, to the south west. The 1911 census tells us that there were 2092 people with the Coffey name living in Munster. And the population for each county is shown in red.

The arrow points to County Kerry, and we think that is one of the most ancient Coffey homelands. And the top two people on this chart trace their ancestors to the area of the red dot. And the top person is a farmer, who has been on his family land for as far back as he knows.

In Irish law, the oldest son always inherits the farm. If not so, the farm would gradually be divided down to nothing. So if there's a big family, where do the big brother's siblings go? Sooner or later, they have to leave.

And where to they go? Many would go to neighboring counties, to make their way as best they can. And that would be a significant factor in the Coffey population of these adjacent counties.

IRELAND TOUR: "TIPPERARY/KILKENNY" GROUP



IRELAND TOUR: "TIPPERARY/KILKENNY" GROUP

Staying in the same general area, here are three genetically separate family lines, but with interesting connections:

The first two men, per the DNA, are related. The first one, David, still lives in Ireland. And yDNA combined with atDNA leaves only a narrow window within which the two may connect - see the dotted line and box.

But one of the ancestors of Phillip, Thomas Coffey, married a lady named Agnes Coffey. We managed to follow Agnes' ancestry down to a present-day male-line descendant, Patrick Joseph Coffey, and his yDNA proved that Agnes was NOT a relative of her husband Thomas.

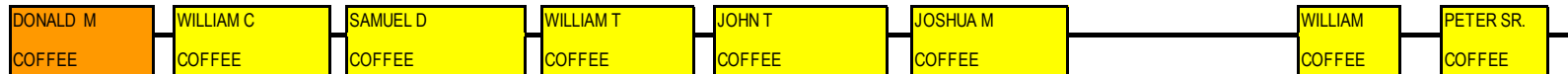
And then atDNA showed that Patrick had a match to the final person, Don. But not the Coffey male line. Somewhere they had a shared ancestor.

And the really interesting thing is that DON is related to our Edward Group! (Don't ask me how to determine the actual connection! I wouldn't have a clue how to go about it!)

IRELAND TOUR: THE "BIG-Y" GROUP

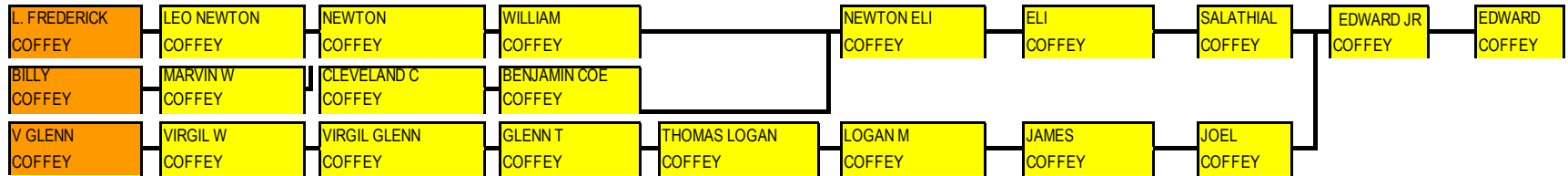
(BLOCK TREE: R-Y 65461 >>> R-Y19967

(The "Peter Coffee" group)

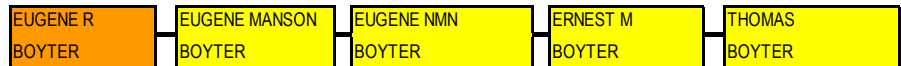


(BLOCK TREE: R-Y 65461 >>> R-Y19967 >>> R-Y46776

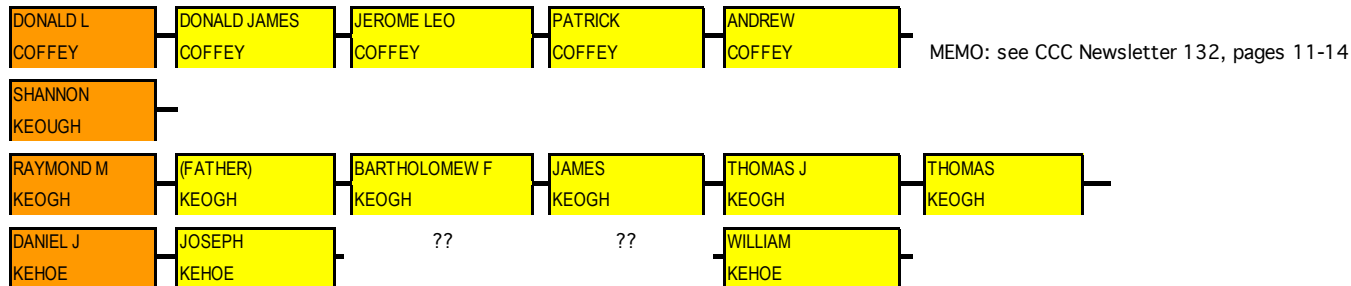
(The "Edward Coffey" group)



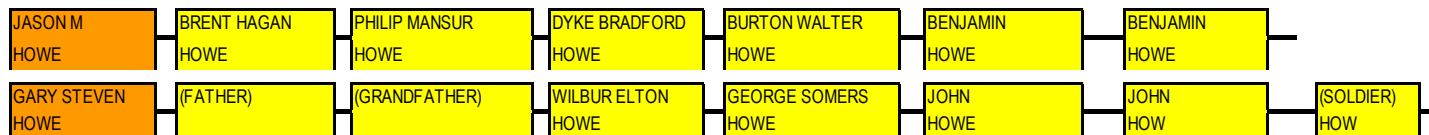
(BLOCK TREE: R-Y 65461 >>> R-FTA58713



(BLOCK TREE: R-Y 65461 >>> R-FTA58713 >>> R-Y20216



(BLOCK TREE: R-Y 65461 >>> R-FTA58713 >>> R-Y20216 >>> RFT257666



IRELAND TOUR: THE "BIG-Y" GROUP

Back at the beginning of this discussion I explained what a "SNP" (Single Nucleotide Polymorphism) was, And said I would bring it up again. This is explored via what is called a "Big-Y" test, which looks at the equivalent of up to 700 markers.

All of our original early work was done with various levels of "STR" testing. This proved our theory that the patriarchs Edward Coffey and Peter Coffee were related. But we began to see a lot of matches to other surnames. They had to all be connected somewhere back in Ireland!

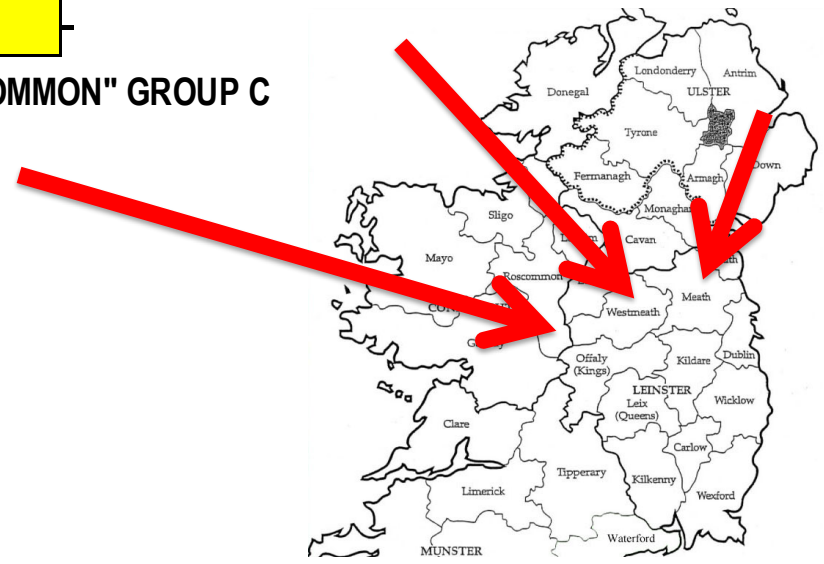
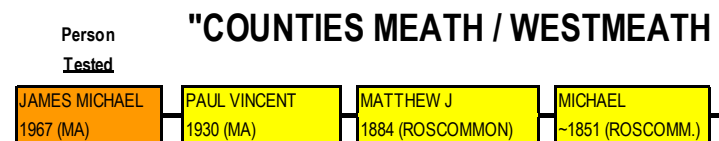
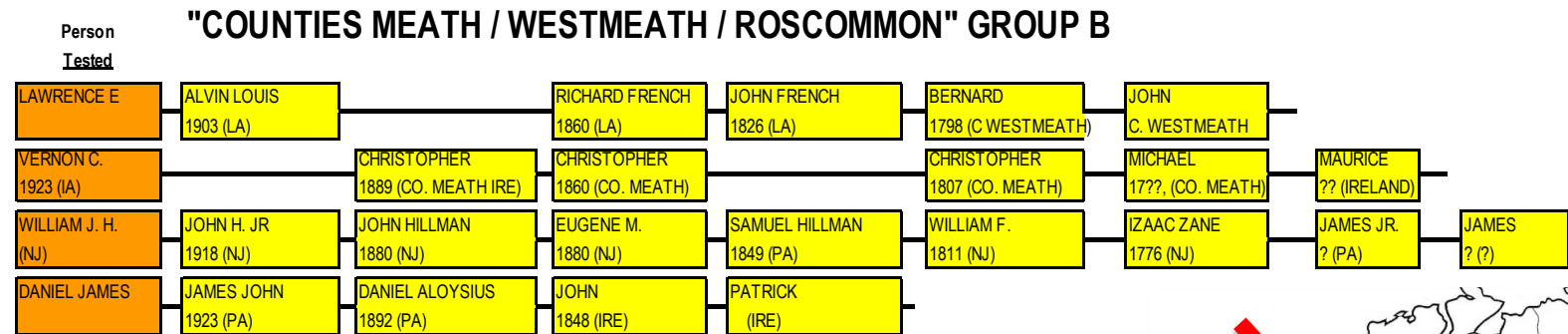
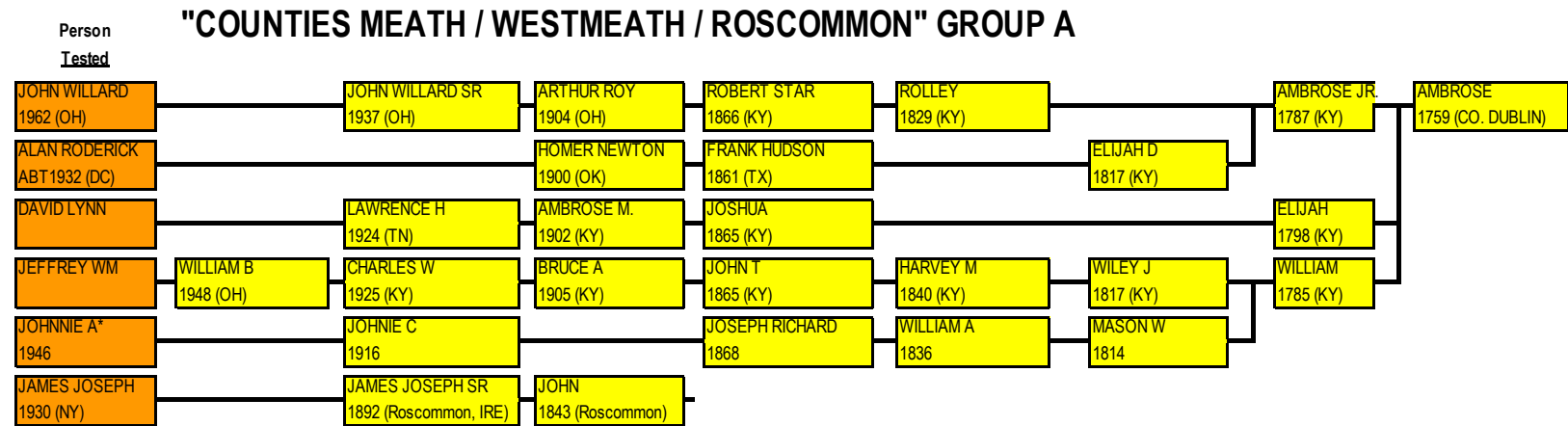
We now have 11 men who have done a "Big-y" test. You can see their various surnames in the orange boxes above. We are clearly all cousins! Some of them gave me their genealogies, shown in the yellow boxes above. You will see that the first volunteer at the top of this list was a descendant of "Peter", and the next three were descendants of "Edward". (I'm one of those three.)

ALL of these 11 men tested positive for SNP "R-Y 65461". And you will see that the Peter line had a subsequent mutation to "R-Y 19967". And so did the Edward line. But then it gets interesting! The Edward line later had a second mutation that led to "R-Y 46776". The combined MRCA (Most Recent Common Ancestor) for Edward/Peter was a "R-Y 67461", and the Edward line's separate MRCA first appeared later.

And the final 7 people did NOT descend from the Peter/Edward MRCA. And the Peter/Edward group did NOT descend from any of their lines. The "GRAND MRCA" of all 11 men was an "R-Y 65461". And we have no clue what his surname was (or if it was before surnames became common).

And of interest, there is a "Donald Coffey" who is part of one of the "Keough/Keogh/Kehoe" groups. He is clearly NOT descended from the MRCA of Peter and Edward. He probably actually descended from a Keogh.

IRELAND TOUR: "MEATH/WESTMEATH" GROUP





IRELAND TOUR: "MEATH/WESTMEATH" GROUP

Enough for southern Ireland. Let's move our attention up to the middle.

Here's another group, with 3 subgroups, that have origins in the counties Meath and Westmeath area. And this is believed to be an ancient Coffey homeland.

Per DNA, all are related, but the relationships are closer within the subgroups.

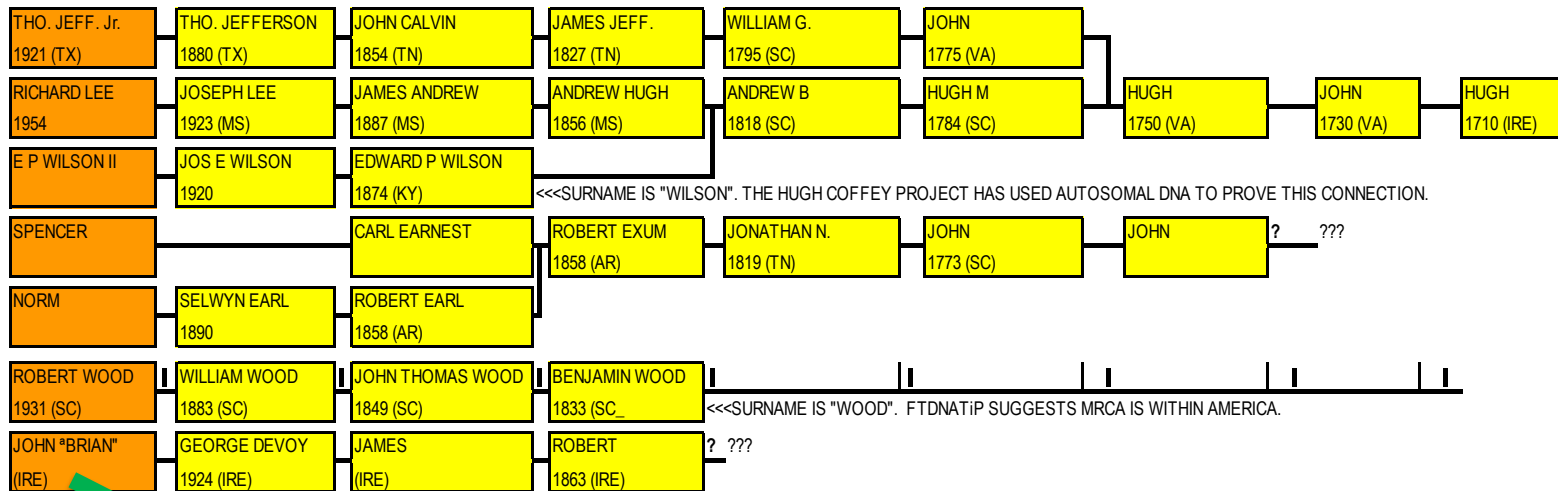
Notice that five of the people tested in the first group lead back to an "Ambrose Coffey". This Ambrose has long been known to Coffey genealogists, and he is famous for being an Irish immigrant who joined Daniel Boone in fighting the Indians.

Now we know, per DNA, that this Ambrose is NOT related to Edward. (There is an "Ambrose" in the Edward line, but that's a different person!)

The last person on this page, James Michael, knew his great grandfather was an immigrant from County Roscommon who settled in Massachusetts. Roscommon is believed to be an ancient Coffey homeland, and I was surprised when the DNA said "Meath".

But then I looked at the known exact location in Roscommon. It is right on the border with Westmeath, and the nearest significant village was in Westmeath.

IRELAND TOUR: "HUGH" GROUP



IRELAND TOUR: "HUGH" GROUP

One of the long-known Coffey groups in America were the descendants of immigrant Hugh Coffey. But we did not know where in Ireland Hugh came from.

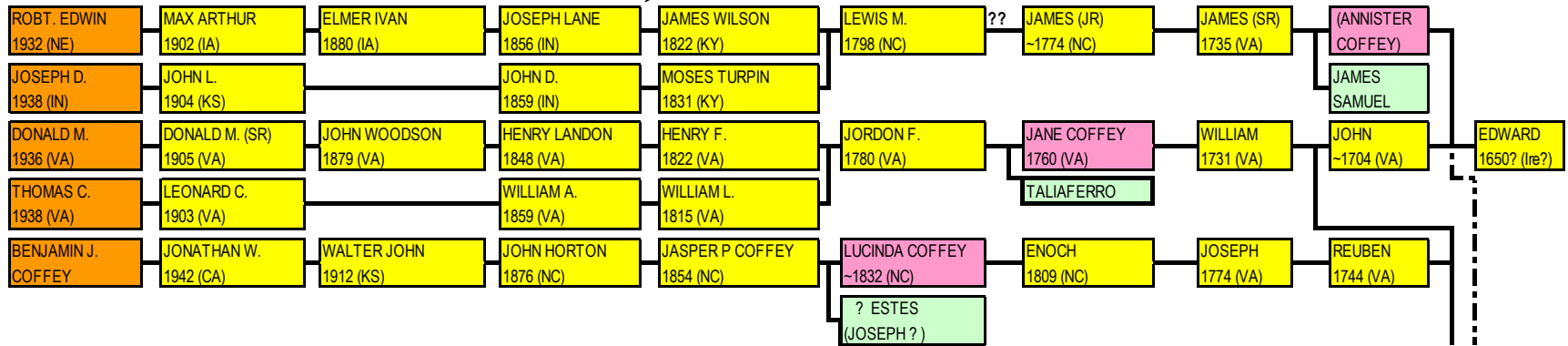
But now we have a major breakthrough! We got a y-DNA test on John "Brian" Coffey who lives in Portavogie on the Ards Peninsula in County Down Ireland.

We had long known there were Coffey lines on Ards. They were Presbyterian, and fished in the waters between Ireland and Scotland. But we had trouble persuading one to do a y-DNA test. But we finally succeeded!

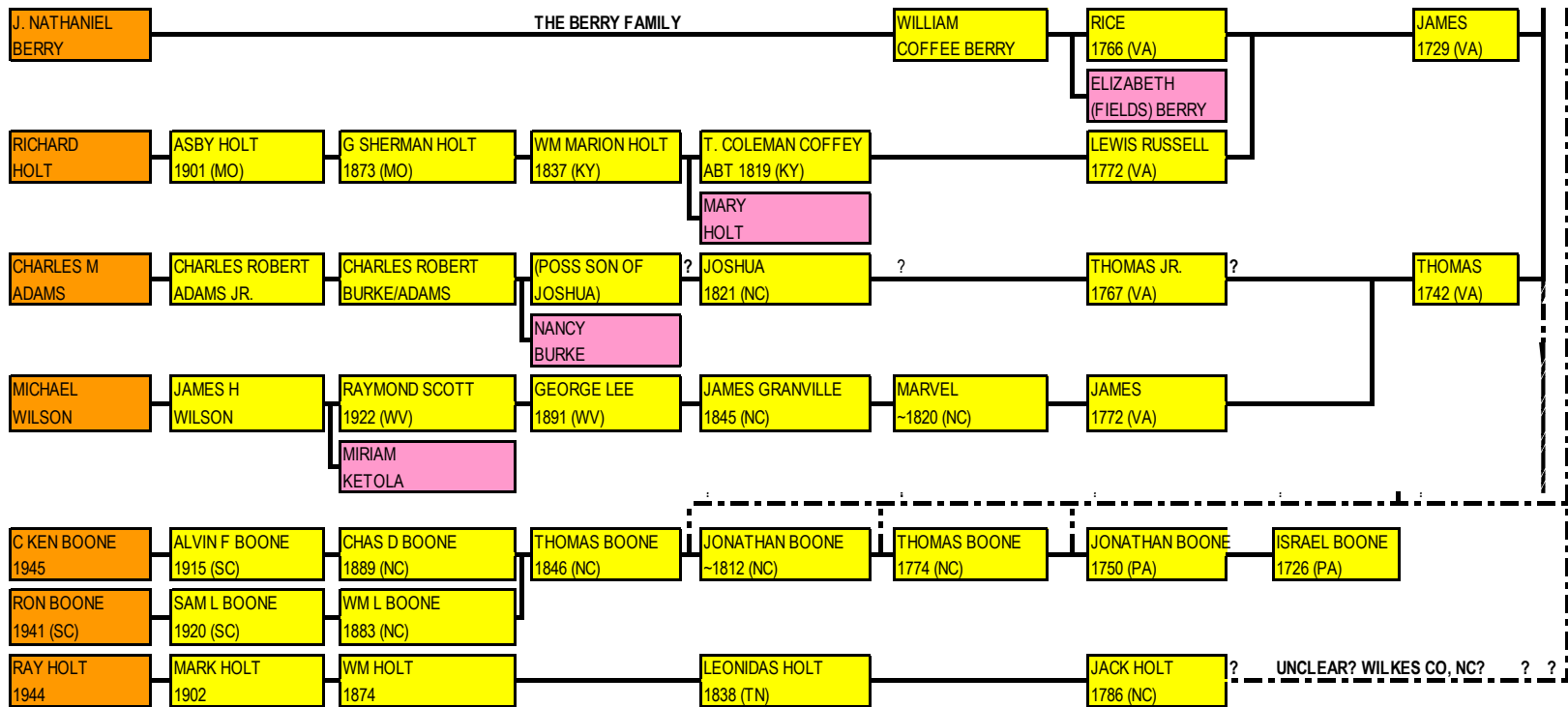
Terri Stern is Administrator of the Hugh Coffey Project. She now has a major study under way to pin down details on the genealogical connections.

EDWARD AMERICA: EVOLUTION OF DIVERSITY

COFFEY NAME, NON-COFFEY DNA



COFFEY DNA, NON-COFFEY NAME



EDWARD AMERICA: EVOLUTION OF DIVERSITY

I've shown you there's a lot of "Coffey Diversity" coming from Ireland. I want to return to "Edward", to make a point about HOW much of this might have come about:

Edward arrived in America only a little over 300 years ago. But from that one-person starting point, we now find America has several Coffey lines that have the Coffey name, but non-Coffey DNA. And several lines that have Edward DNA, but not the Coffey name.

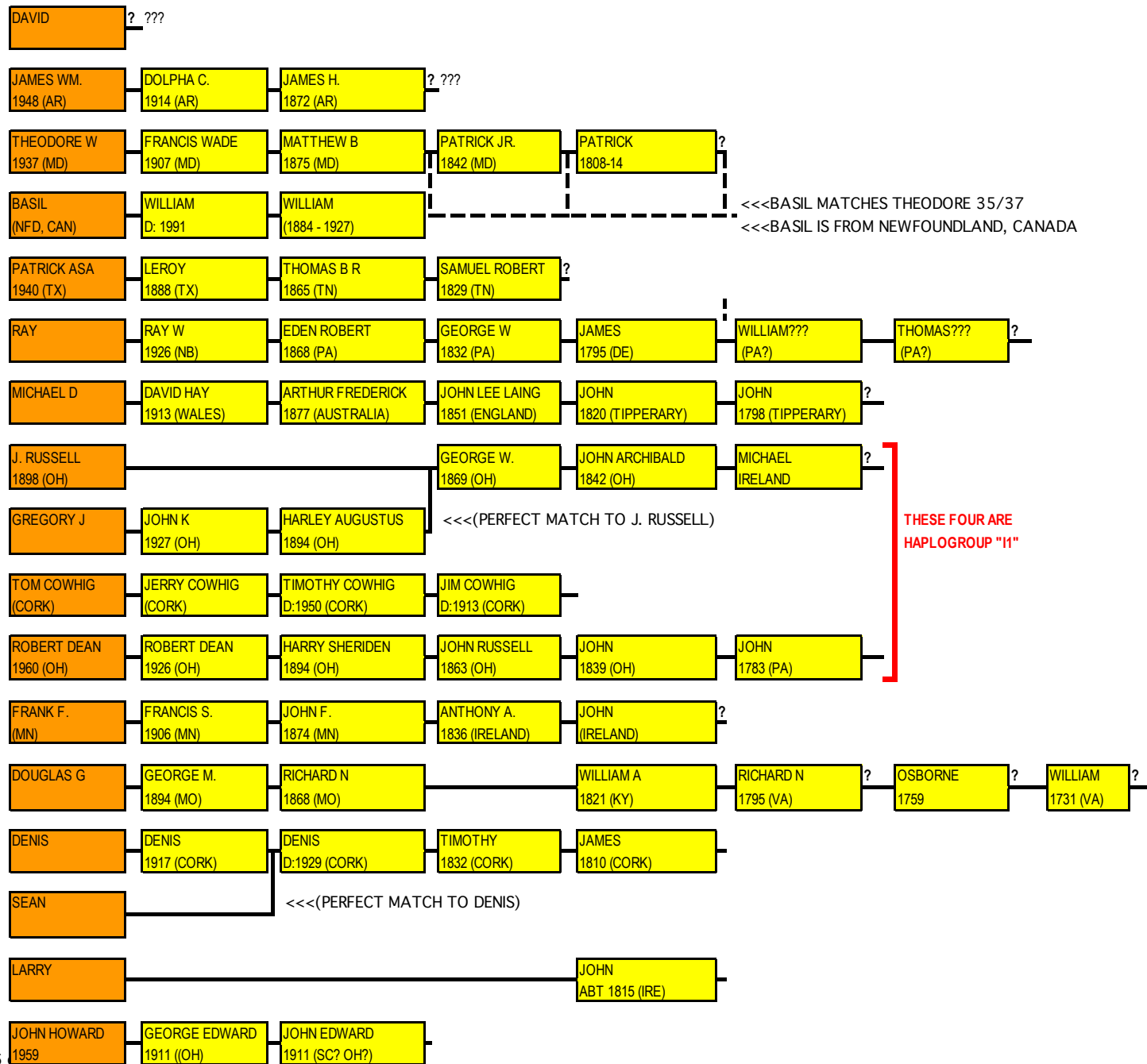
We know generally how each of these situations came about. But if we were starting a Coffey DNA project here WITHOUT knowing the history, we would quickly conclude we already had as much unexplained diversity in the USA as we now see in Ireland!

I'm only going to explain the top line on this page, for an interesting reason:

Edward had a daughter, Annister, who had a son named James, born out of wedlock. The Coffey genealogists have long known about this, because poor Annister got hauled into a Virginia court for her indiscretion. And via DNA testing, we have determined the father of James was almost certainly one "James Samuel". This is kind of like the famous Thomas Jefferson and his slave Sally Hemming case, but actually EARLIER.

The interesting thing is that this is the ancestral line of Leonard Coffey. One of the tested people is his brother. Leonard was the founder of the Coffey Cousins' Clearinghouse.

"UNKNOWN" COFFEY "GROUPS"



"UNKNOWN" COFFEY "GROUPS"

In conclusion, I want to note we have quite a number of individuals, or pairs, that we cannot connect to anyone else via DNA. These of course have the potential to grow into new "Coffey lines" over time.

Direct your attention to the second person from the bottom. Here the tested person is Larry Coffey, who has served as president of the Coffey Cousins Clearinghouse.

Larry has a very solid connection to an immigrant, John Coffey, who arrived from Ireland about 1850-53 and settled in Mercer County, New Jersey.

Now we're waiting for someone to come forward for DNA testing, who has a match to Larry, and who can track the family ancestry back into Ireland!