

## Chapter 23

### DNA Triangulation – Genetics Supporting Genealogy

#### ***Introduction***

My paternal grandparents, Ray Miller Oakley (1876-1948) and his wife Kate Cameron Burks Oakley (1873-1954), were the first generation of the ***Oakley*** family to settle in Quincy, Illinois, and to raise their children there. Multiple generations of the descendants of Ray and Kate have their roots in Quincy, and while descendants of this couple now live literally from coast-to-coast, I refer to the extended group of ***Oakley*** descendants as the “Quincy Oakleys”.

Over the past few years, I have conducted research on the genealogy of the “Quincy Oakley” family. I am particularly interested in genetic genealogy – that is, using the science of DNA testing to help support and ultimately confirm the genealogical record.

Every once in a while, I get lucky and the stars align – and this narrative provides an excellent example of the power of genetic genealogy. Read on!

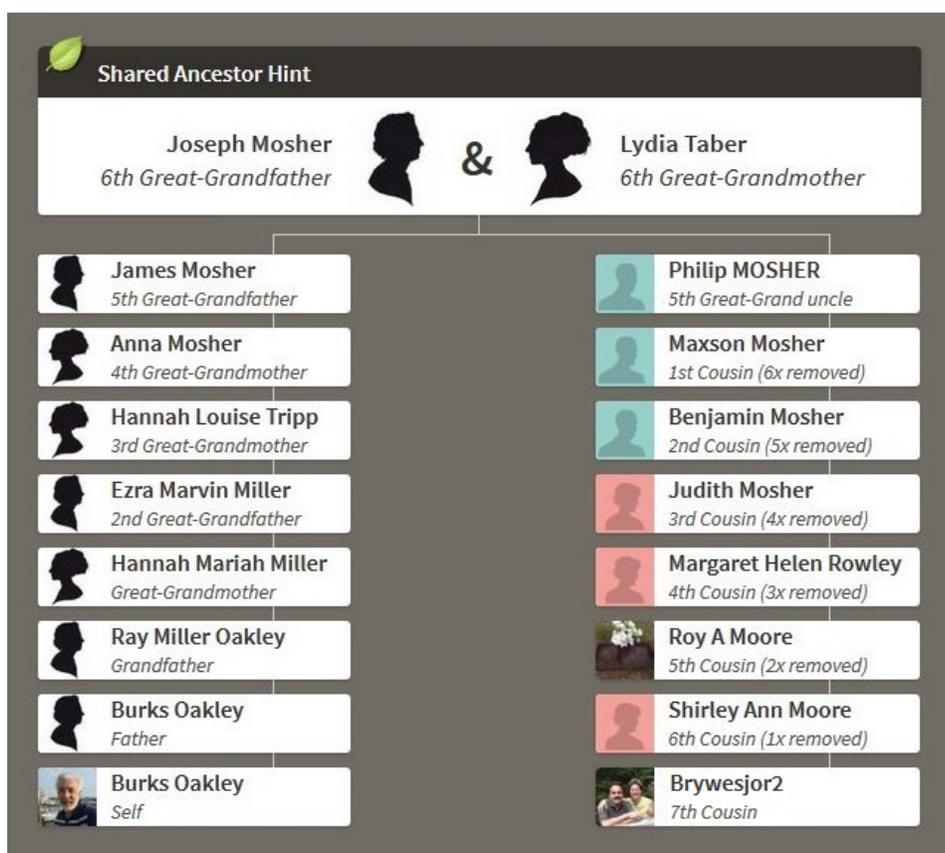
#### ***Brywesjor2 – Dick Wolfe***

In the late summer of 2017, I learned about a new DNA match that I had on the Ancestry.com website with a man having the username of ***Brywesjor2***. I later found that this man’s name is Dick Wolfe, and his username comes from the first three letters of each of his sons’ first names. According to Ancestry.com, Dick and I share 36 centiMorgans<sup>1</sup> (cM) of DNA on two segments. In addition, we both have family trees on Ancestry.com showing that we are each descended from Joseph Mosher (1670-1754) and his wife Lydia Taber (1673-1754). Lydia is an important ancestor of the “Quincy Oakleys”, since she was a grand-daughter and great-granddaughter of three Pilgrims who came to America on the *Mayflower* in 1620 (see Appendix II), and thus she is one of the links in our path back to the *Mayflower*.

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<sup>1</sup> A centiMorgan (abbreviated cM) is a measure of the size of a matching segment of DNA; very roughly, one cM corresponds to a DNA match that is one million base pairs in length.

Here is my Shared Ancestor Hint with Dick Wolfe:



I am descended from the Mosher-Taber couple through their son James Mosher (1704-1783), while Dick Wolfe (**Brywesjor2**) is descended from them through their son Philip Mosher (1697-1760). This chart shows that Dick and I are seventh-cousins.

Cousin Dick also has his DNA profile on the free GEDmatch.com website, which has powerful software tools that permit users to make detailed DNA comparisons at the chromosome level. Using these tools, I did a direct comparison of our two DNA profiles, and I found that we have two matching segments on Chromosome 10. The following table shows the exact locations of our match along the chromosome:

Comparing Kit A122463 (Burks Oakley II) and A458540 (*brywesjor)			
Chr.	Start location	End Location	Centimorgans (cM)
10	98,806,289	120,727,246	24.9
10	128,897,149	135,297,961	17.1
Estimated number of generations to MRCA = 4.2			

It is interesting to note that the software algorithms on GEDmatch.com predict that our Most Recent Common Ancestor (MRCA) is 4.2 generations in the past (the last line in the table above). If our relationship really does come about because we both are descended from Joseph Mosher and Lydia Taber, then our actual MRCA is 8.0 generations in the past.<sup>2</sup> In other words, the large size of our DNA match fooled the algorithms into thinking that we are much more closely related than 7<sup>th</sup>-cousins.

I next ran the software on GEDmatch.com to see if anyone else in their database matched BOTH Dick Wolfe and me. The first thing I found was that my daughter, Amy Oakley, and my first-cousin once-removed, Mark Eidem, both share this DNA match on Chromosome 10.



0-Dick Wolfe, 1-Amy Oakley, 2-Burks Oakley II, and 3-Mark Eidem

This diagram shows how Amy, Burks, and Mark all match Dick Wolfe. Note that we all have two matching segments on Chromosome 10. The color of the bar indicates the size (length) of the matching segment – yellow bars indicate that the matching segment is larger than the matching segments represented by the green bars.

This new result is significant in that it extends the DNA match back another generation in the Oakley family. Since Mark and Amy are 9 generations removed from Joseph Mosher and Lydia Taber, while Dick is 8 generations removed, their actual MRCA is 8.5 (the average of 8.0 and 9.0).

<sup>2</sup> To calculate the actual MRCA, simply count back the number of generations until you reach the common ancestor. In this case, Joseph Mosher and Lydia Taber are eight generations back for both *Brywesjor2* and me, so the actual MRCA is 8.0.

I also used the software tool on the GEDmatch.com website to examine the DNA match between Amy and Dick Wolfe:

Comparing Kit A059368 (*Amy.Oakley) and A458540 (*brywesjor)			
Chr.	Start location	End Location	Centimorgans (cM)
10	98,245,941	120,729,439	25.7
10	128,902,668	135,218,153	17.1
Estimated number of generations to MRCA = 4.2			

And I also examined the DNA match between Mark Eidem and Dick Wolfe:

Comparing Kit A484508 (Mark Eidem) and A458540 (*brywesjor)			
Chr.	Start location	End Location	Centimorgans (cM)
10	106,414,911	120,722,478	18.6
10	128,954,183	134,896,893	16.8
Estimated number of generations to MRCA = 4.3			

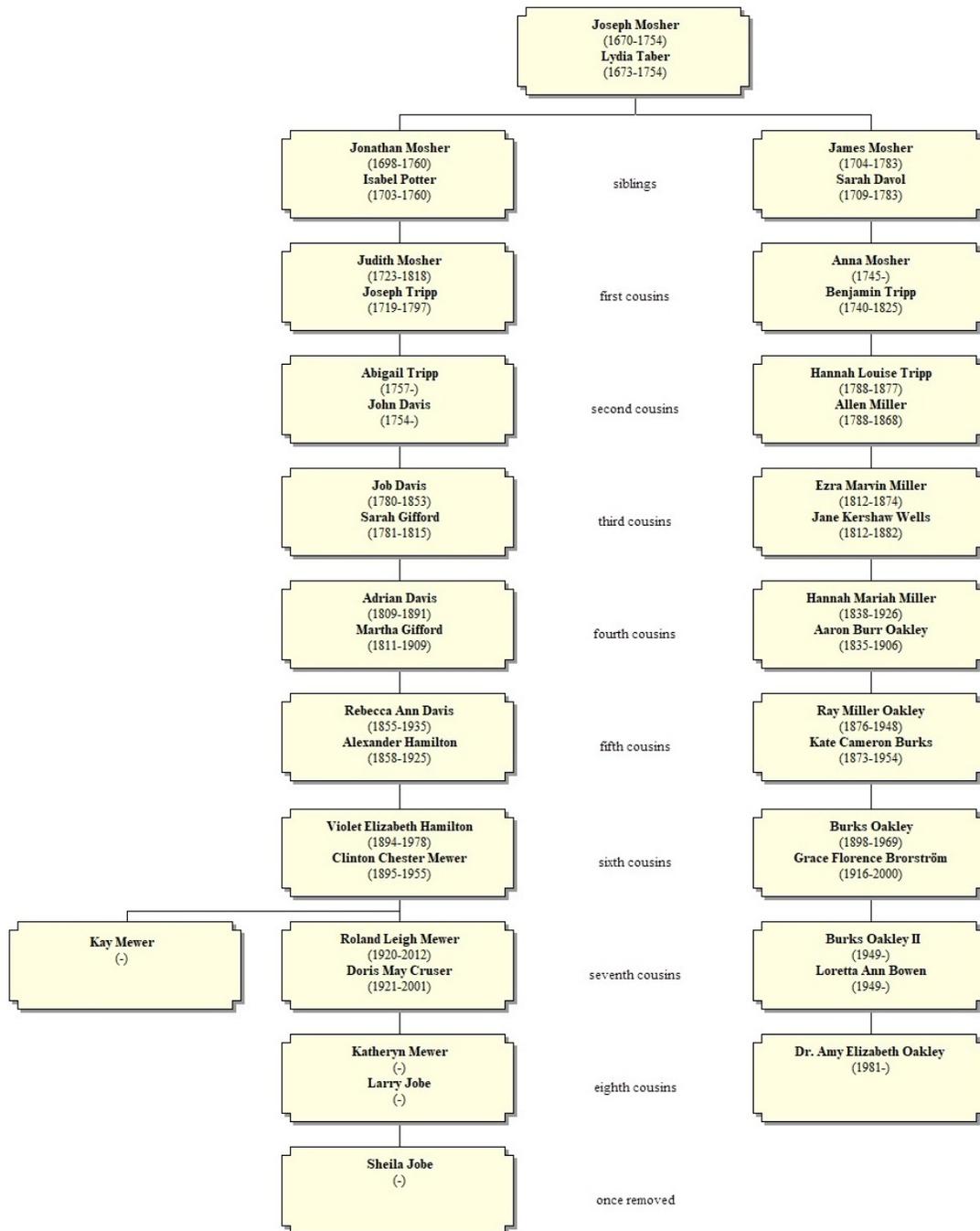
Again, these DNA matches are larger in size than would be expected for such distant cousins, leading the GEDmatch.com algorithms to estimate that their MRCA's are 4.2 (Amy-Dick) and 4.3 (Mark-Dick), while their actual MRCA's are both 8.5.

It would be great to find other descendants of Joseph Mosher and Lydia Taber who share this match with us on Chromosome 10. Although there are indeed others in the GEDmatch.com database who share this DNA match with us, many of them do not have family trees that go as far back as the 1600's, so they aren't helpful. However, I have identified several more individuals on GEDmatch.com who fit the bill, and those individuals help to build the case that this DNA match on Chromosome 10 really does come from Joseph Mosher or Lydia Taber, or of course, from one of *their* ancestors.

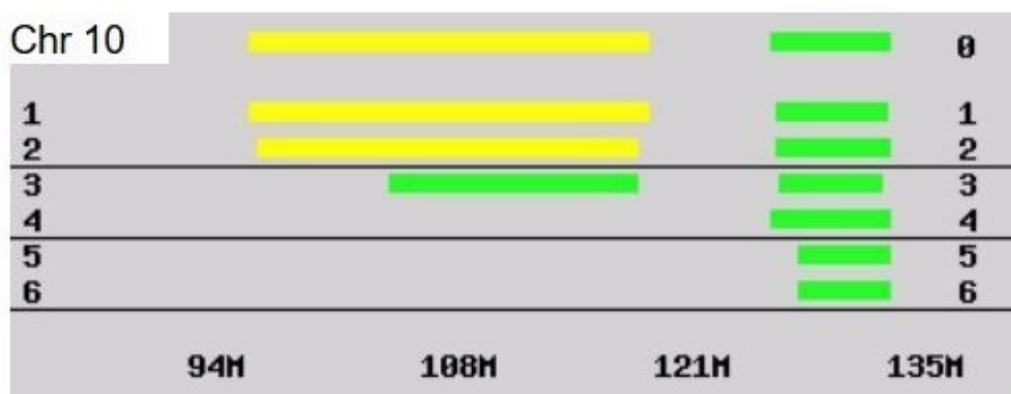
If the suspense is getting to be too much for you, please feel free to take a few deep breaths at this point...

## The Mewer Family Line

The next three people in the GEDmatch.com database who match both Cousin Dick (*Brywesjor2*) and me on Chromosome 10 are Kay Mewer Spear, her niece Katheryn Mewer Jobe, and Katheryn's daughter Sheila Jobe. They are descended from Joseph Mosher and his wife Lydia Taber through their son Jonathan Mosher (1698-1760), as shown in the following chart:



The following diagram shows our DNA matches on Chromosome 10:



0-Dick Wolfe, 1-Amy Oakley, 2-Burks Oakley II, 3-Mark Eidem, 4-Kay Mewer Spear, 5-Katheryn Mewer Jobe, and 6-Sheila Jobe.

It is immediately apparent that the Mewer family members (rows labeled 4, 5, and 6) are missing the large segment that Amy, Burks, and Mark share with Dick Wolfe (the longer bars at the left in the diagram above). However, the Mewers do have the smaller segment (at the right in the diagram above) that each of the others have. And this segment is significant in size – Burks and Kay share 17.8 cM, while Dick and Kay share 18.0 cM.<sup>3</sup>

Once again, the DNA matches are much larger than would be expected for such a distant relationship. Here is a direct comparison of Sheila and Amy, who are eighth-cousins once-removed:

Comparing Kit A059368 (*Amy.Oakley) and M744267 (Sheila Jobe)			
Chr.	Start location	End Location	Centimorgans (cM)
10	130,208,207	135,218,153	13.5
Estimated number of generations to MRCA = 5.0			

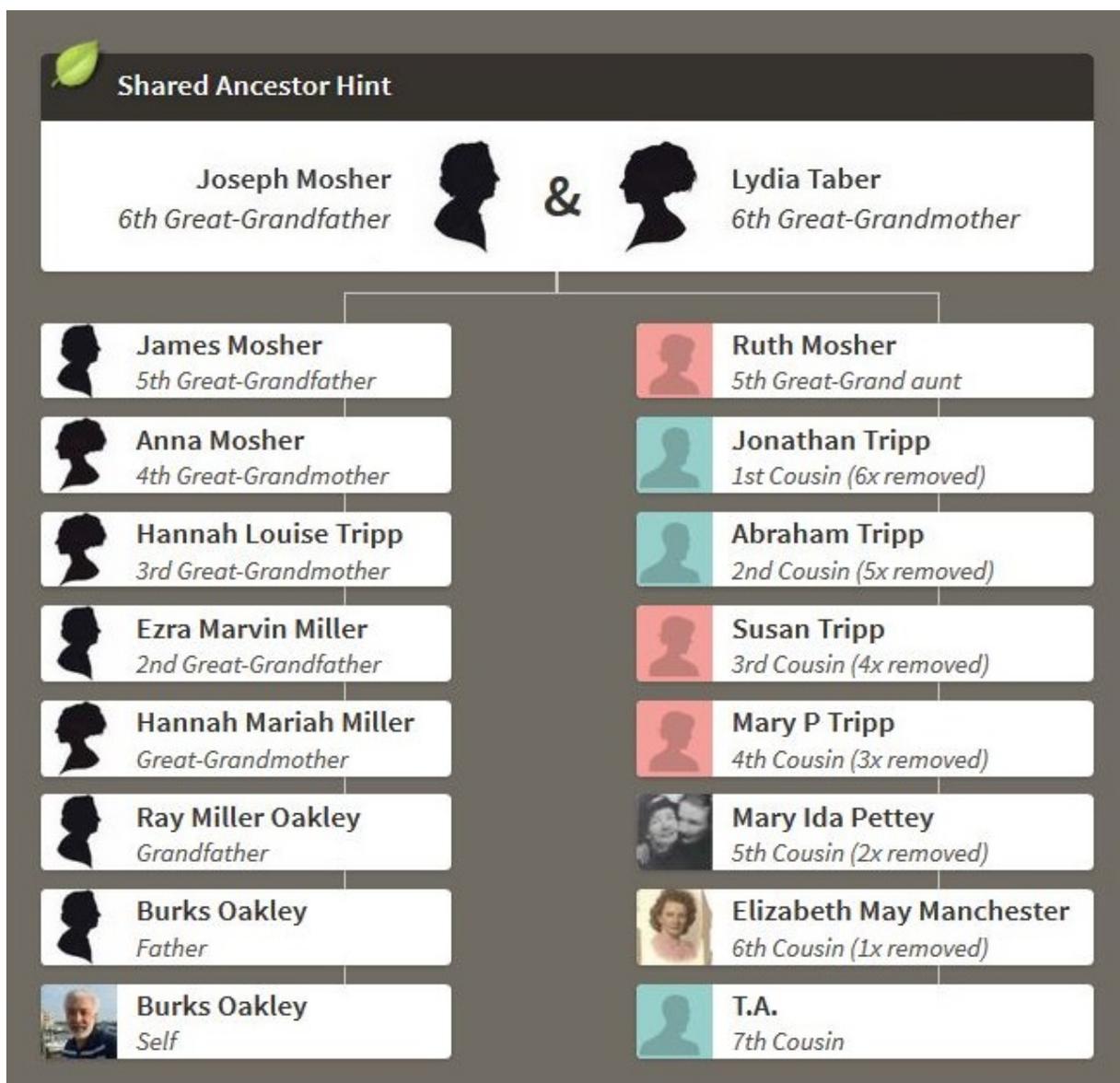
The estimated MRCA is 5.0, whereas their actual MRCA is 9.5!

At this point, we have THREE separate lines going back to Joseph Mosher and Lydia Taber – coming from Dick Wolfe, the Mewer family, and the Oakley family. And descendants of these three separate lines all have matching DNA segments on Chromosome 10. But wait, it only gets better!

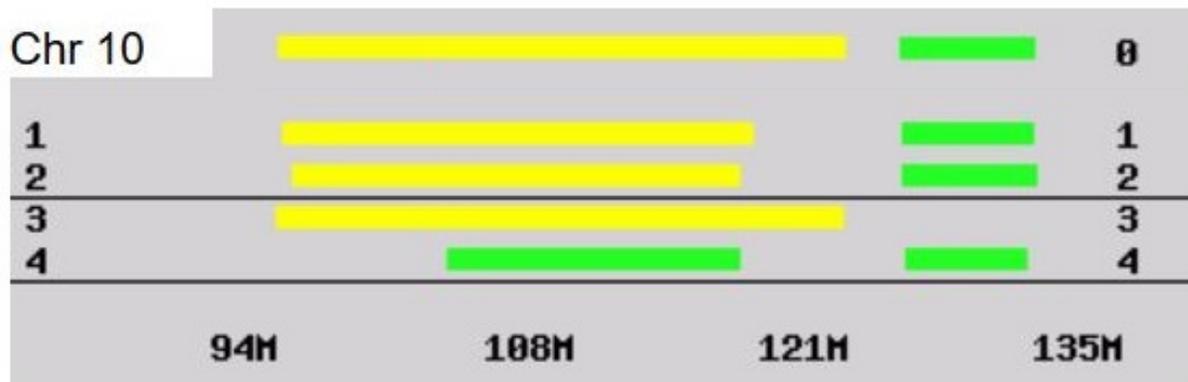
<sup>3</sup> Any matching segment of DNA that is larger than 7.0 cM is considered to be significant.

## The Manchester Line

Another one of my Shared Ancestor Hints on the Ancestry.com website is with a man having the username of **T.A.** (administered by Karen Ahearn). **T.A.** is descended from Joseph Mosher and Lydia Taber through their daughter Ruth Mosher (1707-1771), and he and I are seventh-cousins:



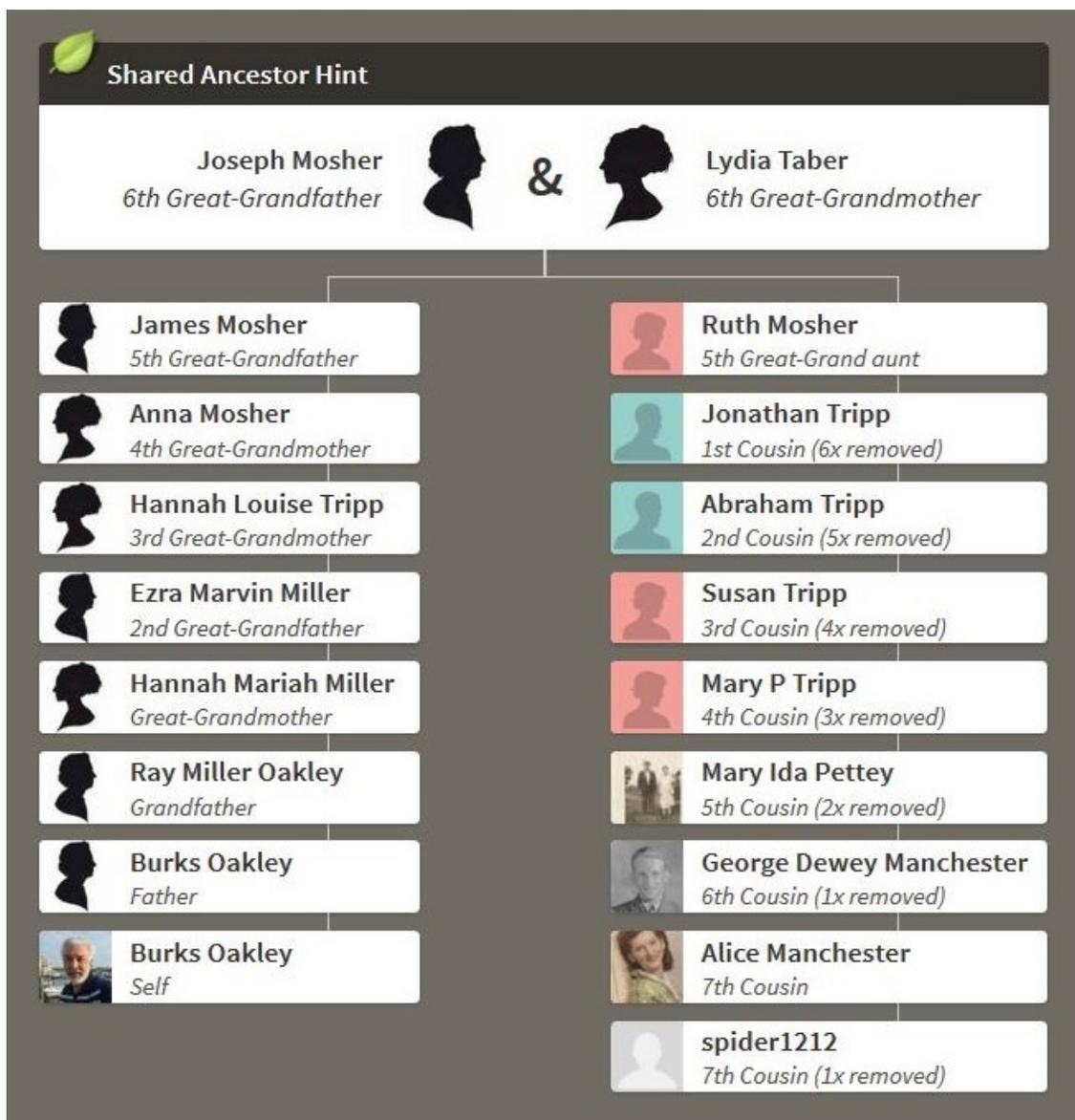
The following chart shows how Amy, Burks, Mark, and **T.A.** all match Cousin Dick on Chromosome 10:



0-Dick Wolfe, 1-Amy Oakley, 2-Burks Oakley II, 3-*T.A.*, and 4-Mark Eidem.

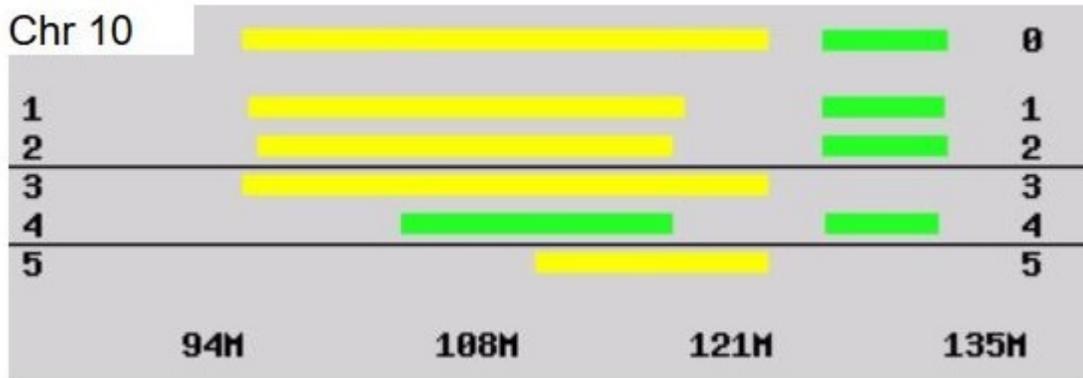
While Dick, Amy, Burks, and Mark all have two matching segments, *T.A.* (row 3) only has one. It appears that the Oakleys inherited two segments, the Mewer family only got the shorter segment on the right (as shown in the previous section), and *T.A.* only got the longer DNA segment on the left. In fact, *T.A.*'s matching segment with Dick Wolfe is 34.6 cM, which larger than either Amy's or Burks' matching segment with Cousin Dick.

Another individual from the Manchester line matches Cousin Dick and me on Chromosome 10; she is a woman whose GEDmatch username is *spider1212*, and her real name is Karen Stevenson Carlini. Karen is also on Ancestry.com with the same *spider1212* username, and we have a DNA match plus a Shared Ancestor Hint, which is shown in the following chart:



Comparing the lines in my Shared Ancestor Hints with **T.A.** and Karen (**spider1212**), I see that Karen's mother Alice Manchester (1932-2013) was a first-cousin of **T.A.**, meaning that Karen and **T.A.** are first-cousins once-removed. According to GEDmatch.com, they share 548.0 cM of DNA on 22 segments, which is just what one would expect for them being first-cousins once-removed.

The following diagram shows how Karen's DNA match on Chromosome 10 fits into the overall picture:

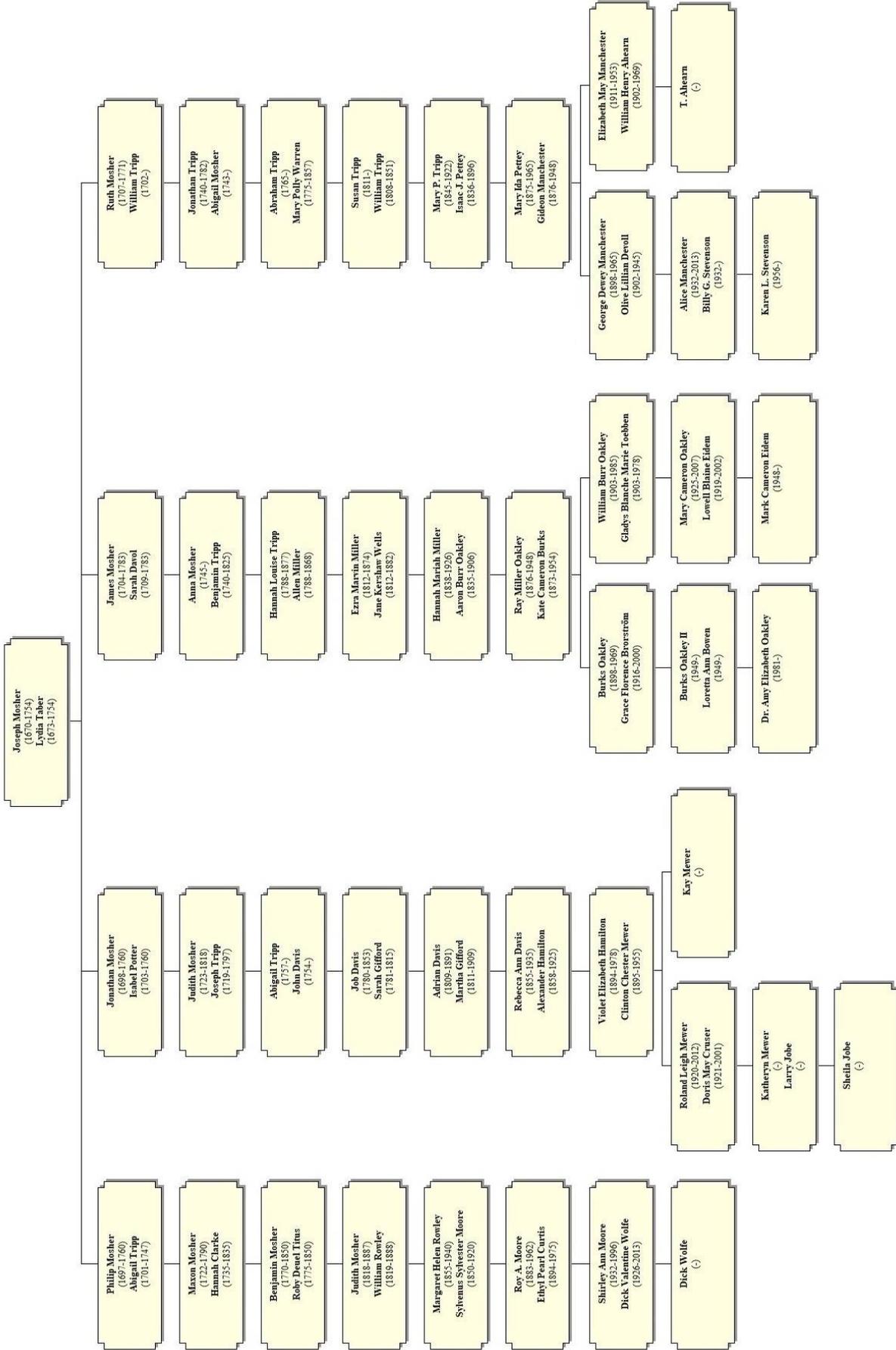


0-Dick Wolfe, 1-Amy Oakley, 2-Burks Oakley II, 3-*T.A.*, 4-Mark Eidem,  
and 5-Karen Carlini

The above diagram shows how Amy, Burks, *T.A.*, Mark, and Karen all match Dick Wolfe. While Dick, Amy, Burks, and Mark all have two matching segments, *T.A.* (row 3) and Karen (row 5) only have one. And Karen's segment is missing about half of its length, compared with *T.A.*'s segment.

Due to the lack of overlap of the Manchester's segment with the shorter segment at the right, *T.A.* and Karen do NOT have a DNA match with any of the Mewer family members.

So now we have FOUR separate lines back to Joseph Mosher and Lydia Taber – the Oakley line, the Mewer line (Kay, Katheryn, Sheila), Dick Wolfe, and the Manchester line (*T.A.*, Karen). This can be summarized in the following chart:

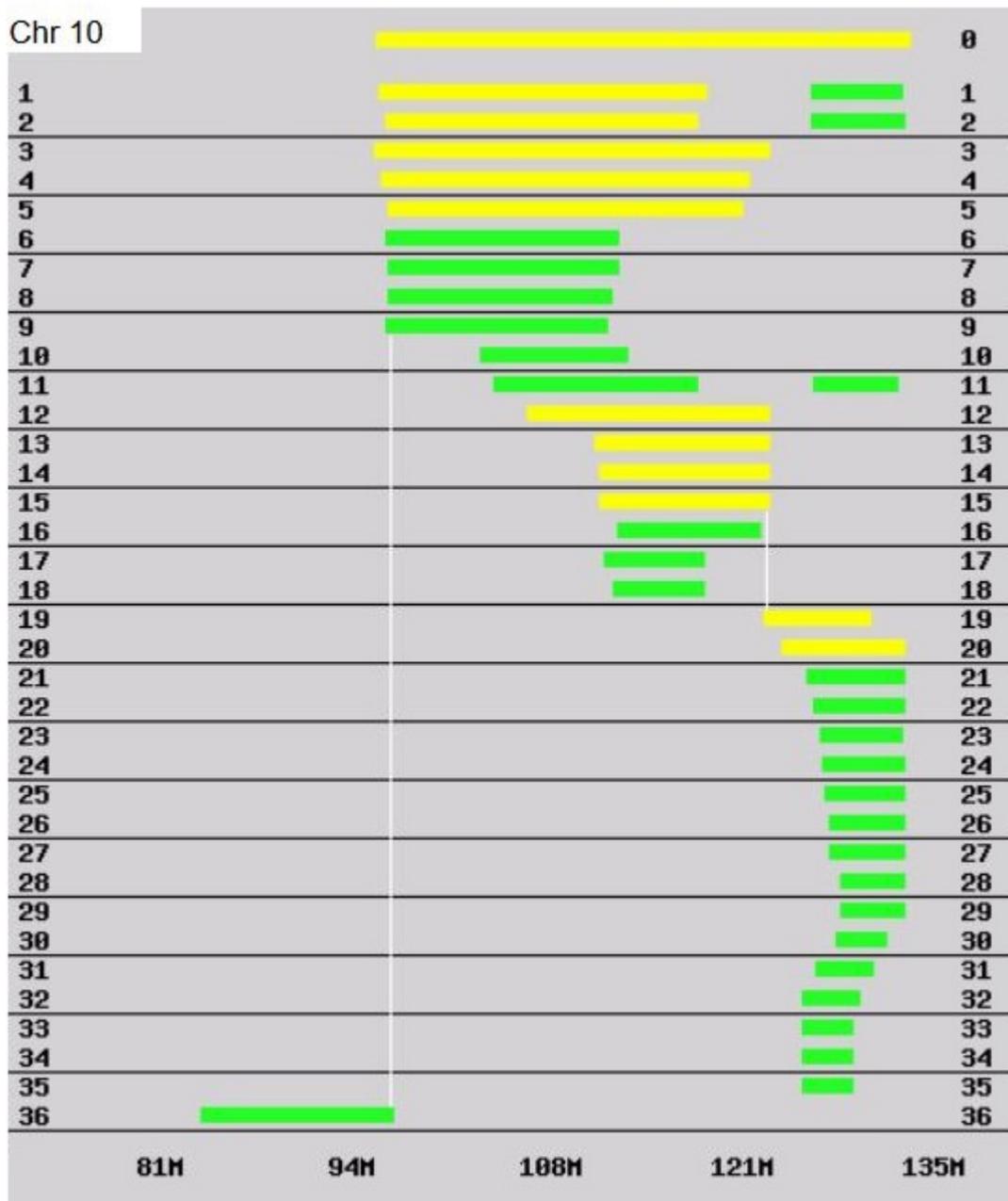


Due to the fact that there are two different matching segments on Chromosome 10, the Manchester family members (who have the long segment on the left) don't match the Mewer family members (who have the shorter segment on the right). But each family matches Dick Wolfe and the three Oakleys.

I take all of this to be strong genetic evidence that the "Quincy Oakleys" really are descended from Joseph Mosher and Lydia Taber.

### ***Could There Be Others?***

There actually are a total of 36 people in the GEDmatch.com database who match both Dick Wolfe and me on Chromosome 10. Here is a diagram showing how these people match Dick Wolfe:



0-Dick Wolfe, 1-Amy, 2-Burks, 3-*T.A.*, 11-Mark, 13-Karen,  
21-Kay Mewer, 26-Katheryn Mewer Jobe, 27-Sheila Jobe.

The fact that Dick Wolfe has matches over a very large region is significant – it is like he has the entire large segment – and remember that each person in the diagram above also matches me on Chromosome 10. It appears that the Oakleys (Burks, Amy, Mark) got most of the overall long segment, but not the segment in the middle, so their match with Dick Wolfe is broken into two different parts. The Mewers got the right-hand segment. The Manchesters got the left segment.

Note that Amy, Burks, and Mark (the Oakleys – rows 1, 2, and 11) are the only ones with the two separate segments. And others have either the left segment or the right segment, but not both.

Are any of the people in this chart descended from Joseph Mosher and Lydia Tripp, or perhaps from one of *their* ancestors?

***Stephen Rafferty – Is This Too Good to Be True?***

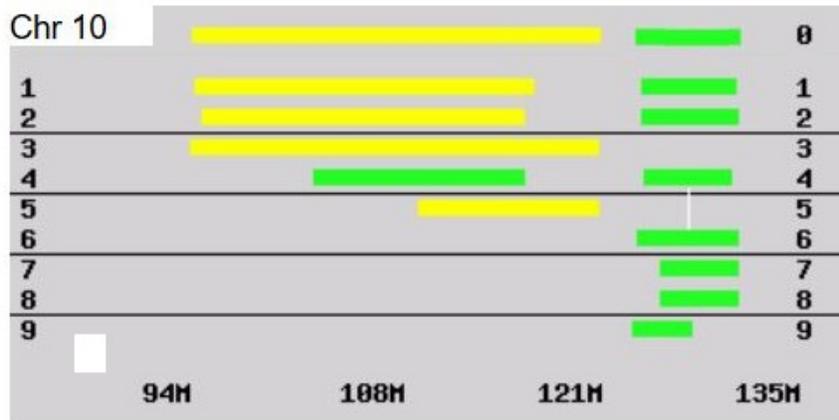
The person in row 32 in the previous figure is a man by the name of Stephen Rafferty. Examining my DNA match with him in detail gives the following:

Comparing Kit A122463 (Burks Oakley II) and M355952 (Stephen Rafferty)			
Chr.	Start location	End Location	Centimorgans (cM)
10	128,902,668	131,879,566	10.3
Estimated number of generations to MRCA = 5.2			

Of course, Stephen also matches with Dick Wolfe:

Comparing Kit A458540 (*brywesjor) and M355952 (Stephen Rafferty)			
Chr.	Start location	End Location	Centimorgans (cM)
10	128,222,450	132,190,525	12.7
Estimated number of generations to MRCA = 5.1			

From the last diagram and these tables, it is clear that Stephen Rafferty only has the short segment on the right, like the three members of the Mewer family. The following chart shows this graphically:



0-Dick Wolfe, 1-Amy, 2-Burks, 3-*T.A.*, 4-Mark, 5-Karen, 6-Kay Mewer, 7-Katheryn Mewer Jobe, 8-Sheila Jobe, and 9-Stephen Rafferty

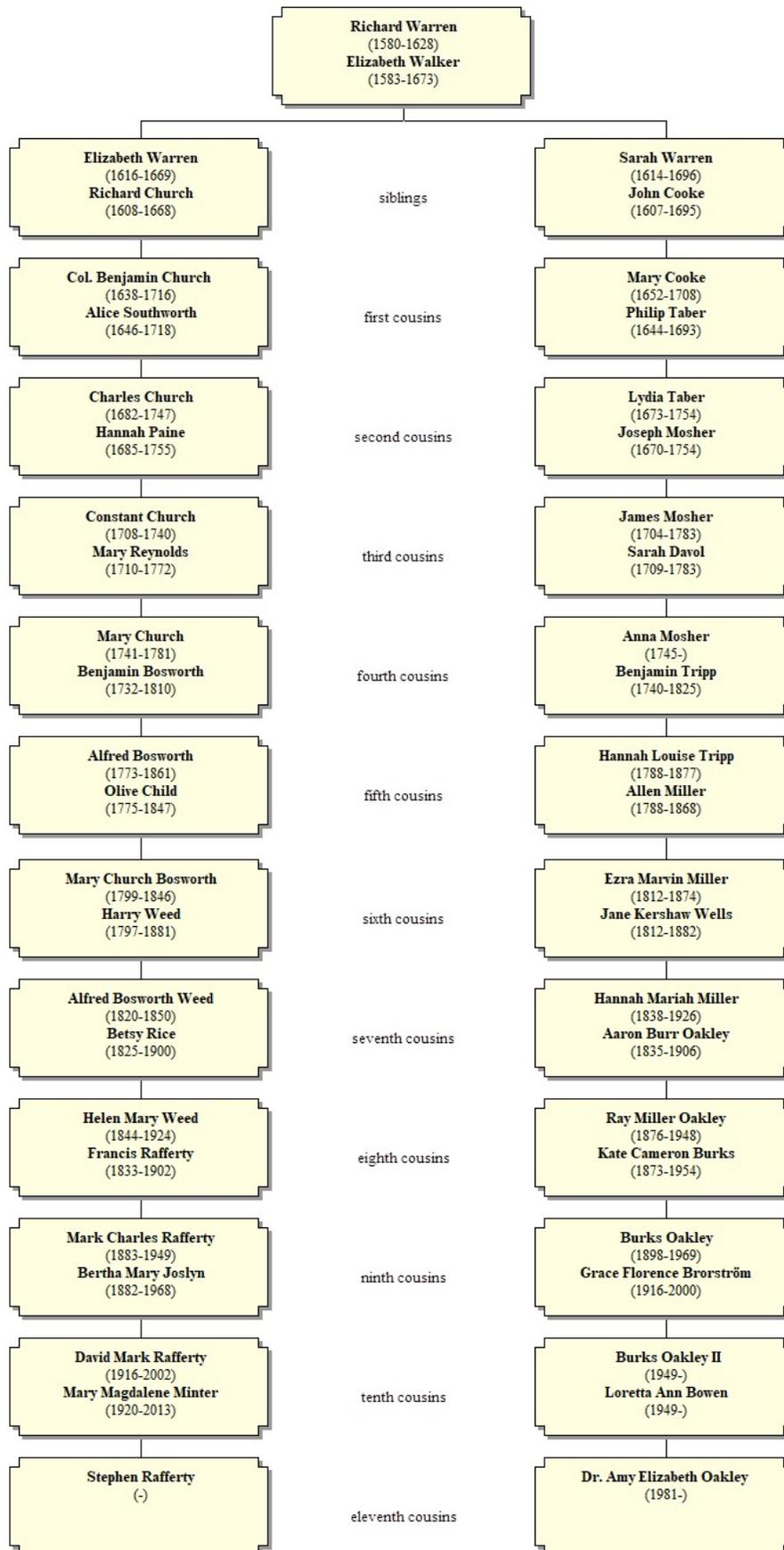
It is apparent that Stephen Rafferty (row 9) shares the short segment on the right with the others. Stephen is on Ancestry.com with the username of: ***steveraff3789***. He has his family tree on Ancestry.com, and it shows that we are related!

Take a deep breath, because this is really going to knock your socks off!

(drum roll, please....)

It turns out that Stephen Rafferty is descended from Richard Warren (1580-1628), who was a Pilgrim who came to America on the *Mayflower* in 1620. Richard Warren was a great-grandfather of Lydia Taber!

Stephen is my daughter Amy's 11<sup>th</sup>-cousin, as shown in the following chart:



Upon learning this, my initial reaction was that it was impossible – DNA doesn't get passed down for so many generations. But, still, it would be really cool to have a DNA match with someone going back to the *Mayflower*.

If this were true, it would mean that the original DNA was passed down from Richard Warren or his wife Elizabeth Walker – one path was to Stephen Rafferty, the other path was to Lydia Taber, and then in the four paths I have documented in this narrative. But I don't have much confidence in this scenario – I'm just including it in case DNA analysis gets better in future – maybe someone else will be able to prove this one way or the other.

### ***Concluding Remarks***

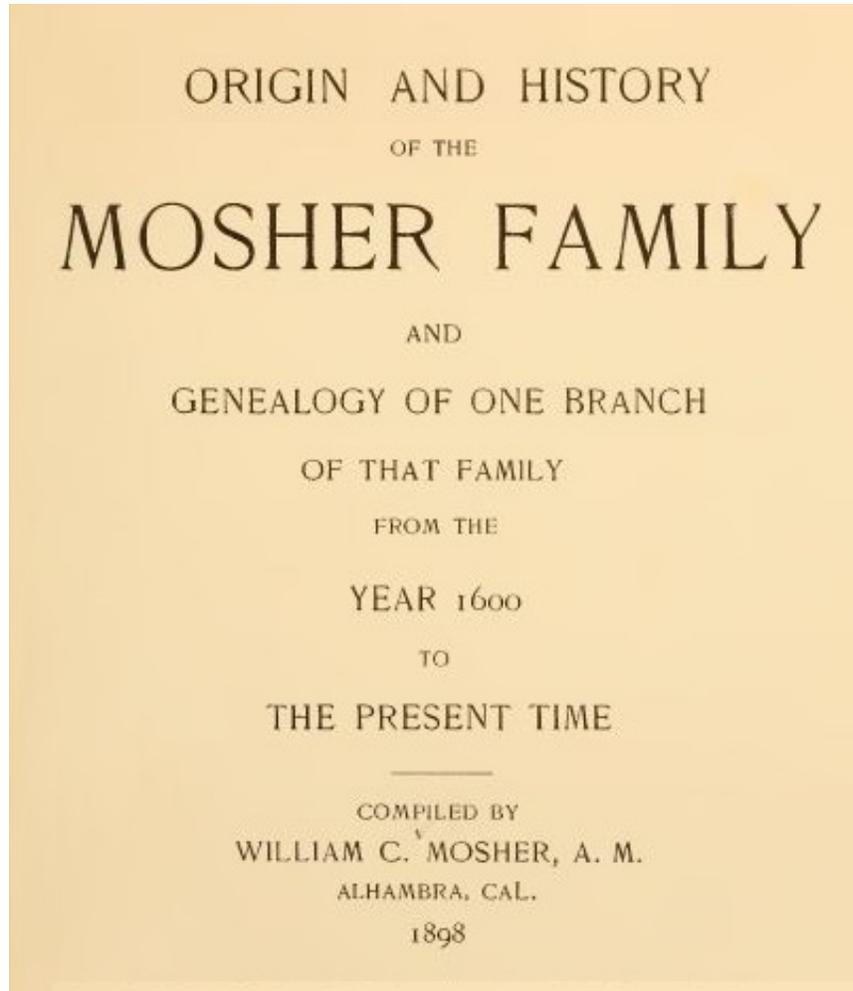
In this narrative, I have described how the “Quincy Oakleys” share a DNA match with other descendants of Joseph Mosher and Lydia Taber, who were born in New England in the 1670's. I have identified and documented FOUR separate lines that go back to this couple, and share their DNA, which I find really amazing.

As a scientist and engineer (my Ph.D. is in biomedical engineering), I am awed by the knowledge that part of my DNA is part of the DNA that was in the cells of Joseph Mosher or Lydia Taber in the 1670's in New England. This DNA segment has been passed from parent to child in a pathway extending for eight-ten generations over almost 350 years!

Finally, as will be discussed in the Appendix II below, Lydia Taber was the granddaughter (and great-granddaughter) of Pilgrims who came to America in 1620 on the *Mayflower*, and the DNA evidence presented in this narrative helps to confirm that the “Quincy Oakleys” indeed can trace their roots in the New World back to the *Mayflower*.

## Appendix I. The MOSHER family in America in the 1600's

In 1898, William C. Mosher published a history of the Mosher family; this book is available online in multiple formats (including PDF).<sup>4</sup>



Our branch of the Mosher family in America goes back to Hugh Mosher (1600-1694), who came to America from England in 1636. The relevant section of the Mosher Family book reads as follows:

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<sup>4</sup> <https://archive.org/details/originhistoryofm00mosh>

III. A third Hugh Mosher, cousin of the two already mentioned, was the son of Stephen Mosher, of Manchester, England. He sailed for America and reached Boston in 1636. He first located in Salem, where he became a friend of Roger Williams, pastor of the Salem church, with whose religious views he was in full sympathy. Roger Williams was persecuted by the civil authorities for openly advocating liberty of conscience in religious matters and the separation of church and state. When he was banished from Massachusetts in October, 1636, Hugh Mosher went with him to Rhode Island, or joined him there during the winter of that year, which was severely cold and the hardships very great. Roger Williams was grateful for the assistance rendered him by Hugh Mosher,

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and afterwards rewarded him with substantial tokens of his gratitude, securing for him a permanent title to a fifth part of the large and fertile township of Westerly, Rhode Island, August 4, 1676. In 1669 Hugh Mosher was appointed by the general court Ensign of a military company, and he took part in the war against King Philip, distinguishing himself by his daring and bravery. In this war all the New England colonies suffered greatly, and during the 12 years of its continuance about 40 towns were burned and more than 1000 white men were killed, among whom were two sons of Hugh Mosher. Sympathizing with Roger Williams in his religious views, he became a Baptist, and in 1674 he was ordained pastor of the Baptist church in Dartmouth, in the southern part of Massachusetts, near the boundary line of Rhode Island. But after his ordination he was always called by his military title—Ensign Hugh Mosher. He died at Newport, R. I., in 1694.

The book goes on to include a genealogy of all of the early branches of the Mosher Family in America. Of course, most relevant to me is the section on Joseph Mosher (1670-1754), who was a grandson of the immigrant Hugh Mosher.

III. Joseph Mosher, son of Hugh Mosher, second, born 1670, died 1754. Married Lydia Taber. She was born 1673 and died 1743.

Children :

REBECCA, born December 28, 1695.

PHILIP, born December 20, 1697.

JONATHAN, born March 13, 1699.

JOSEPH, born June 23, 1701.

JAMES, born December 13, 1704.

RUTH, born September 17, 1707.

BENJAMIN, born February 22, 1709.

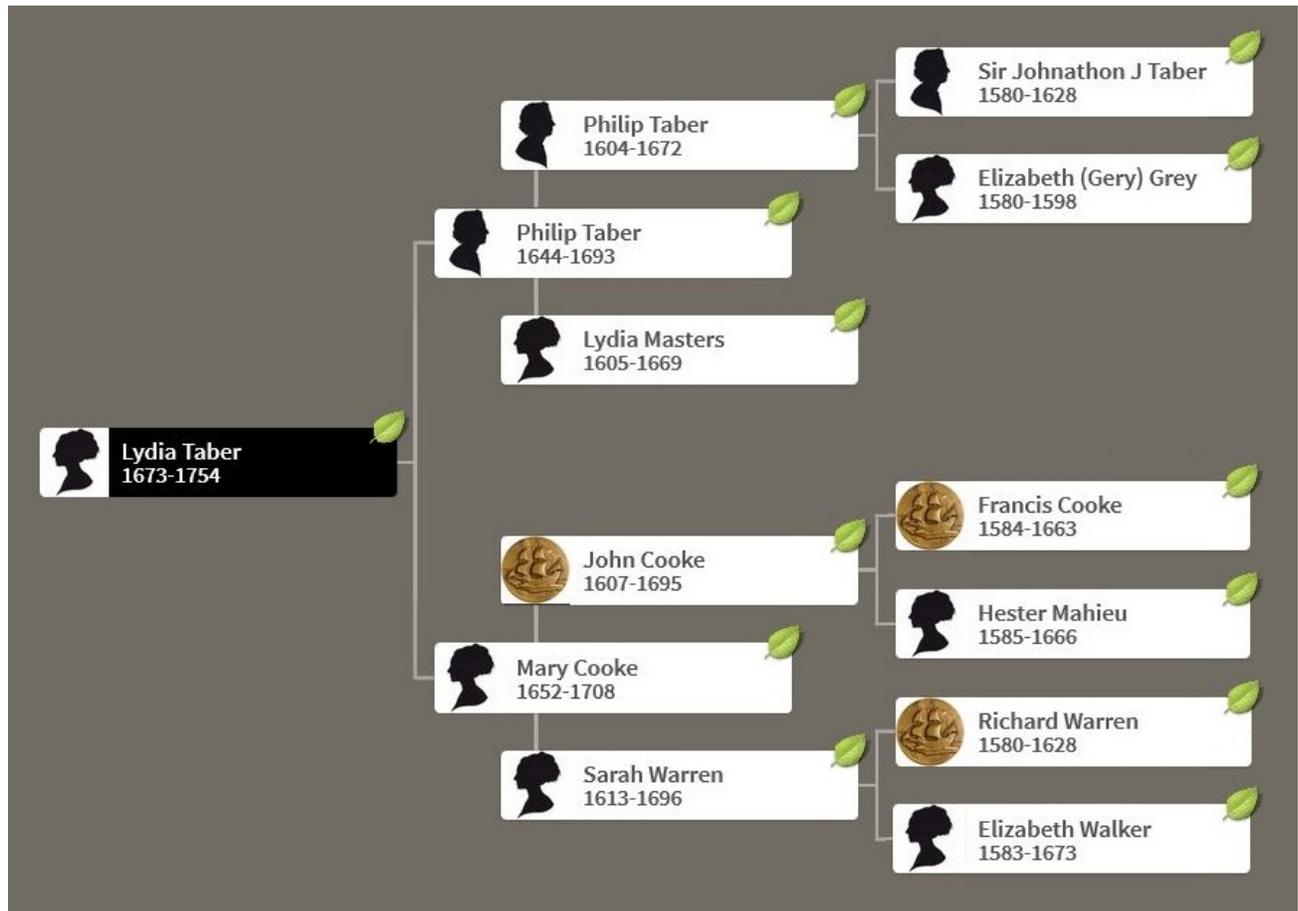
WILLIAM, born July 29, 1713.

LYDIA, born April 15, 1719.

This section lists a number of Joseph Mosher's children mentioned in this narrative: Philip Mosher (b. 1697), Jonathan Mosher (b. 1699), James Mosher (b. 1704), and Ruth Mosher (b. 1707).

## Appendix II. The TABER family in America in the 1600's

Lydia Taber, who is a central figure in this narrative, was a direct descendant of Pilgrims who came to Plymouth, Massachusetts, on the *Mayflower* in 1620. Her pedigree is shown in the following diagram:



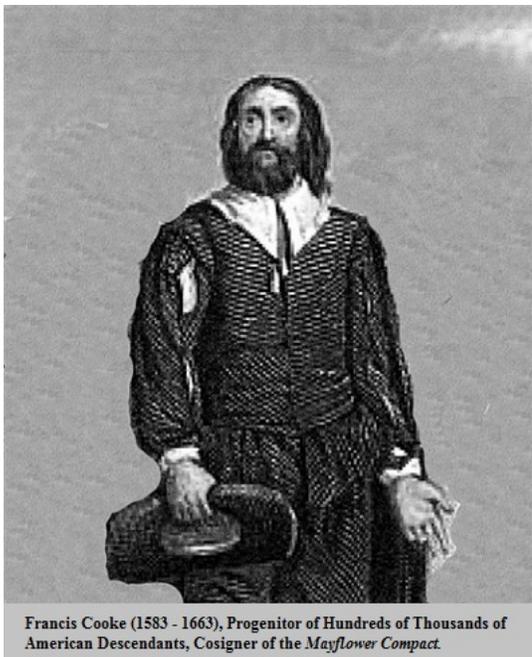
This diagram shows that Lydia Taber's mother was Mary Cooke (1652-1708), and Mary was the daughter of John Cooke (1607-1695), who came to America with his father Francis Cooke (1584-1663) on the *Mayflower* in 1620. Mary Cooke's mother was Sarah Warren (1613-1696), and Sarah was the daughter of Mayflower Pilgrim Richard Warren (1580-1628).

So through Lydia Taber, the "Quincy Oakleys" can trace their roots to three individuals who sailed on the *Mayflower* in 1620. Of course, the "Quincy Oakleys" also are descended from three others who sailed on the *Mayflower*: William White and his wife Susanna, and their son Peregrine White.

As an aside, Peregrine White was born on the *Mayflower* sometime in late November 1620, shortly after it arrived off the tip of Cape Cod, making him the first child born to the Pilgrims in the New World.

And, as I have written previously, at some point during the late 1640's, John Cooke "fell into the error of Anabaptistry," and was cast out of the Plymouth Church. The Church record states: "This John Cooke although a shallow man became a cause of trouble and dissension in our Church and gave just occasion of their casting him out; so that Solomon's words proved true in him that one sinner destroyeth much good."

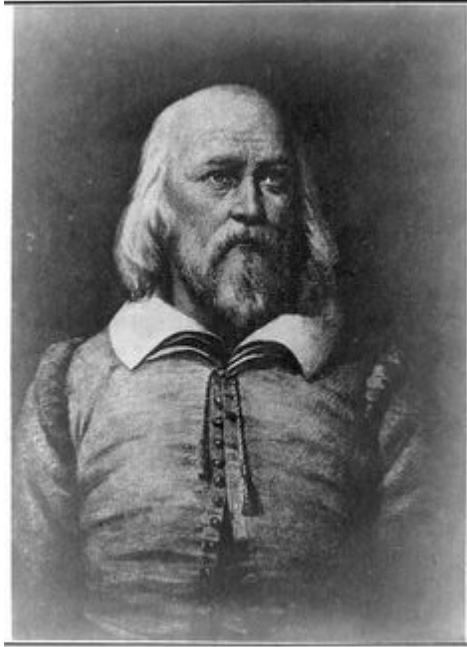
Finally, through Richard Warren the "Quincy Oakleys" are related to Ulysses S. Grant, FDR, Alan Shepard, Richard Gere, Sarah Palin, and Amelia Earhart, while through Francis Cooke, we are related to GHW Bush (#41), GW Bush (#43), Dick Van Dyke, Richard Gere, and Grandma Moses.



Francis Cooke (1583 - 1663), Progenitor of Hundreds of Thousands of American Descendants, Cosigner of the *Mayflower Compact*.



Francis Cooke (1583-1663)



Richard Warren (1580-1628)