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A CARPENTER, A BAKER, ... A CAROTHERS? - A MULTIPLE MPE CASE STUDY

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Abstract

There are multiple instances where DNA testing, either autosomal DNA (atDNA) or Y-DNA, has uncovered a misattributed parentage event (MPE) whereby a biological parent is not the person expected. This article describes how a search for a paternal great-great grandfather of the author using DNA analysis led to the discovery of an MPE that negated one-fourth of the author's family tree and that his true surname should be BAKER ... or should it? Building a BAKER family tree based on DNA matches identified James Alton Baker (1912-1996) as the author's biological grandfather instead of Oliver Ballard Carpenter (1914-1988) of record. The Baker line can be traced back to Hiram Baker (1806-?) and his wife Anna Marie Kellogg (1811-1881). Shared DNA matching and the What are the Odds? tool are used to place two different subgroups of Baker matches into the family tree. A Big Y-700 match who shares the same confirmed haplogroup (I-FT336746) as the author and is a direct descendant of John Carothers (d. 1796) is evidence of another MPE. Numerous atDNA matches of the author's father also descend from John Carothers. How or when Hiram Baker fits in with the Carothers line is unknown. Y-DNA results also demonstrate that Hiram Baker does not descend from Francis Baker of Yarmouth, Massachusetts, as some researchers have indicated.

Introduction

Before the use of genetic genealogy, the author's paternal family tree is shown in Figure 1. Charles and Rose are children of Emma May Keyes from her first marriage. She remarried about 1890 to William Leslie Carpenter. William's obituary, along with Charles' death certificate, indicate Emma's first husband's surname was Thompson (first name unknown). Charles and Emma are listed with the Thompson surname and as step-children of Warren in the 1900 federal census for Galeton, Potter Co., PA. Charles is listed with the Carpenter surname in the 1910 census for Wharton Twp., Potter Co., PA. Although the author had no experience with genetic

genealogy, it was thought it might open doors to help find the biological father of Charles and Rose.

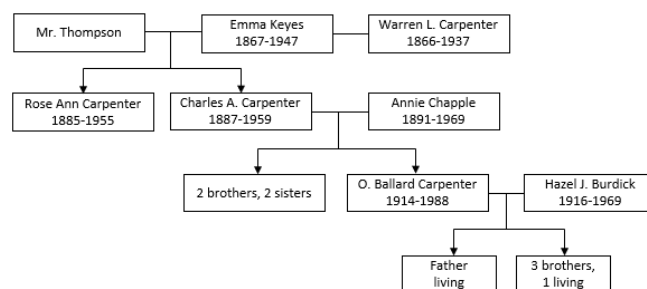


Figure 1. Author's Paternal Lineage Pre-DNA Testing
 The author started DNA testing in 2018, first with AncestryDNA and eventually with the other four major companies. At the top of Ancestry's match list were two females that were unknown to the author.

The amount of shared DNA for each is 557 cM and 462 cM respectively. According to the Shared cM Project, version 3.0¹, these individuals are close relatives, most likely half-first cousins, half-great nieces or first cousins, once removed. Due to the age of the author (67), half great aunts or great-great aunts were ruled out.

Determining how these two matches are related led to a totally unexpected surprise – the misattributed parental event (MPE). The following report will demonstrate three instances of MPE. The first case had an immediate impact since it negated one-fourth of the author's family tree. Building out the new tree uncovered a case of adoption at birth and the last case was discovered using Y-DNA. A possible fourth case involves a cluster of DNA matches that descend from a single person that will be shown to belong in the new tree, but genealogical records cannot place him.

Methods and Data

Uncovering the Pivotal MPE

This report utilizes only AncestryDNA match data. For privacy concerns, initials will be used for the unknown DNA matches. The first unknown match, BS, actually made things easy by contacting the author for help, indicating that she was an adopted child and her birth father was Sidney Clark Baker (1927-2000). She also indicated that the next closest unknown DNA match (SY) was her half-sister, also a child of Sidney. Sidney was a traveling

musician and managed to have at least 17 children with at least four different spouses/partners.

The author manually generated shared matching clusters in an Excel spreadsheet for BS and SY. All shared matches were unknown and many of them indicated relatively close relationships. It became necessary to determine if this unknown branch belonged to the author's paternal or maternal line. Two brothers and two sisters had also tested with Ancestry, along with author's father. One of the sisters is a half-sister and is not a biological daughter of the author's father. BS and SY were found as DNA matches for both brothers and the full sister as well as the author's father, thus establishing a paternal linkage. When presented with this knowledge, the author's father discussed a hunch that he had always felt he was not Oliver's son, mainly from how he was treated growing up. With this revelation, the only surviving brother of the author's father was tested with Ancestry. His results came back as a half-brother, and he had the expected matches along Charles Arthur Carpenter's maternal line. The first pivotal MPE had been uncovered.

The Baker Family Tree

By knowing the father of the matches, traditional genealogical practices were used to build a Baker family tree as shown in Figure 2.

Sydney Baker's parents were James Alton Baker and his first wife, Catherine Jane Clark, daughter of Otto Clark and Edith Pfaff. They also had a daughter

¹ Version 3.0 has been superseded by Version 4.0 in March 2020. The average cM values and ranges changed slightly as a

result of sampling a larger data base. The likely relationship of the two DNA matches will not change.

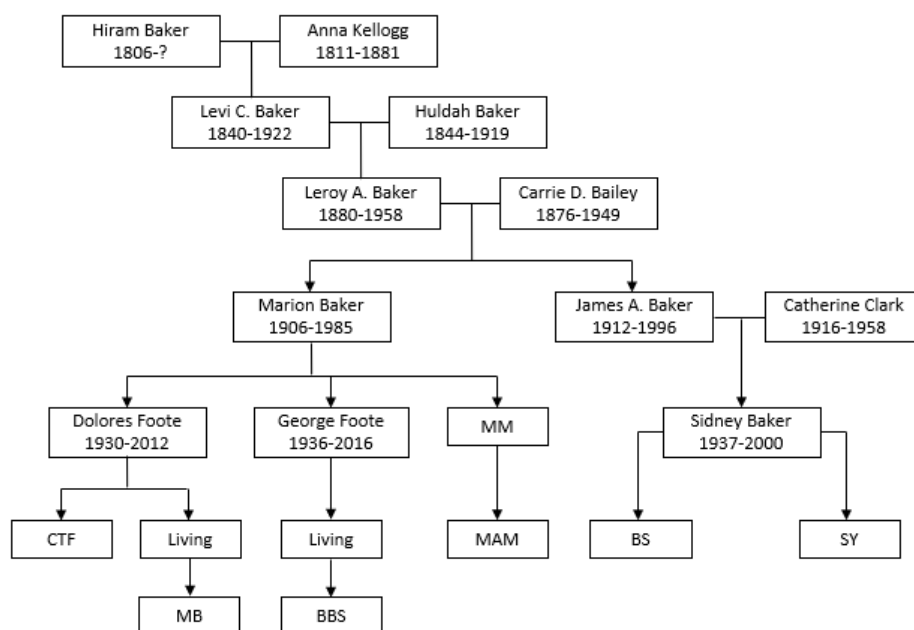


Figure 2. Abbreviated Baker Family Tree Connecting Close Family DNA Matches

that is still living. James is the fourth child of Leroy Alexander Baker and his first wife, Carrie Dell Bailey, daughter of Bradley Perry and Lenora Warner. Leroy and Carrie had four other children: 1) Marion Frances who married Adrian Foote, 2) Lawrence Wellington (1907-1933), 3) Edna Mae (1909-1999) who married Anthony Fabroni, and 4) Russell Bailey (1920-1985) who was unmarried. Leroy is the only son of Levi Carver Baker and his second wife, Huldah Baker, daughter of Almond Baker and Hannah Roblyer. Leroy also had a sister, Anna V., who was married three times. Levi is the third child of Hiram Baker and Anna Marie Kellogg, daughter of Amasa Kellogg and Eunice Chadwick. Hiram and Anna had two other children – Lyman (1834-1925), who married Elizabeth Gravely, and Elvira (1838-1862), who married James Warren. Little is known about Hiram. According to the Kellogg genealogy (Hopkins [1903]), he was born 7 Aug 1806 in Rochester, NY to Josiah and Mary Baker. He was a farmer and mechanic, living in Columbia, Bradford and Sullivan

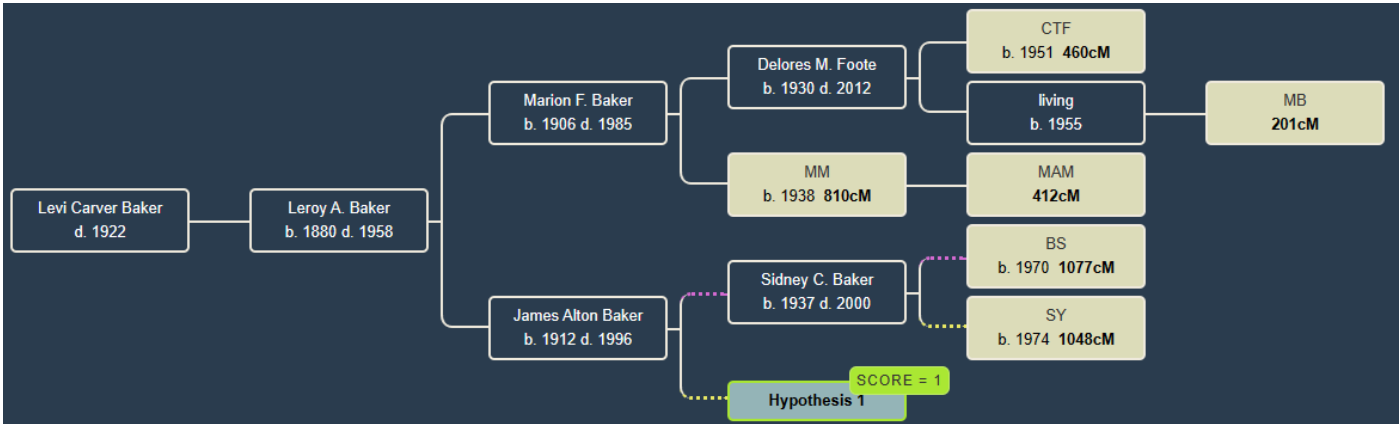
Counties in Pennsylvania. He was last heard from in 1860 while visiting his sister.

Unless stated otherwise, discussions of DNA matches are relative to the author's father. As of this writing, there are five confirmed DNA matches in Ancestry that are descendants of Leroy and Carrie Baker's daughter Marion. Based on the amount of shared DNA with these matches, James Alton Baker is believed to be the paternal grandfather of the author. The brothers of James were ruled out as the grandfather since Lawrence died over a year before the author's father was born and Russell would have only been 14. The relationship seems plausible in that James and Hazel Burdick were both living in the Nunda, NY area between 1930 and 1940 and there is a four-year age difference between them. Table 1 shows how the author arrived at this conclusion based on values from the Shared cM Project, Version 3.0. These relationships were also confirmed by trees that the DNA matches provided.

Table 1. DNA Matches Descended from Leroy Baker

Match	Assumed Relationship	actual	estimated average	estimated range
BS	half-niece	1077	891	500 - 1446
SY	half-niece	1048		
MM	1C	810	874	553 - 1225
CTF	1C1R	460	439	141 - 851
MAM	1C1R	412		
MB	1C2R	201	229	43 - 531
BBS	1C2R	109		

Recently, the What Are the Odds? (WATO) tool in DNA Painter was used to check this hypothesis. Figure 3 shows that the WATO tool predicts only one hypothesis with a positive probability, the one the author assumed.



Match name & Shared cM		Hyp. 1
BS	1077	Half Aunt / Uncle 99.02%
SY	1048	Half Aunt / Uncle 100.00%
MM	810	1C 95.02%
CTF	460	1C1R 87.08%
MB	201	1C2R 45.41%
Combined odds ratio		1.00

Figure 3. Where Does The Author’s Father Fit In the Baker Tree?

Connecting Descendants of an Adoptee

DNA match HEH shares 533 cM with the author's father. He supplied his family tree, identifying himself as a child of Doris L. Smith (1923–1998). When the author researched Doris, it was discovered that the indicated parents in the tree were for a different Doris Smith. After contacting HEH in November of 2019, the author was told that Doris was adopted by David P. and Marion Smith and passed on without telling whom her real parents were. Based on the amount of shared DNA, Doris was initially placed as an undocumented sister of James Alton Baker. In November 2021, the author was in contact with MM and was told that Doris was believed to be a half-sister that was given up for adoption since their mother was only 17.

The WATO tool was used to check this hypothesis using amounts of shared DNA from HEH (HEH was kind enough to share his DNA match list with the author). As shown in Figure 4, the initial assumption was not a very good one while the half-sister of MM is the best.

Table 2 identifies the DNA matches that are descendants of Doris Smith. She had two husbands. HEH is from her first marriage; SL and HH are his children. The estimated values reflect Version 4.0 of the Shared cM Project. MB and AB are descendants from Doris' second marriage.

The author asked MM and HEH if they would be willing to do mitochondrial DNA tests which would prove the half-sibling assumption, but HEH is satisfied with these results and sees no reason for the test.

Table 2. DNA Matches Descended from Doris Smith

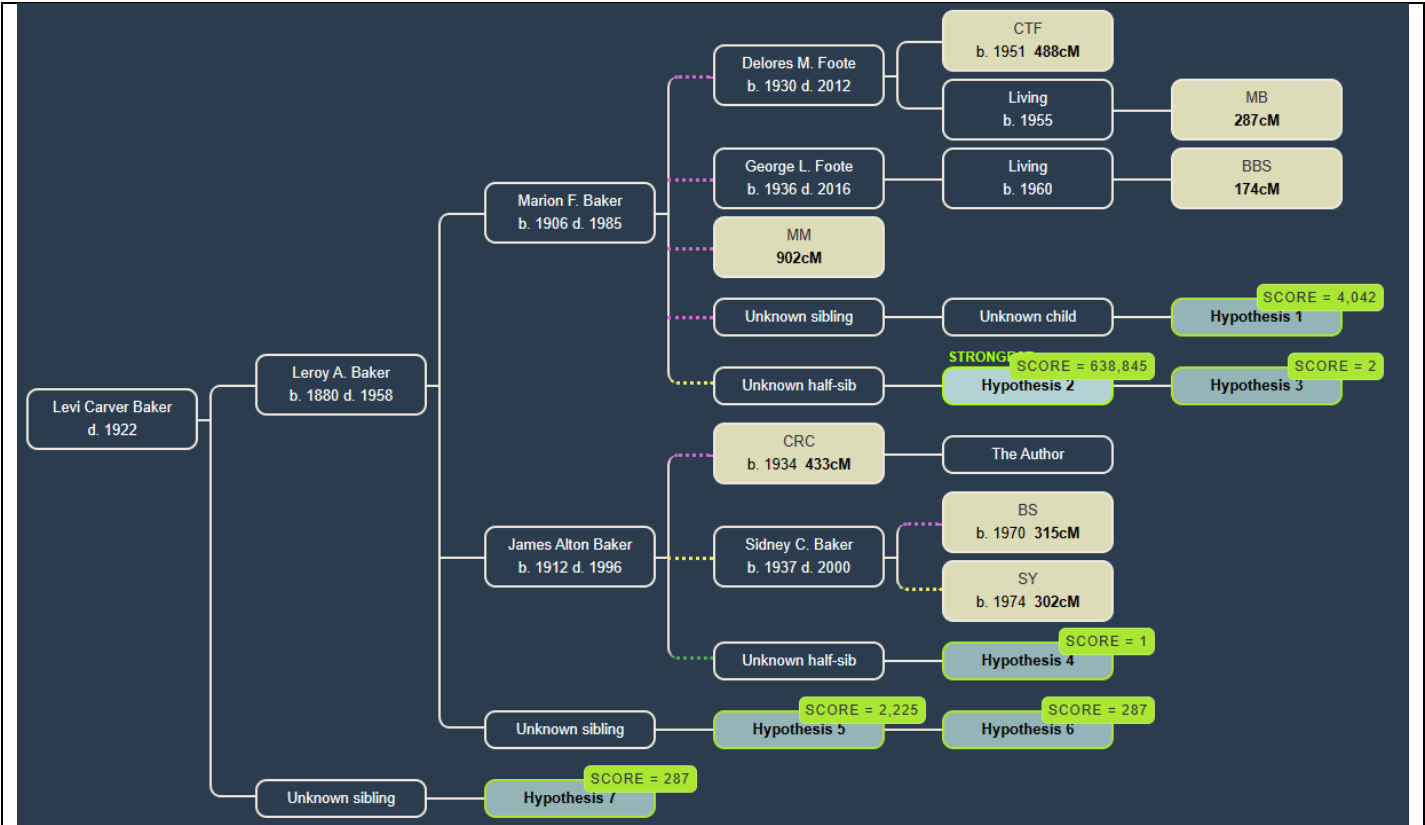
Match	Relationship	actual	estimated average	estimated range
HEH	1C1R	433	433	102 - 980
SL	1C2R	273	221	33 - 471
HH	1C2R	262		
MB	1C2R	263		
AB	1C3R	237	117	25 - 238

Extended Family Connections

The next batch of DNA matches are descendants of Lyman Baker, brother to Levi Carver Baker and son of Hiram Baker. As such, the author expected shared DNA amounts associated with 3rd cousins, their children and grandchildren. Again, these relationships have been verified with supplied trees and genealogical records.

Table 3. DNA Matches Descended Lyman Baker

Match	Relationship	actual	estimated average	Estimated range
JB	3C	70	73	0 - 234
RBJ	3C	51		
FC	3C	49		
PA	3C1R	65	48	0 - 192
DMB	3C1R	52		
MG	3C1R	49		
RG	3C1R	43		
BG	3C1R	38		
DA	3C1R	26		
DK	3C1R	26		
PJ	3C1R	25		
DGS	3C1R	21		
KF	3C1R	15		
RG2	3C2R	35	36	0 - 166
JR	3C2R	23		
NH	3C2R	16		
AI	3C2R	7		



Match name & Shared cM	Hyp. 1	Hyp. 2	Hyp. 3	Hyp. 4	Hyp. 5	Hyp. 6	Hyp. 7
MM	902 Great-Niece / Nephew 98.33%	Half Niece / Nephew 98.33%	Half Great-Niece / Nephew 1.67%	1C1R 1.67%	1C 98.33%	1C1R 1.67%	1C1R 1.67%
CTF	488 1C1R 89.25%	Half 1C 89.25%	Half 1C1R 6.42%	2C 6.42%	1C1R 89.25%	2C 6.42%	1C2R 6.42%
CRC	433 1C2R 17.31%	1C1R 82.05%	1C2R 17.31%	Half Niece / Nephew 0.63%	1C 0.63%	1C1R 82.05%	1C1R 82.05%
BS	315 2C1R 8.49%	2C 52.08%	2C1R 8.49%	Half 1C 39.43%	1C1R 39.43%	2C 52.08%	1C2R 52.08%
SY	302 2C1R 10.33%	2C 56.19%	2C1R 10.33%	Half 1C 33.48%	1C1R 33.48%	2C 56.19%	1C2R 56.19%
MB	287 2C 59.15%	Half 1C1R 59.15%	Half 2C 14.23%	2C1R 14.23%	1C2R 59.15%	2C1R 14.23%	1C3R 14.23%
BBS	174 2C 33.45%	Half 1C1R 33.45%	Half 2C 51.20%	2C1R 51.20%	1C2R 33.45%	2C1R 51.20%	1C3R 51.20%
Combined odds ratio	4041.77	638844.83	1.82	1.00	2224.66	287.17	287.17

Figure 4. Where Does HEH Fit In the Baker Tree?

Where Do These Matches Belong?

The last batch of DNA matches poses a problem. These individuals descend from William J. Baker, born 28 Aug 1872 and died 9 Feb 1963. To date, the author has not been able to determine who his parents are. A Shared DNA cluster diagram (Figure 5) was generated manually in an Excel spreadsheet. The tight coupling demonstrates that these individuals do descend from Hiram and Anna Baker as they share DNA from all three previous groups. The open question is how.

The assumption is to place William J. Baker as a son of Levi Carver Baker with a mother to be determined. This is based on the magnitude of the DNA matches – 426 cM (LB), 261 cM (SM), and 253 cM (JH). All three are grandchildren of William. These values, along with their birth years, suggest second cousins or their children.

The issue with this placement in the family tree is William's birthdate. He was born after Levi's first wife died and before he married his second wife. There is no paper trail to indicate another wife.

Using WATO, the real question that would like to be asked is where William J. fits into the Baker tree. Instead, one must test the grandchildren individually. Unfortunately, there is no capability to create a sub-tree and test all three assumptions at once.

Figure 6 asks where LB could fit. Hypothesis 1, 2, 3 and 4 are automatically eliminated, even though hypothesis 2 was deemed the strongest. William

Baker cannot be the son of James or Leroy Baker. Hypothesis 6 could work if the test was for William, not his grandchild. Hypothesis 5 is the only one that works when the age of William is factored in and knowing the target subjects are his grandchildren. The same conclusion is reached when SM and JH are tested (See Figures 7 and 8).

We are still stuck with the problem of William's birth date. The date comes from the Social Security Death Index. How reliable is it? Could it have been transcribed incorrectly? Ancestry does not show the original document. The 1900 Federal Census lists a William J. Baker born in August 1872 living as a servant in the household of the Sidney Disinger family living in Fayette Township, Seneca County, New York. Our William does live in Seneca Falls by 1910. Unfortunately, the birth state of his parents is inconsistent from census to census so that cannot be used as a check.

Another analysis was tried by starting with William's sub-tree and asking how the author's father would fit in. This does not work either. The problem is that there is additional information that must be factored in, such as known relationships of the target subject and birth dates of all people involved.

Perhaps with the judicious use of X, Y and mtDNA analysis, one could prove the true relationship of William to Levi, provided the correct combination of male and female descendants are available to test.

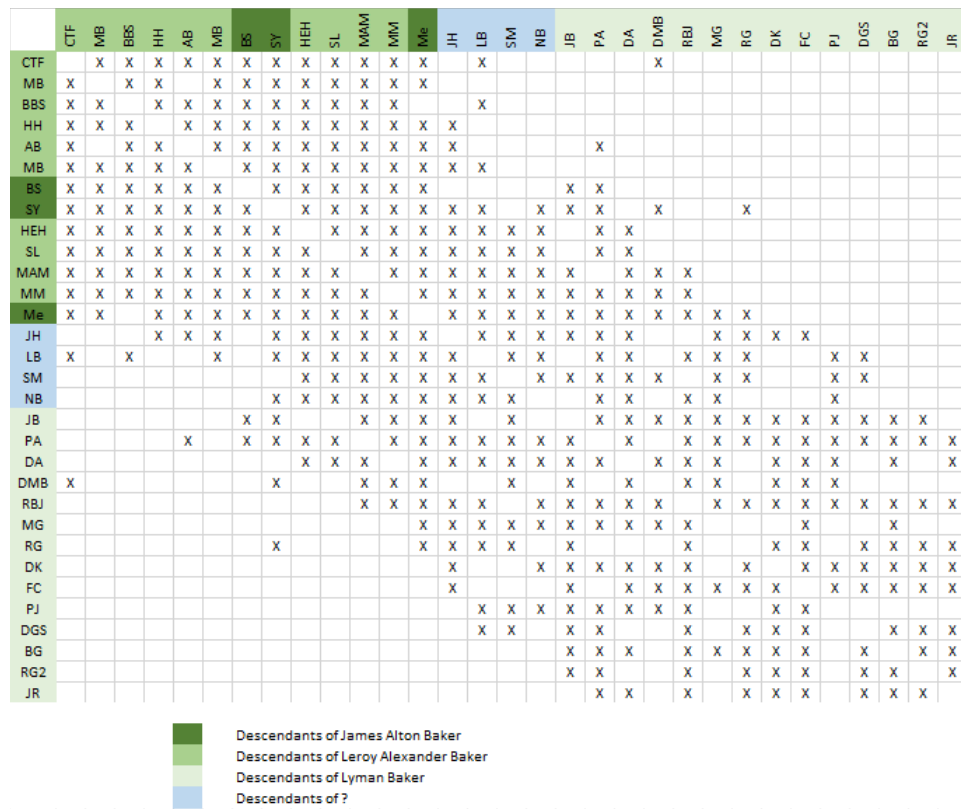


Figure 5. Shared DNA Cluster Analysis Using Father's DNA Match List

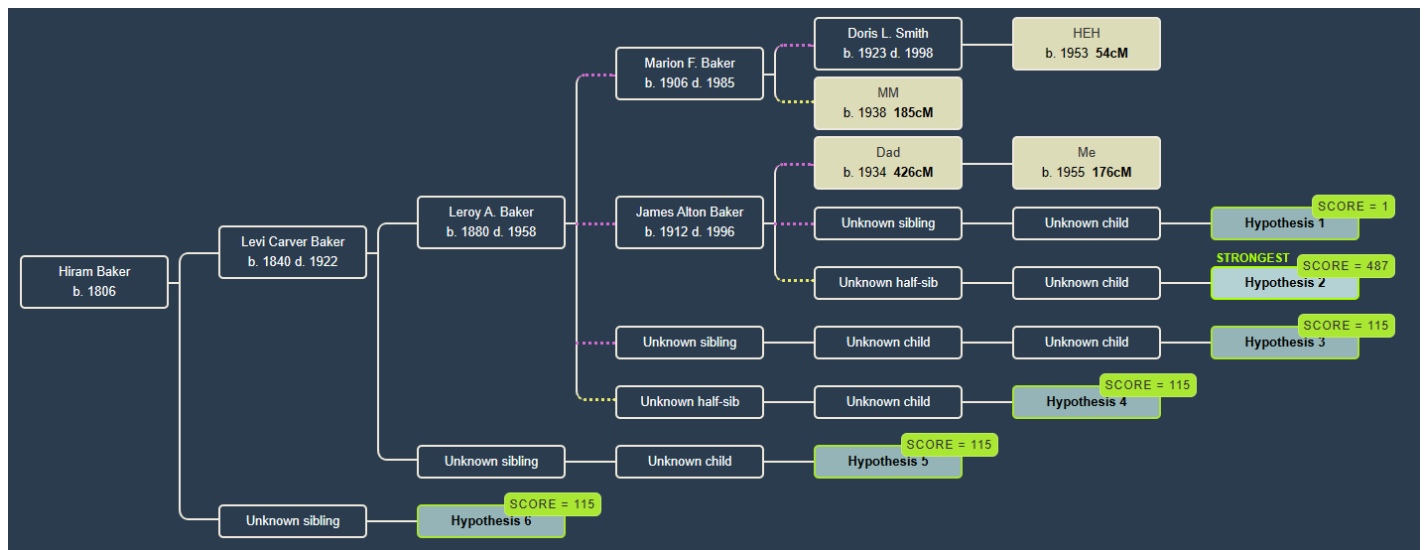


Figure 6. WATO hypothetical placements of LB (b. 1956)

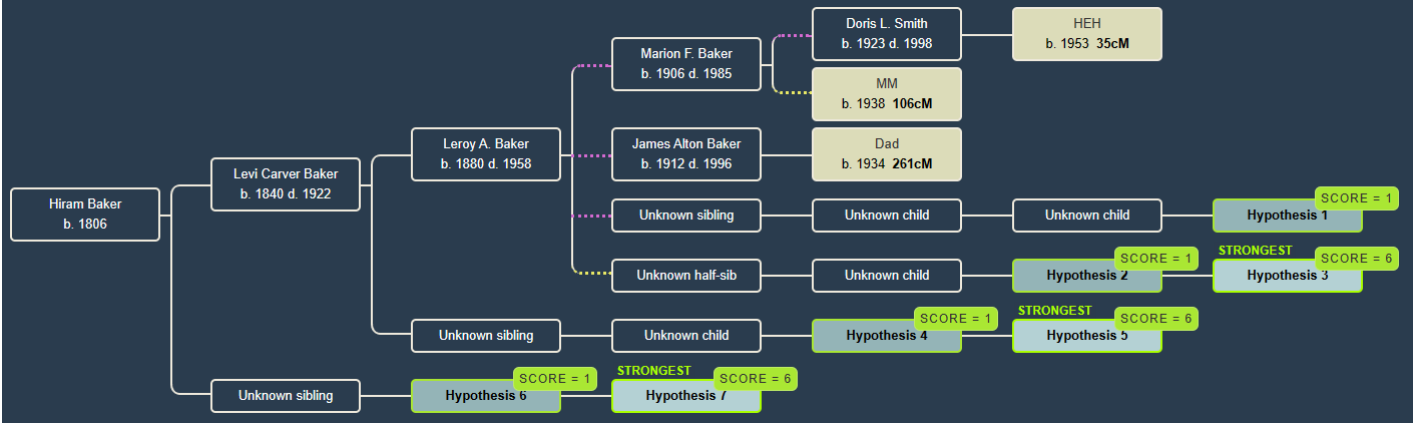


Figure 7. WATO hypothetical placements of SM (b. 1939)

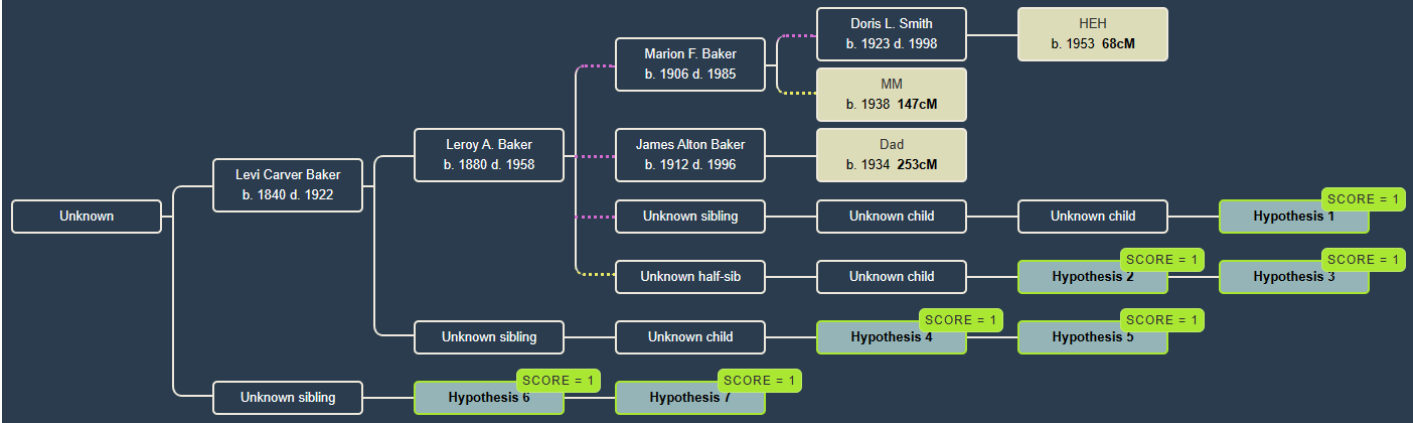


Figure 8. WATO hypothetical placements of JH (b. 1929)

Using Y-DNA

So far, all analysis has involved atDNA. Y-DNA could also be used to help solidify any conclusions that have been made such as the initial MPE, William J. Baker's paternal parentage, and possibly extending the Baker lineage beyond Hiram Baker. Levi Baker's wife Huldah is also a Baker. Is her line the same as her husband's?

The author initially ordered the Y-111 test which resulted in an estimated haplogroup of I-M253. There were no matches at any STR testing level that had the Baker surname. This doesn't necessarily mean that there is not a Baker ancestor beyond Hiram. A male ancestor from such an individual just has not taken a Y-DNA test yet. Eventually, DNA match DMB had the Y-111 test done at the author's request. As expected, his estimated haplogroup is I-M253.

To see if there are any possible Baker ancestors, the author looked in the Baker group project and extracted all testers that have the estimated haplogroup of I-M253. At the time of this writing, there were 116 testers including the author that fall into this category. The data was arranged in an Excel spreadsheet by the size of the test taken. Similar to what is done in the surname projects, the STR value for each single valued marker was color coded relative to the author's value to visualize a possible close relationship. In the author's opinion, the Y-111 test values are the most useful since it will provide the best estimate of genetic distance. Deviations in STR values were encountered across the board, regardless of what level of testing was done. With the exception of DMB, 70 out of 111 markers showed deviations. DMB has only two markers that deviate by a value of one each.

Upon closer examination of the other testers in the Baker group project, the author found two testers that descend from Josiah Baker (1765-1847), grandfather of Huldah Baker, wife of Levi Carver Baker. Josiah is a son of Josiah Baker (1735-~1820) and Sarah Haynes (1736-1840). The first tester only did the Y-37 STR test and shows an estimated haplogroup of R-M269. The other tester had either the Big Y-500 or Big Y-700 test done and belongs to haplogroup R-BY101963. Since Levi Baker descends from the I-M253 line, he is not related to his wife.

The elder Josiah is consistently shown across the various genealogy websites as a son of Josiah Baker (1704-1795) and Charity Eddy. This Josiah is a descendant of Francis Baker (1611-1696) of Yarmouth, Massachusetts (Baker [1931]). The cited reference does not list a Josiah as a child of Josiah and Charity. However, the Baker group administrator specifically groups the two testers mentioned above in with a group that is labelled as being descendants of Francis Baker. Assuming the lineage is correct, Hiram Baker cannot be a descendant of Francis Baker of Yarmouth.

The Carothers MPE

The purpose of shared DNA clustering is to potentially identify a common ancestor or ancestral couple. Once the clusters of shared DNA have been generated, it is necessary to identify the commonality in the family trees of each member of the cluster if possible, which will lead to identifying the common ancestor or ancestral couple. DNA match clusters were manually generated that specifically targeted the descendants of William J. Baker. From the clusters that were generated, the author was able to trace the ancestry of 11 individuals to John Carothers/Crothers. John was of Scottish descent, coming to America from Northern

Ireland around 1755. He originally settled in Little Britain, NY, moving to Ballston, NY shortly after the American Revolution, then to Phelps, Ontario Co., NY where he died on 1 Jul 1796. He had seven children – Robert Pegel, John, Elizabeth, Sally, Henry, William and Nancy. Three of the children (Robert Pegel, Henry and William) died in Wayne or Ontario County, NY. These two counties border Monroe County, NY to the East and Southeast. Hiram Baker is reported to have been born in Monroe County.

Using the surname search tool, a total of 29 DNA matches were found that descend from John. Table 4 lists those matches, grouped by the children (generation 2), then by the grandchildren (generation 3). The generation of each match is given along with the amount of shared DNA. The last few columns indicate which people in the Baker tree share matching DNA or have the Carothers descendant in their respective list of DNA matches. The matches highlighted in red indicate two grandchildren that married each other resulting in pedigree collapse. Even if the amount of shared DNA is exaggerated because of the collapse, it still reflects a distant relationship most likely beyond 5th cousin of the author's father. Descendants of Robert Pegel Carothers seem to show the closest relationship.

The fact that all four groups of Hiram Baker descendants share DNA with Carothers descendants implies the Carothers connection is older than Hiram Baker or Anna Kellogg. Anna's lineage is well documented and no Carothers are known as ancestors. This leads to the assumption that the Carothers must be in Hiram Baker's lineage. Y-DNA analysis proved it.

Table 4. DNA Matches of John Carothers Descendants

Generation		DNA Match	Generation	cM				# segments	Decedents									
2	3			unweighted	longest	shared	BS		SY	MM	EH	LB	SM	JH	JB	PA		
Robert Pegel	John	MEC	8	Y-DNA Match														
		SL	9	32	32	25	1	X	X	X	X							
	William V.	JL	10	15	15	13	1				X	X						
		CM	7	68	68	52	1				X	X	X		X			
		GH	8	25	25	21	1	X	X									
		JP	9	26	26	20	1				X	X						
		BR	7	80	71	73	2	X	X	X	X	X	X	X		X		
		DR	8	71	71	51	1	X	X	X	X	X	X	X		X		
J	MH	9	31	31	26	1	X	X		X					X			
John	Wm. B	tomiswho1	8	15	15	13	1											
		GB	8	9	9	9	1											
	Austin	BB	7	48	39	31	2					X	X					
		WM	8	22	15	18	2				X	X					X	
		DM	8	22	15	17	2				X	X					X	
		JM	8	18	11	15	2											
		SM	9	21	15	15	2				X							
	Delora	sdtidwell	9	19	19	16	1			X	X							
mnpbennett		9	23	23	22	1				X								
D	DR	8	25	9	24	3			X				X	X				
E		RE	7	9	9	9	1											
Sally	N	AR	8	16	16	14	1				X							
	N	DB	7	35	35	30	1	X	X	X	X					X		
Henry	Hiram	LK	8	60	39	53	2											
		NS	8	15	15	9	1											
	Samuel W	WL	8	12	12	11	1			X								
		AW	7	30	19	28	2			X		X	X					
		HB	8	27	33	20	2					X						
		MM	6	66	41	61	2					X	X	X				
		mil268	7	16	8	14	2											
		EA	7	19	10	18	2					X		X				
W	MW	7	25	13	18	2												
Nancy	Nancy	BB	7	48	39	31	2				X	X						
		WM	8	22	15	18	2				X	X				X		
		DM	8	22	15	17	2				X	X				X		
		JM	8	18	11	15	2											
	SM	9	21	15	15	2				X								

As mentioned previously, the author initially tested with FTDNA at the Y-111 level and later upgraded to the Big Y-700 test which at this time results in a confirmed Haplogroup of I-FT336746. As mentioned previously, there are no Baker surnames found in the lists of Y-DNA matches at any level (except for DNA match DMB who is at the top of the list with a genetic distance of 2). The Carruthers surname is prevalent along with variations such as Carothers and Crothers. Other surnames that appear frequently are Dunning, Akers, Stainback and Colburn.

The project administrator of the Carruthers Group project suggested that the author join his group and for good reason. The administrator grouped the tests as to where they belong on the Y-DNA haplotree. The author is descended from the Mouswald line of the Carruthers.

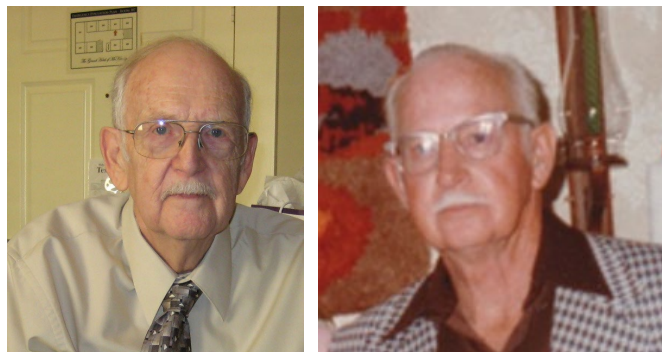
Eventually, another person, MEC, tested with Big Y-700 and shows up with the same confirmed haplogroup as the author with a genetic distance of 3. His mismatched markers are at DYS444, DYS715 and DYS504. All three are classified as fast mutators. The mismatched markers for DMB are at DYS710 which mutates very fast and DYS587 which mutates medium-slow

What is intriguing about MEC is that he is a direct descendant of Robert Pegel Carothers. As seen in Table 4, this path also exhibits the largest atDNA matches. With a genetic distance of 3, the MPE from Carothers to Baker could have occurred sometime in the 1700s and the author could be a descendant of Robert Pegel Carothers.

Summary

The original goal with DNA testing was to find the father of the author's great grandfather Charles Arthur Carpenter, nee Thompson. This study uncovered several instances of a misattributed parental event (MPE). With a clue given by a close DNA match of unknown relationship, a Baker family tree was generated. DNA testing of some of the author's sisters and brothers, his father and his uncle, showed that the Baker matches belong to the paternal line of the author's father. The first MPE is the discovery of the author's true grandfather, James Alton Baker. In the process of building out the Baker tree through conventional genealogical research, the author was able to link in a group of matches whose ancestor was an adoptee with unknown parentage (MPE 2). The most probable placement of the author's father and this sub-group in the Baker family tree has been confirmed using the What Are the Odds? (WATO) Tool in DNA Painter. Another subgroup of DNA matches can be shown to belong to the Baker tree using shared matching cluster analysis. This is a third MPE in that an unknown person is involved. In yet another twist, Y-DNA testing indicates a fourth MPE and that the author's parental line descends from John Carothers (d. 1796) of Scottish heritage, possibly through his son, Robert Pegel Carothers. The MPE could have occurred within a generation or two previous to the birth of Hiram Baker (1806-?), the author's third great-grandfather. Y-DNA results also demonstrate that Hiram Baker is not a descendant of Francis Baker of Yarmouth, Massachusetts, although Huldah Baker, wife of Hiram's son Levi, is.

They say a picture is worth a thousand words. Meet the author's father (left) and James Alton Baker. The similarities are striking.



Acknowledgements

The author wishes to thank his father and uncle for taking the Ancestry DNA test which established a half-brother relationship and pointed the paternal line in a different direction. Steve Colburn, a Carruthers Y-DNA group project administrator, must also be acknowledged for guiding the author to the right direction of my paternal lineage. Thanks must also be given to Baker DNA match DMB who agreed to do a Y-111 test from FamilyTreeDNA which has helped to confirm the haplogroup I-FT336746.

Conflicts of Interest

The author declares no conflicts of interest and no commercial interests in the subjects covered by this study.

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