McGrath DNA Project

Objective

To confirm the identity of the parents of Catherine (Kate) McGrath (1844-1928), wife of James Gleeson (1831-1917).

Background

The 1876 civil marriage record of James Gleeson and Kate McGrath (see below) states that Kate was 24 years old, daughter of a farmer named James McGrath, and living at Burgess, Tipperary at the time of her marriage. The marriage record also states that James Gleeson was 23 years old, but James was actually about 45 years old, so we cannot assume that Kate's stated age was accurate, although it suggests that she was born circa 1852.

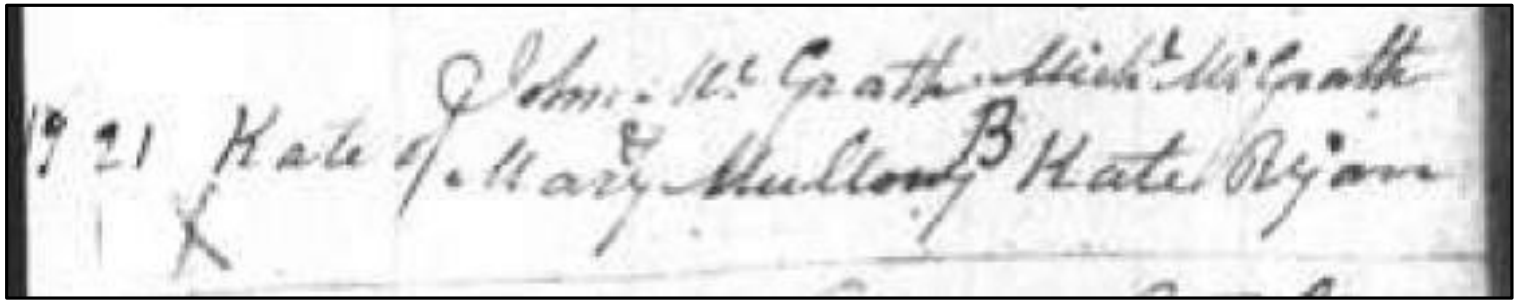
Name and Surname.	Age.	Condition.	Rank or Profession.	Residence at the Time of Marriage.	Father's Name and Surname.	Rank or Profession of Father.
James Gleeson	23 years	Bachelor	Farmer	Silvermines	Michael Gleeson	Farmer
Kate McGrath	24 years	Spinster	+	Burgess	James McGrath	Farmer

Kate died at Mucklin, Silvermines in 1928 and her son, Patrick Gleeson, stated to the registrar that his mother was 83 years old at the time of her death. This would suggest that Kate was born circa 1845. But did Patrick know how old his mother was, or did he simply give his best estimate?

Kate gave birth to her youngest child in 1887, so it is unlikely that she was born earlier than 1840, and assuming that she was at least 16 years old when she married, she would have been born before 1860, giving us a possible birth range of the years1840-1860.

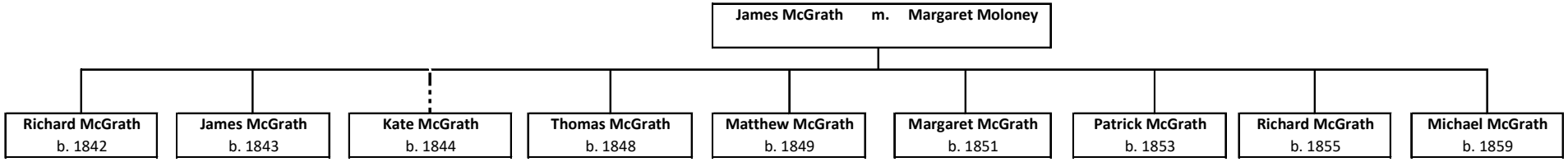
Burgess is in the Roman Catholic Parish of Youghalarra, and the parish register identifies eight possible baptisms, of Kate / Catherine / Kitty McGrath, between 1840 and 1860. Five of these families were resident at Burgess, but none of the eight McGrath children baptised had a father named James.

If we believe the age on Kate's death certificate (which suggests that she was born circa 1845), and assume that she was born at Burgess then the only likely baptism entry for a Kate McGrath in Youghalarra Parish was a baptism on 21 August 1844, daughter of John McGrath and Mary Mullony, with sponsors Michael McGrath and Kate Ryan (see entry below).



This entry shows Kate, born on 19 August and baptised on 21 August (1844), with the large letter B after the word Mullony likely signifying that they are residents of Burgess (the other register entries seem to have a B for Burgess or Y for Youghal after the surnames). There are no other children baptised in Youghalarra Parish with parents named John McGrath and Mary Mulloney, nor is there a record of John McGrath marrying Mary Mulloney in Youghalarra Parish.

There are however eight baptisms in Youghalarra of children of James McGrath and Margaret Moloney, and the Kate baptised in 1844 would fit well chronologically into this family (see chart below). The search was expanded to all of Ireland using the RootsIreland website, but no baptism was found for a Kate, daughter of James McGrath.



To further complicate the situation, no marriage has been found for a James or John McGrath to a Mary Mullony in Youghalarra or surrounding parishes.

It is hoped that autosomal DNA testing might identify descendants of Kate's siblings, which could help to confirm that Kate was a daughter of James McGrath and Margaret Mullony.

DNA Analysis

An initial review of my DNA matches at Ancestry, MyHeritage, 23andMe and FamilyTreeDNA did not identify any DNA matches showing descent from James or John McGrath & Margaret or Mary Moloney, although I have several DNA matches who have McGrath ancestors from Tipperary. In addition, I have many DNA matches at the various DNA testing companies, who have Tipperary ancestry but with whom I have not been able to identify the biological connection.

It could be that Kate McGrath had no siblings, that none of Kate's siblings had children, or that none of her siblings' descendants have researched & compiled an ancestral tree and taken a DNA test (it requires both in order to identify a common ancestor that we share with our DNA matches).

Second cousins are particularly useful in isolating shared DNA matches who are descendants of one set of grandparents from descendants of the other set of grandparents. I have two second cousins, Maureen Duncan and Mary Moore (nee Gleeson), who are descendants of other children of James Gleeson and Kate McGrath, and have taken the Ancestry DNA test. Neither of them is related to me on any other ancestral line for at least two generations back, so any shared DNA matches will likely be from Gleeson / McGrath common ancestors.

In 2022 I explored DNA matches to myself, who were also DNA matches to Maureen and Mary, and while this helped me to identify common ancestors of several of these people, I could not identify their connection to Maureen, Mary or myself. So, my research was put on hold, but the challenge often came to mind.

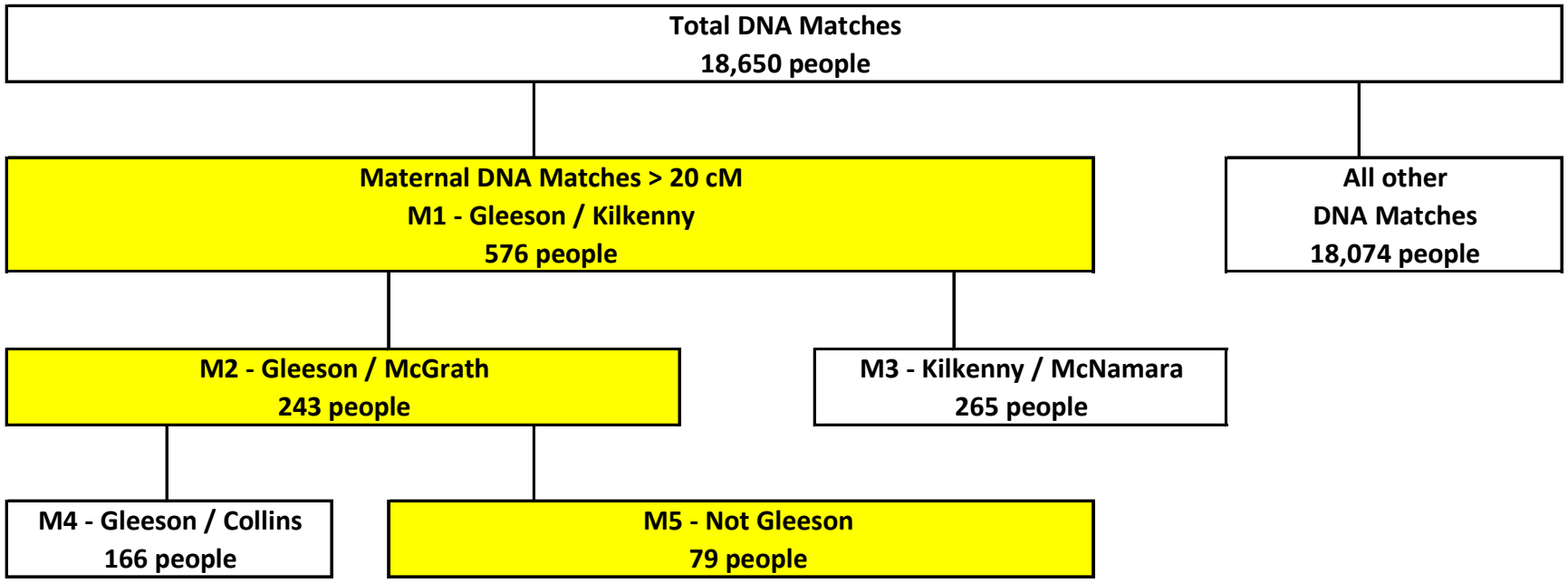
In thinking about the McGraths recently, I decided that looking for DNA matches shared by Maureen, Mary and myself might not be the best approach. Both of my maternal grandparents are from the Nenagh, Tipperary area and all four of Mary's grandparents are from that area, which could be mis-leading me, if DNA matches are related to us through more than one line of descent. Maureen on the other hand has only one grandparent from the Nenagh area, so her DNA matches are less likely to be confused by others from the area. So I decided to explore Maureen's DNA matches without reference to the DNA matches of Mary and myself.

Ancestry does a good job of splitting DNA matches into paternal-side and maternal-side, but they leave a lot of matches as Unassigned and some as Both (this is a premium "paid for" feature on Ancestry). The first step was to try and identify all of Maureen's maternal DNA matches (down to 20 cM) and assign them to a custom group, filtering out paternal matches. I named this group as "*M1 – Gleeson / Kilkenny*". This created a group of 576 people. This group was then filtered again, into those who share DNA with Maureen and known Gleeson relatives (group "*M2 – Gleeson / McGrath*") and those who share DNA with Maureen and known Kilkenny relatives (group "*M3 - Kilkenny / McNamara*"). The allocation of individuals to the M2 versus M3 groups may not be perfect but is adequate to give us two distinct groups to work with – one

being Maureen's mother's father (M2) and the other being Maureen's mother's mother (M3). I then ignored the M3 group and focussed on the M2 group, which included 238 people.

The M2 group includes several known second cousins (descendants of James Gleeson and Kate McGrath) and third cousins (descendants of James Gleeson's parents, but not McGrath relatives). I was therefore able to split the M2 group into an "*M4 – Gleeson / Collins*" group and an "*M5 – not Gleeson relatives*" group. These two groups contained 165 and 79 people respectively, with five close relatives being in both groups.

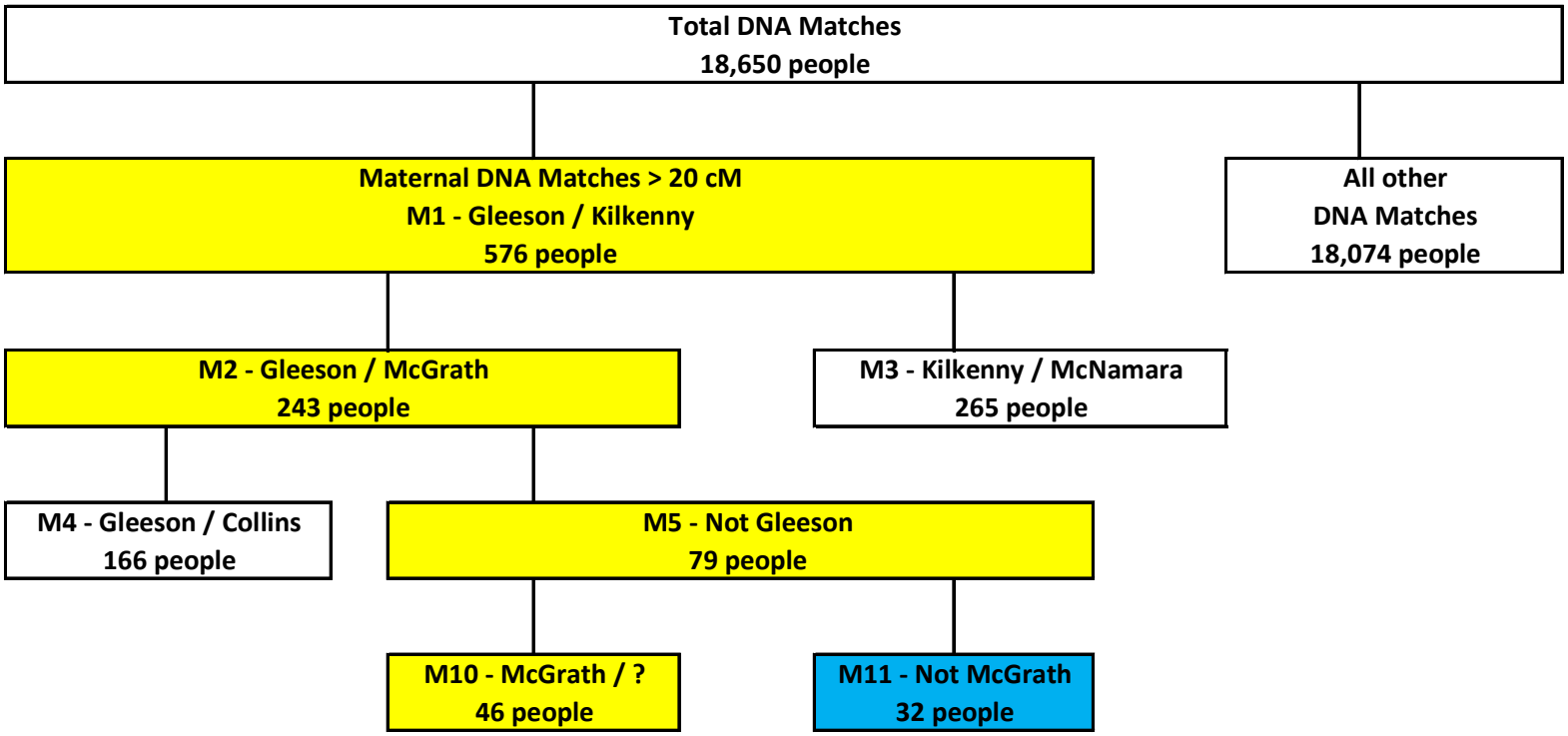
This filtering is shown in the chart below –



Filtering Out Gleeson and Kilkenny / McNamara DNA Matches

I then created a matrix of the people in the M5 group, looking at who shared DNA with Maureen and any of the others in the group, but ignoring matches closer than third cousins. This created two mutually exclusive groups of 46 people and 32 people who share DNA with Maureen and with others in their group, but not with anybody in the other group, after eliminating any who shared DNA with Maureen but not with any of the others. I labelled these two groups as M10 and M11 respectively.

Based on the research done in 2022, it was clear that the larger group contained many people with McGrath ancestry, while the smaller group did not have obvious McGrath ancestry. The two groups were therefore labelled as "*M10 – McGrath /* ?" and "*M11 – not McGrath*", as shown below –



Splitting McGrath and not McGrath DNA Matches

I then completed the same exercise on my own DNA match list and Mary's match list, to facilitate cross-referencing between Maureen's, Mary's and my DNA match lists, and the result is shown below –

Maureen	M1 - Gleeson / Kilkenny	576	M2 - Gleeson /McGrath	238	M5 - Not Gleeson	79	M10 - McGrath 46 M11 - Not McGrath 32
Jim	M1 - Sherlock / Gleeson	612	M3 - Gleeson /McGrath	162	M7 - Not Gleeson	66	M14 - McGrath 29 M15 - Not McGrath 37
Mary	P1 - Gleeson / Ryan	480	P2 - Gleeson /McGrath	252	P5 - Not Gleeson	177	P10 - McGrath 148 P11 - Not McGrath 14

Breakdown of McGrath / Not McGrath DNA Matches

As I went through this analysis, I did note that several of my known Sherlock / Ryan DNA matches share DNA with members of the *Not McGrath* group, suggesting that I also have a connection to this group on my Sherlock / Ryan ancestral line. Similarly, when analysing Mary's DNA matches, I found that her *McGrath* group contains 17 people identified by Ancestry as being either on her maternal side or on both sides, suggesting that Mary also has a McGrath connection in her mother's ancestry. This analysis supports my decision to focus on Maureen's DNA matches to avoid being confused by possible dual lines of descent, using Mary's and my DNA matches only as points of cross-reference. I was now ready to review the ancestry of Maureen's *McGrath* and *Not McGrath* DNA matches.

McGrath DNA Connections

The DNA analysis suggests that Maureen has 46 DNA matches who are likely connected to her through a common McGrath ancestor. Not all of these DNA testers have Ancestry trees, and none have trees that go back far enough to be able to immediately connect them all (along with Mary and myself) to a common ancestor. Twenty of the 46 matches had Ancestry trees and 16 of those had McGrath ancestry in their tree. The remaining four did not have McGrath ancestry in their tree, but show descent from Eliza Ryan (1856-1942) and Matthew Ryan (1850-1933). Matthew Ryan was a son of Matthew Ryan and Anne McCormack. Eliza Ryan was a daughter of Thomas Ryan (1828-1903) and Mary Hughes (1831-1903) of Mucklin. These 20 DNA matches are shown in the chart on the next page, which also shows the amount of DNA that each of them shares with Mary and myself.

		cM of DNA Shared					
Ref.	Match Name	Maureen	Jim	Mary	Tree?		Notes
1	Anthony Connell	37		24	limited	Australia	descended from Michael Hayes and Margaret McGrath
2	P.M.	32	26		yes	MI, USA	descended from Tom Ryan and Mary Hughes
3	aldens160	32	10		yes	VT, USA	descended from Eugene (Owen) McGrath and Bridget McGrath
4	Ann Mitchell	32	16		yes	MI, USA	descended from Tom Ryan and Mary Hughes
5	Lisa Ryan	31	16		yes	MI, USA	descended from Tom Ryan and Mary Hughes
6	odonnellmr56	31		44	yes	NZ	descended from James McGrath and Julia Hurley
7	Maria Rivett	29		19	yes	NZ	descended from James McGrath and Julia Hurley
8	jeffrey delaney	29		72	yes	Australia	descended from Edward McGrath of Nenagh (b. 1815)
9	Delaneson	28	13		yes	Australia	descended from Annie McGrath (b. 1874 NSW)
10	Vicki Simpson	25	18		yes	Australia	descended from Margaret McGrath and Patrick Hogan
11	P.R.	24			yes	NZ	descended from James McGrath and Julia Hurley (son of Maria Rivett)
12	Marianne McGrath	23	9	23	yes	Ireland	descended from Matthew McGrath
13	doreena ross	22		32	private		
14	John Burke	21	16	21	yes	Ireland	descended from John McGrath and Nora Carr (m. bef 1935)
15	Ralph Mitchell III	21	10		no	MI, USA	descended from Thomas Ryan and Mary Hughes
16	John Cunningham	20	10	21	yes	Australia	descended from Margaret McGrath and Patrick John Hogan
17	Rachel Weiner	20		33	yes	England	descended from Patrick Hickey b. 1894; she is a sister of Doreena Ross and daughter of gbaron120
18	thefarm159	19	13	58	yes	NZ	descended from James McGrath and Julia Hurley, son of Matthew McGrath and Mary Maloney
19	bhopkins0	16	15	24	yes	NY, USA	descended from Matthew McGrath and Bridget Woods
20	danhogan13	14	15		yes	Australia	descended from Margaret McGrath and Patrick John Hogan

Maureen Duncan's McGrath DNA Connections

Unfortunately, I was not able to confirm how these various lines connected together. I created a chart showing these 20 people plus a few others that I identified as being connected to these lines, but the chart is too large to insert into this document, so will have to be in a separate electronic file. The reference numbers shown in the left column of the chart above, refer to the circled numbers shown on the large chart of Maureen's McGrath DNA Connections.

Maureen's closest DNA match from this McGrath group is Anthony Connell, whose tree shows him descended from a James and Margaret McGrath, through their daughter, Margaret McGrath, born circa 1844. This James and Margaret McGrath are unlikely to be the parents of my great grandmother, Kate McGrath, as James McGrath and Margaret Moloney, her most likely parents, had a daughter named Margaret, born circa 1851. In addition, the 37 cM of DNA shared by Maureen and Anthony is more indicative of a fourth cousin relationship, rather than the third cousin relationship suggested by this possible connection.

With no strong indicators of Kate's McGrath's connection to these DNA matches, I moved onto the *Not McGrath* group.

Not McGrath DNA Connections

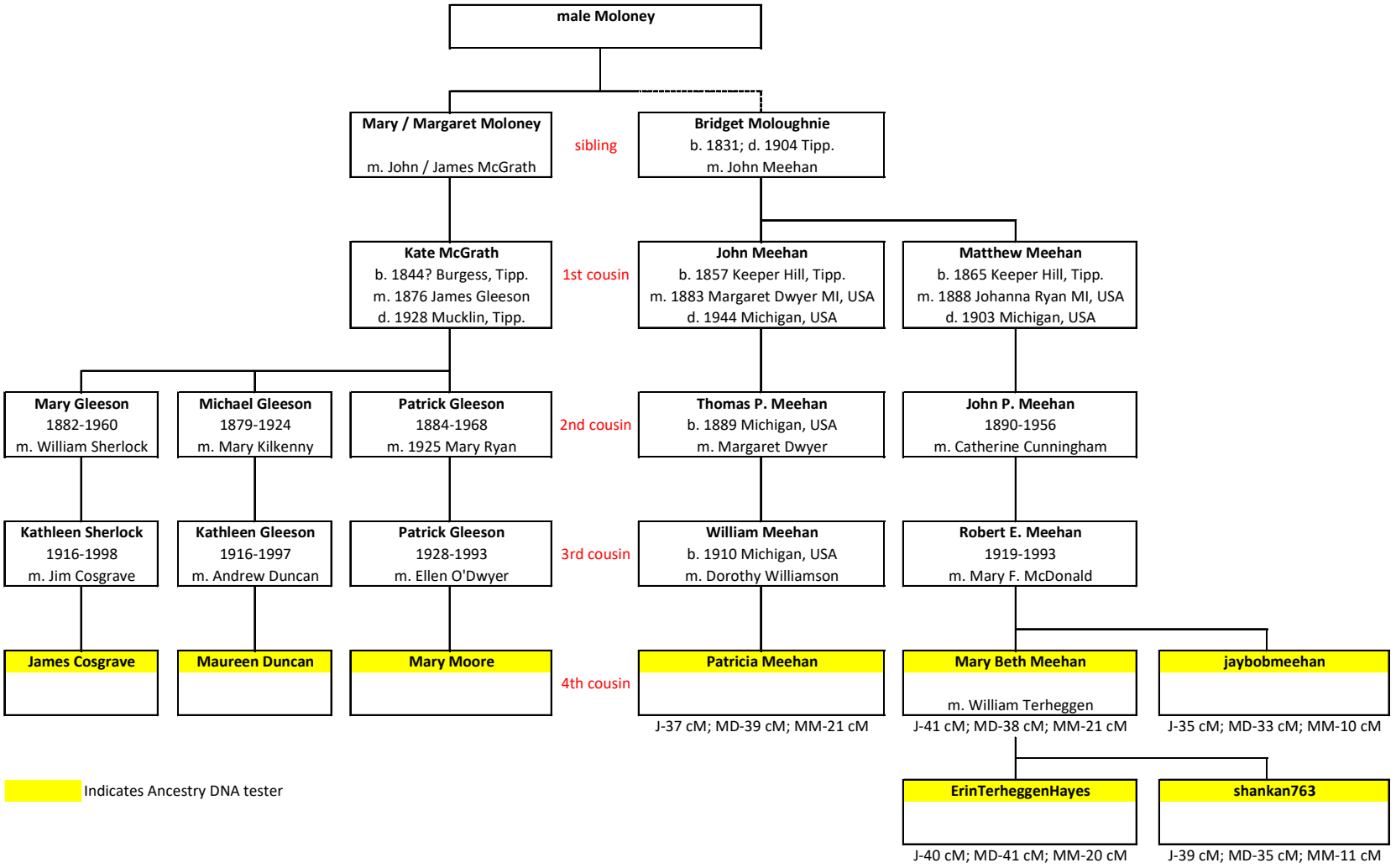
The DNA analysis suggests that Maureen has 32 DNA matches who are likely connected to her through a common ancestor who is not a McGrath, but whose descendant married a McGrath. As in the case of the McGrath connections, not all of these DNA testers have Ancestry trees, and none have trees that go back far enough to be able to immediately connect them all (along with Mary and myself) to a common ancestor. Twelve of the 32 DNA matches in this group have Ancestry trees, with the surname Ryan being common in the trees, but Ryan is a very common Irish surname.

I was however able to connect five members of the group, who all appear to descend from a common Meehan ancestor (John Meehan) who lived in the area around Keeper Hill, Tipperary in the mid-1800s. At least one online tree suggests that John Meehan was married to Bridget Moloughnie, whose family were from Newport, Tipperary, but other online trees suggest that this surname may be McLoughlin.

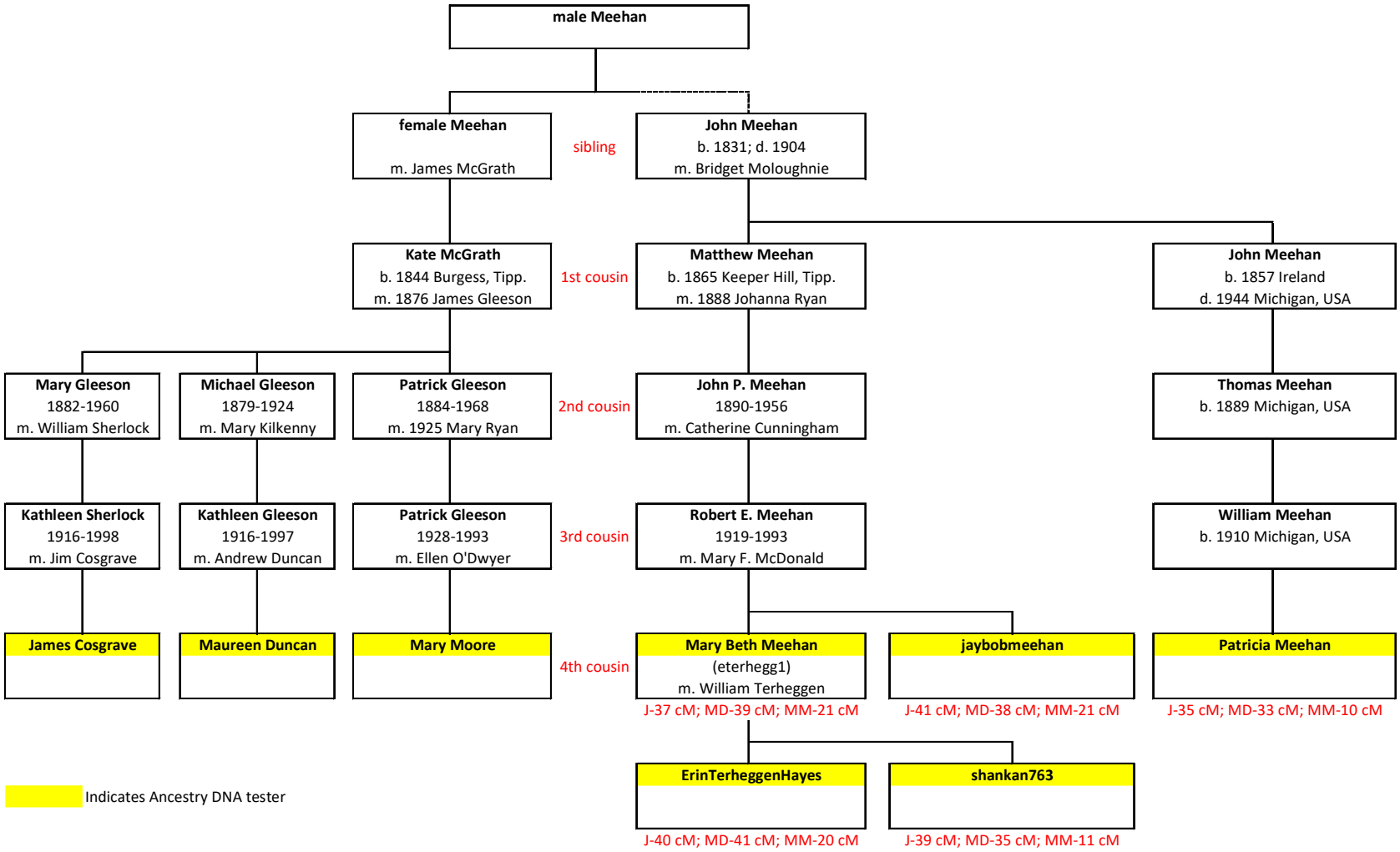
It is therefore very likely that Kate McGrath shared a common ancestor with either John Meehan or Bridget Moloughnie / McLoughlin. Given the similarity of the surnames Moloney, Mulloney and Moloughnie, we may tend to expect our connection to this group to be on the Moloney side, but it is equally possible that the connection is on the Meehan side. The two charts on the following pages identify potential relationship scenarios.

In both of these scenarios, Maureen, Mary and myself would be fourth cousins of Mary Beth Meehan, and on average at that relationship level, we would expect to share 45 cM of DNA with Mary Beth, with a possible range of 0 to 139 cM. So both of these scenarios are genetically possible, and close to the average expected.

As on the McGrath side, there is no obvious connection of this group of DNA matches to my great grandmother, Kate McGrath, but it looks likely that Kate McGrath's mother was either a Mulloney or a Meehan.



Possible Moloney Relationship.



Possible Meehan Relationship.

Conclusions

1. Maureen, Mary, and myself do not appear, at this time, to have any third cousin Ancestry DNA matches, who are related to us on the McGrath / Moloney line.
2. DNA testing has not proved Kate McGrath's descent from James McGrath and Margaret Moloney, but it has not disproved such a connection either.
3. The foregoing DNA research suggests that we likely have 4th cousin DNA matches on both the McGrath ancestral line and either a Moloney or Meehan ancestral line, so it is likely that Kate McGrath was a daughter of James McGrath and Margaret Moloney.
4. Our best hope for clarifying the parentage of Kate McGrath is that a 3rd cousin on the McGrath / Moloney line takes the Ancestry DNA test.

Jim Cosgrave
13 November 2023

Addendum 1 – Introduction to Shared cM for Various Relationships

Human beings have roughly 7000 centi-Morgans (cM) of autosomal DNA, of which they receive half from each parent, so a child shares about 3500 cM of DNA with each parent. The DNA is not received as one continuous string of DNA, but in intermingled pieces known as segments.

As relationships become more distant, two people will share less and less DNA, in fewer segments, and the possible range of the amount of shared DNA will increase. It is possible (5%) that third cousins (3C) will not share any DNA, and by fifth cousins (5C) it is more likely that they will not share any DNA. However, there is still a 1% chance of eighth cousins (8C) sharing measurable DNA, as shown in the chart below -

Relationship	Likelihood of sharing DNA	Average cM	cM Range
1C	100%	866	396-1397
2C	100%	229	41-592
2C1R	100%	122	14-353
3C	95%	73	0-234
4C	70%	35	0-139
5C	32%	25	0-117
6C	11%	18	0-71
7C	3%	14	0-57
8C	1%	11	0-42

DNA is therefore of huge benefit in confirming the researched paper trail of our ancestors. If two people have researched their ancestry back to a common ancestor, and subsequently they find that they share DNA with each other and with other known relatives, then it is likely (but not certain) that they do indeed share the researched common ancestor – a person will be identified as a shared DNA .match of two other people if they share DNA with each of the other two, but it is not necessarily DNA from a common ancestor (C shares a common ancestor with A and a common ancestor with B, but not necessarily the same common ancestor).

The various DNA testing companies generally tell you how many cM of DNA you share with each DNA match and the number of segments shared. 23andMe shows the amount of shared DNA as a percentage of total DNA (7000 cM).

Ancestry has the largest database of autosomal DNA tests (around 22 million), and in most situations will yield the most DNA relatives. A large proportion of Ancestry's DNA tests are from North American customers, including a large number from the Irish diaspora.

The chart below shows the average, and possible range, of shared DNA for a myriad of relationships and is a handy reference when looking at new DNA matches. e.g. if a DNA match shares 230 cM of DNA with you, they are most likely to be a second cousin (2C), but they could be a first cousin twice removed (1C2R) or a half first cousin once removed, etc.