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Y-DNA PROJECTS: CLAN, TRIBE, AND HOUSEHOLD: Y-DNA & ONE NAME STUDIES

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Clan, Tribe and Household: Y-DNA & One Name Studies

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Abstract

The Greeff Y-DNA project set out to prove the hypothesis that all members of the global Greeff clan are related. The hypothesis was predicated on the common observation that virtually all Greeff people are descended from a German emigrant. This presupposed a single original family. The quest was to identify a 'viable' most recent common ancestor ("MRCA"). By 'viable' it was clearly understood that "The Original Greeff Progenitor" was being sought. One man, the first Greeff. The project proved exactly the opposite of what it set out to do. The Greeff clan members are not related to each other. The clan consists of many separate and unrelated great families. The project showed that new families are constantly being created by variations on the 'non-paternal event' theme. Greeff clan members acquired their Y-DNA heritage from a very wide array of sources. Moreover, new Y-DNA is constantly being introduced from other surnames. New families within the clan were created by cross-cutting cleavages that simultaneously unite and isolate unrelated 'tribes' within every one-name clan. These cross-cutting cleavages include surnames, genes, Y-DNA, race, geography, culture and religion. The Greeff Y-DNA study demonstrated that Y-DNA divides the clan instead of uniting it. The implications are clear for all one name studies: it is extremely unlikely that any global clan can, over three or four centuries, avoid new Y-DNA being introduced into its ranks. The project demonstrated that all one name studies must deal with a wide variety of different genetic families that share a common clan name. Y-DNA analysis makes one thing abundantly clear: The clan is one in name only.

Introduction

The Greeff Y-DNA project set out to prove the hypothesis that all members of the global Greeff clan are related. The hypothesis was predicated on the common observation that virtually all Greeff people could trace their ancestry back to an emigrant from Germany. This universally-common origin pointed to one common ancestor, from whom the entire clan is descended. The quest was to identify a 'viable' most recent common ancestor ("MRCA"). By 'viable' it was clearly understood that "The Original Greeff Progenitor" was being sought. One man, the first Greeff, a person who lived in Germany in the past 500 years, or at any rate more recently than the death of Genghis Khan.

A subsidiary hypothesis was that one can expect a match between surnames and Y-chromosomes. This is useful in mapping out the links between people previously assumed to be unrelated. For instance, Dr. Eugene Foster¹ has shown that a Jefferson close to Thomas must have fathered a male child with a slave because a male descendant of an unbroken chain of male descendants has the same Y-chromosome as white descendants of Jefferson. This study found a similar case regarding Matthias Greeff². On the other hand we found such widely differing Y-DNA profiles that it was clear that some Greeff people are clearly not descended from a MRCA in the past 1,000 years.

Because of these hypotheses it must be made clear that the study is solely concerned with relatively recent Y-DNA of the sort that could possibly be supported by BMD³ records. Haplogroups, autosomal DNA,

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¹ http://en.wikipedia.org/wiki/Jefferson_DNA_data

² This project used exactly the same technique to show that one of the early Greeff men had a child by a slave woman, thus giving rise to a Greeff tribe of a different race.

³ Birth, Marriage and Death.

Mitochondrial DNA and other conventional relationships were disregarded.

DNA has two peculiar properties: It is the same as that of our ancestors, and it is different from that of our ancestors. Because it is the same we also have two eyes, two ears and one nose. Because it is different we are different from our parents. Genetic mutations are normal and natural, and they are part of progress and evolution, and thus we have a greater capacity for language and communication than our primitive ancestors had a million years ago. The Y-chromosome has, in fact, a higher mutation rate than other chromosomes (Sykes 2004). In human genetics each marker will mutate roughly once in 500 generations (Kerchner 2008). But the more markers one examines in one go, the better the chances of finding a mutation. When working with 43 markers it is like throwing 43 dice simultaneously, so one sees many mutations, which is useful because the different mutations allow one to define different branches of a family tree. When comparing 43 marker profiles about one in every twelve births will show a mutation – not one in 500⁴.

Because this project set out to use Y-DNA to demonstrate that all Greeff people are related, but proved the opposite, we were forced to define what is meant by clan, tribe and household, in order to distinguish between related families and unrelated families very clearly.

We have been able to identify nine completely different Greeff family trees, which we categorised as various Greeff tribes. This means that the Greeff clan is made up of at least nine different tribes, each containing many households. For this study they are defined so:

Clan: All Greeff people in the world. Greeff by name, or genes, or birth, or marriage, or adoption.

Tribe: These are Y-DNA tribes; groups of Greeff people who are related to each other through Y-DNA, including great uncles and fourth cousins seven times removed. In this sense a tribe is usually a very large

subdivision of the clan. Different Greeff tribes are not related to each other by Y-DNA.

Household: Mum, Dad and kids. Households seem simple, but they can be very complex when each husband married three times and each wife married three times, and all possible couples had children. It gets worse when a mother's children from a former marriage take on a Greeff stepfather's surname. This household situation is one of the ways in which new Greeff tribes are created.

The Aim and Objectives of the Greeff Y-DNA Study

Greeff people all over the world generally descend from someone who emigrated from Germany. This led to the hypothesis that the Greeff clan members should all have the same Y-DNA. The main aim of the Greeff Y-DNA Project was to confirm that all members of the worldwide clan are genetically related.

The paper BMD records certainly pointed at one common ancestor from Germany. There is no evidence that Greeff was a vocational or widely adopted surname, like Baker, Bakker, Smit, Schmidt or Smith. The paper evidence all pointed in one direction, to one common origin. To one man, it seemed.

One of the other main objectives was to create a genetic profile for each of the immigrant progenitors, so that the Y-DNA of any Greeff man could easily be sorted into a main category, and in this the project succeeded.

Another objective was to try to get at least three generations represented in a vertical sample. The project succeeded in getting Y-DNA from three consecutive generations in four cases: Oppel Bernhard Willem Greeff, Jacobus Maree Greeff, Markus Servaas Greeff and Andre Servaas Greeff (See illustration 3).

Research Methodology

The foundation of this Y-DNA project is solidly bedded in paper records that span more than three centuries, many countries, both hemispheres, and which were recorded in several different languages, including archaic forms no longer in common use. The documents presented challenges because of handwriting, and special scripts like Gothic print and Suetterlin, which was taught in German schools from 1915 to 1941. These documents include a family tree of the clan that has been built from many sources, including:

➤ “Geschichte der Familie Greeff aus der Huckenbach”, a book written by Prof Victor Bredt and published in Germany in 1941. The book was translated into English by Viljoen Greeff and Francois Greeff in 2009.

⁴ Given one mutation PER MARKER every 500 generations, what is the probability of having a mutation in any one of 17 markers? This is calculated by finding the probability of NOT having a mutation, which is 499 over 500 to the power 17 = 0.966538598 Subtract this from 1, and you get the probability of a mutation at any given point in the Y-DNA train, on a comparison of 17 markers. The result is 0.033461402, or roughly three and one third of a percent (3.33%), which is not that rare – one in 30 births. What then, is the probability of a mutation in any one of 43 markers? One minus [(499 over 500) to the power 43] = 1 – 0.917515216 = 0.082484784 (Or roughly 8.2% of births.) In the case of a 43 marker comparison, one out of every 12 sons will have one marker that is different from the profile of his father.

Name	D YS 19	DY S38 5a	DY S38 5b	DY S38 9I	DY S38 9II	DY S39 0	DY S39 1	DY S39 2	DY S39 3	DY S43 8	DY S43 9	DY S43 7	DY S44 8	DY S45 6	DY S45 8	GATA C4/DYS 635	GAT A H4
Oliver Greeff	15	11	14	13	28	24	11	14	13	12	13	15	19	15	16	23	13
Chris Greeff	15	11	14	13	28	24	11	14	13	12	13	15	19	15	16	23	13
Klaus Greeff	15	11	14	13	28	24	11	14	13	12	12	15	19	15	16	23	13
Talon Greeff	14	11	15	13	29	24	11	13	13	12	12	15	19	15	17	23	11
Francois Andre Greeff	14	11	13	13	30	24	10	13	13	12	11	15	19	16	17	23	12
Desmond Greeff *2004	14	11	13	13	30	24	10	13	13	12	11	15	19	16	17	23	12
Markus Servaas Greeff 1980	14	11	13	14	31	24	10	13	13	12	11	15	19	16	17	23	12
Jacobus Willem (Koos) Greeff	14	11	13	14	31	24	10	13	13	12	11	15	19	16	17	23	12
Servaas Willem Johannes Greeff 1931	14	11	13	14	31	24	10	13	13	12	11	15	19	16	17	23	12
Andre Servaas Greeff *1939	14	11	13	14	31	24	10	13	13	12	11	15	19	16	17	23	13
Servaas Willem Johannes Greeff 1969	14	11	13	14	31	24	10	13	13	12	11	15	19	16	16	23	13
Andre Servaas Greeff *1994	14	11	13	14	31	24	10	13	13	12	11	15	19	16	16	23	13
Philip George Greeff *1996	14	11	13	14	31	24	10	13	13	12	11	15	19	16	16	23	13
Jacobus Maree Greeff	14	11	13	13	30	24	10	13	13	12	11						
Gabriel Johannes (Jan) Greeff 1943	14	11	13	13	30	24	10	13	13	12	11	15	19	17	17	23	12
Caspar J B Greeff	14	11	13	13	30	24	10	13	13	12	11	15	19	16	17	23	12
Louis Francois Greeff, Pretoria	14	11	13	13	30	24	10	13	13	12	11	15	19	16	17	23	12
Eugene Greeff, Eshowe	14	11	13	13	30	24	10	13	13	12	11	15	19	16	17	23	12
Prof Oppel Greeff	14	11	13	13	30	24	10	13	13	12	11	15	19	16	18	23	12
Douw Gerband Steyn Greeff	14	11	13	13	30	24	10	13	13	12	11	15	19	16	18	23	12
Willem Hendrik Greeff	14	11	13	13	30	24	10	13	13	12	11	15	19	16	18	23	12
Jacobus Johannes Greeff 1929	14	11	13	13	30	24	10	13	13	12	11	15	19	16	18	23	12
Awie P Greeff	14	11	13	13	30	24	10	13	13	12	11	15	19	16	17	23	12
Barend Frederik Gustav (Gus) Greeff	14	11	13	13	30	24	10	13	13	12	11	15	19	16	17	23	12
Chris Greeff, SA	14	11	13	13	30	24	10	13	13	12	11	15	19	16	18	23	12
Louis Egbert Greeff (Arendsnes)	14	11	13	13	30	24	10	13	13	12	11	15	19	16	17	23	11
Shawaan Greeff	14	11	13	13	30	24	10	13	13	12	11	15	19	16	17	23	12
Tertius Thompson Greeff	14	11	13	13	30	24	10	13	13	12	11	15	19	16	16	23	12
Pieter Jurgens Andries Greeff 1983	14	11	13	13	30	24	10	13	13	12	11	15	19	16	17	23	12
Burger Greeff *1964	14	11	13	13	30	24	10	13	13	12	12	15	19	16	17	23	12
Casparus Johannes Greeff (Dentist)	14	11	13	13	30	24	10	13	13	12	11	15	19	16	17	23	12
Petrus Jacobus (Peet) Greeff	14	11	13	13	30	24	10	13	13	12	11	15	19	16	17	23	12

Willex Daniel Greeff Vishoek	14	11	13	13	30	24	10	13	13	12	11	15	19	17	17	23	12
Ragadeen Greeff	14	11	13	13	30	24	10	13	13	12	11	15	19	16	17	23	12
Louis Echbert Greeff (Pta)	14	11	13	13	30	24	10	13	13	12	11	15	19	16	17	23	12
Gabriel Pieter Jacobus (Pierre) Greeff	14	11	13	13	30	24	10	13	13	12	11	15	19	16	17	23	12
Hendrik Jacobus Greeff	14	11	13	13	30	24	10	13	13	12	11	15	19	16	16	23	12
Matthew Thomas Greeff	14	11	13	13	30	24	10	13	13	12	11	15	19	16	16	23	12
Hermanus Stephanus	14	11	13	13	30	24	10	13	13	12	11	15	19	16	17	23	12
Jacques Armand Greeff	14	11	14	13	31	23	11	13	12	12	12	15	19	16	16	23	12
Colin Raymond Tyler	14	11	14	13	29	24	11	13	12	12	12	16	19	15	16	23	12
Corrie Greeff, Oudtshoorn 0008	13	17	18	13	30	25	9	11	14	10	13	14	20	15	16	22	11
Bernard Lawrence Greeff (VJ)	15	16	16	14	30	24	10	12	15	10	11	14	20	14	16	21	11
Jacobus Viljoen Greeff	15	16	16	14	30	24	10	12	15	10	11	14	20	14	16	21	11
Gideon Greeff 1956	15	16	16	14	30	24	10	12	15	10	11	14	20	14	16	21	11

Orange = Huckenbach descendants in Germany, Switzerland and America; Blue = Holland; Red = Matthias Greeff, South Africa 1680; White = Unmatched samples (Colin Tyler was selected as a non-Greeff control); Yellow = Friedrich Greeff, South Africa.

Illustration 1: The sample over 17 markers.

	D Y S 3 8 8	D Y S 4 2 6	D Y S 4 4 1	D Y S 4 4 2	D Y S 4 4 4	D Y S 4 4 5	D Y S 4 4 6	D Y S 4 4 7	D Y S 4 4 9	D Y S 4 5 2	D Y S 4 5 4	D Y S 4 5 5	D Y S 4 5 9	D Y S 4 5 a	D Y S 4 5 b	D Y S 4 6 0	D Y S 4 6 1	D Y S 4 6 2	D Y S 4 6 3	D Y S 4 6 a	D Y S 4 6 b	D Y S 4 6 c	D Y S 4 6 d	G A T A A 10	G G A A T 1B 07	Y C A A II a	Y C A A II b	G A T A H 4
Name	8	6	1	2	4	5	6	7	9	2	4	5	a	b	0	1	2	3	a	b	c	d	10	07	a	b	4	
Chris Greeff	1 2	1 2	1 5	1 7	1 2	1 2	1 3	1 5	2 9	2 3	1 1	1 1	1 9	1 0	1 1	1 1	1 2	1 1	2 4	1 5	1 5	1 5	1 9	15	10	9	2 3	13
Klaus Greeff	1 2	1 2	1 5	1 7	1 2	1 2	1 3	1 5	2 9	3 0	1 1	1 1	1 9	1 0	1 1	1 2	1 1	2 4	1 5	1 5	1 5	1 9	15	10	9	1 3	13	
Talon Greeff	1 2	1 2	1 5	1 7	1 2	1 2	1 3	2 5	3 1	3 0	1 1	1 1	1 9	1 0	1 1	1 2	1 1	2 4	1 5	1 5	1 6	1 7	13	10	1 9	2 3	11	
Franc ois Andre Greeff	1 2	1 2	1 4	1 7	1 2	1 2	1 4	2 5	2 9	3 0	1 1	1 1	1 9	1 9	1 1	1 2	1 1	2 4	1 5	1 5	1 6	1 6	14	10	1 9	2 3	12	
Desm ond Greeff *2004	1 2	1 2	1 4	1 7	1 2	1 2	1 3	2 5	2 9	3 0	1 1	1 1	1 9	1 9	1 1	1 2	1 1	2 4	1 5	1 5	1 5	1 6	14	10	1 9	2 3	12	
Berna rd Lawre nce Greeff (VJ)	1 3	1 1	1 4	1 7	1 4	1 0	1 0	2 4	2 7	3 2	1 1	1 1	1 8	1 0	1 1	1 2	1 2	2 3	1 4	1 6	1 6	0	14	11	1 9	2 1	11	

Illustration 2: Additional markers from 43-marker analysis.

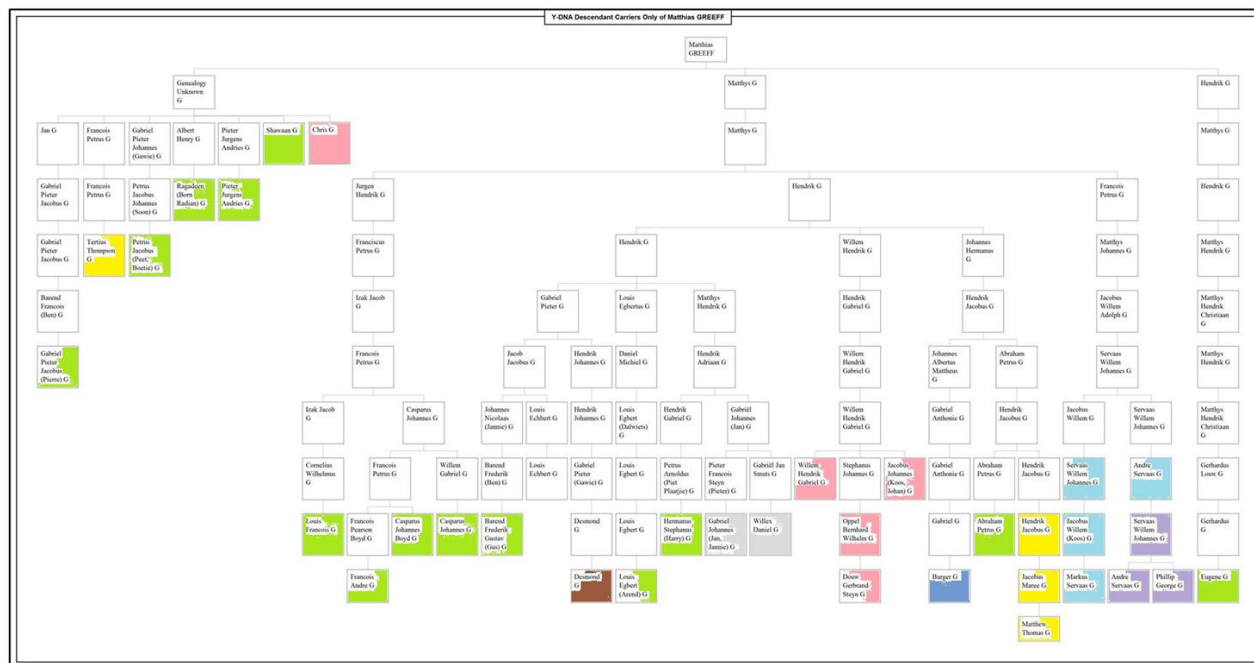


Illustration 3: Descendants of Matthias Greeff, colour coded by minor mutations in their otherwise matching Y-DNA profiles.

➤ “*Geshichte der Familie Greeff aus der Huckenbach*”, a book written by Prof Victor Bredt and published in Germany in 1941. The book was translated into English by Viljoen Greeff and Francois Greeff in 2009.

➤ About ten thousand photos of Greeff documents from around the world, but predominantly Greeff death records from South Africa which were photographed by Lee Greeff in Pretoria.

➤ Family trees to which thousands of people contributed information, collected predominantly by Andre Servaas Greeff, Louis Echbert Greeff, Louis Egbert Greeff, Rina Greeff, Natanja Greeff, Alisan Greeff, Ida Greeff, Janet Melville, Jan (Gabriel Johannes) Greeff, Jaco Maree Greeff, Lucas Rinken, Francois Greeff and the late Victor Bredt.

➤ Facebook. We searched for Greeff people on Facebook, and made contact using Facebook. A Google search finds people, but does not provide a means of contact. Ragadeen and Shawaan Greeff, among others, joined the project through Facebook.

Using these records the clan was divided into various branches, mainly geographical, and a ‘wish list’ was

created so that representatives from all known branches could be asked for a Y-DNA sample. About 80% of the Greeff clan hails from South Africa, about 10% from Germany, and about 10% from America. The term “hails from” is used to include minor or recent migrations. The 11 countries that were represented by the participants are: Australia, South Africa, Zimbabwe, Namibia, Cuba, America, Great Britain, The Netherlands, Switzerland, Germany and Qatar. In Illustration 4 is shown the initial wish list that was constructed.

In this study we did two types of analysis. For some people we were able to analyse and compare 43 STR markers, and for the remainder we studied 17 markers. Seventeen markers are perfectly adequate to illustrate which tribe of the Greeff clan a person belongs to.

The 43 marker tests were done by DNA Heritage (<http://www.dnaheritage.com/>). Seven samples were submitted, of which one failed to produce a result.

The 17 marker tests were done by Prof Dawid Welgemoed and Yolanda Harris at the Medical University of South Africa (Medunsa, also known as the University of Limpopo), using an AmpFℓSTR Yfiler PCR Amplification Kit containing 17 Y-STR loci in a single PCR reaction, supplied by Applied Biosystems.

	Main Geographic Branch	Main Genetic Branch	Selected Subjects
1	SA - Matthias Greeff	Jurgen Hendrik Greeff *c. 29 Mar 1739; x MM Joubert	1. Francois Andre Greeff 2. Jerry or Adam or Brady (in America) 3. Werner Kruger or Nelius or Corne or Hanno or Zacko
2		Hendrik Greeff *1742; x Beatrix Lategan	3. Jaco or Cars or Wilhelm 4. Douw Gerbrand Steyn Greeff 5. Rocco or Pio 6. Pieter Francois Steyn or Henno 7. Hendro Adriaan (Ireland) 8. Petrus Arnoldus or Glen or Daniel or Peet 9. Gus or Juan or Jason 10. Schalk Willem or Marius 11. Hendrik Petrus or Christiaan or Ferdinand or Pieter or Marius
3		Francois Petrus Greeff *1746; x JE De Villiers	12. Francois Friedel Nico or Jacques or Marcus (or Koos) 13. Philip George or Andre Servaas Greeff
4		Hendrik Greeff *1766 x AC Lambrechts	14. Thys or Eugene (Ilana)
5		Facebook Branch. Two, three or four families. The relationships between them are not clear yet.	15. Eric John Greeff or Laurence Kenneth Greeff 16. Jonathan Greeff or Rudi Greeff or Antin Greeff or Matthew Greeff or Rory Greeff or Nathaniel Greeff 17. Shawaan or Ebrahim or Ragadeen Greeff, 18. Benwin Greeff 19. Griffith Greeff 20. Jody Greeff or Jade Greeff
6	SA - Friedrich Greeff	Willem Hendrik Greeff *1789, x Cornelia D Lotter	21. Bernard or Lawrence (VJ's sons) 22. Cornelius Johannes G or Viljoen Greeff 23. Christiaan or Willem (Esther x Jack Uren)
7		Nicolaas Jacobus Johannes Greeff *1797, x MF Erasmus	No known descendants.
8	America. Ernst Hugo Greeff *26.3.1830 -	(Ernst Hugo Greeff)	24. Chris Greeff
9	Germany. Clemens Greeff	(Clemens Greeff)	25. Klaus Greeff 26. Dirk Greeff
10	Genetic descendants of Brnjac.	Adopted into the Greeff family.	27. Ben Francois or Jacques Armand AND 28. Leon.

Illustration 4: Sampling wish list.

The laboratory worked in a two stage process, in which a QIAamp DNA Mini Kit is used to extract DNA from the buccal swab and then an ABI 310 Genetic Analyzer is used for the sample analysis. Thirty samples were submitted, of which 5 failed to produce a result on a first extraction, with one of these producing a sample on a second extraction, leaving four samples that produced no result.

Both laboratories were unaware of the identities of the people who submitted samples, and samples were identified by code numbers.

The international standard for illustrating Y-DNA matches is in a table of numbers that are colour coded, but these are very frequently confusing for beginners, who cannot interpret the meaning of the numbers. The Greeff Y-DNA project used superimposed graphs that easily and very quickly showed differences in markers, or perfect matches in profiles. The important thing in these graphs is not the amount by which markers disagree, but the mere fact that there is a difference at all. A comparison of Francois to Bernard (Illustration 5) shows so many differences that it is patently obvious that they belong to completely unrelated tribes of the Greeff

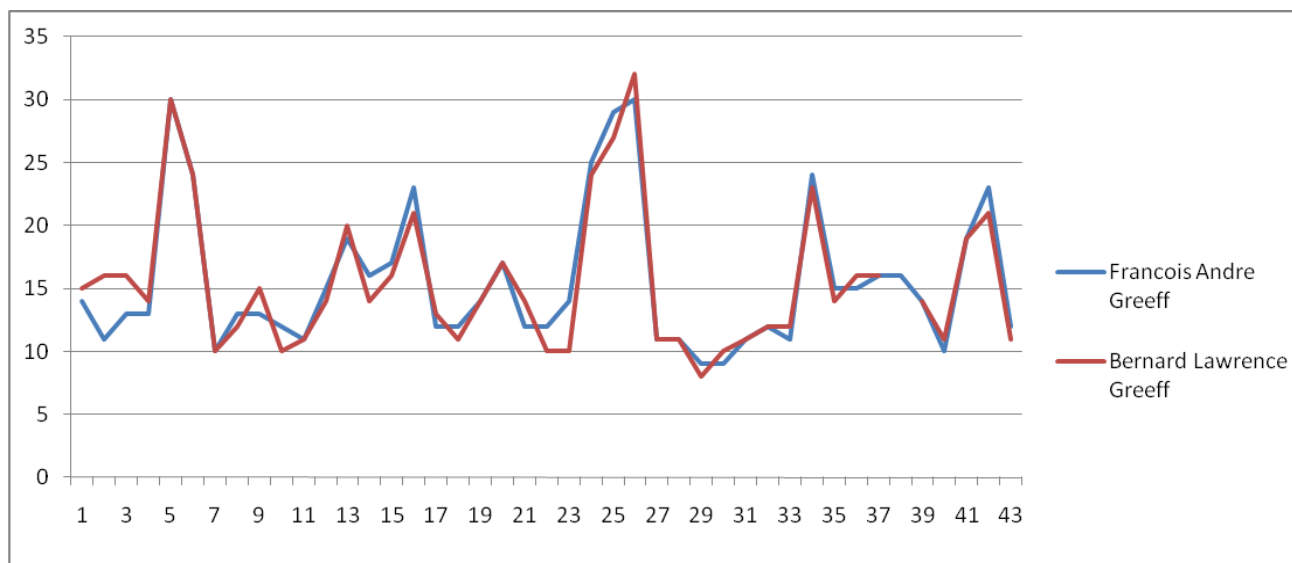


Illustration 5: 43-Marker Comparison of Francois Greeff & Bernard Greeff.

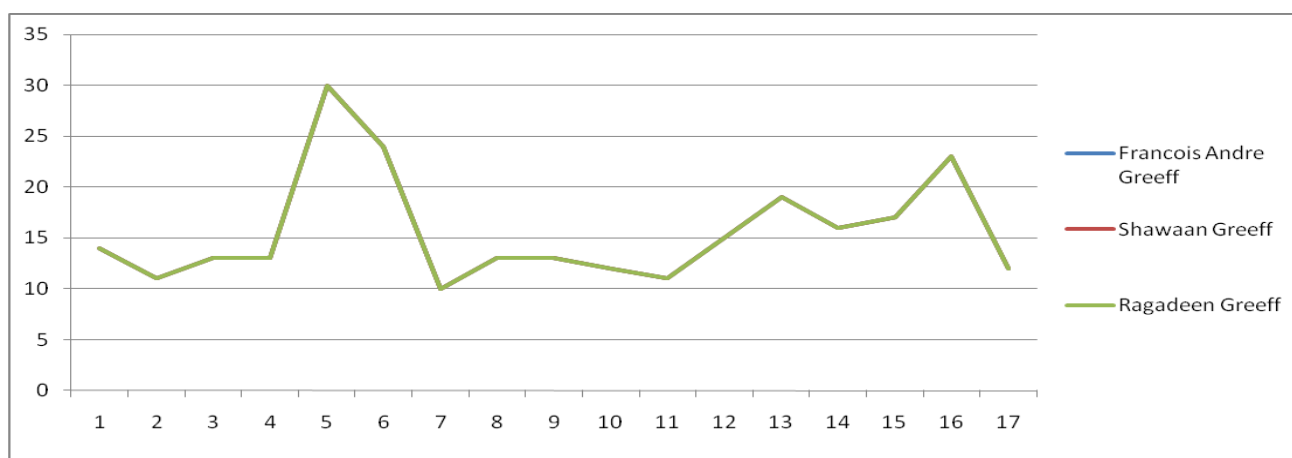


Illustration 6: 17-Marker Comparison of Francois Greeff, Ragadeen Greeff and Shawaan Greeff

clan. On the other hand, Francois, Shawaan and Ragadeen (Illustration 6) show no differences whatsoever, and since all three are geographically likely to be descended from the immigrant ancestor Matthias Greeff, they are classed as members of the Matthias Greeff tribe of the Greeff clan.

The Value of Mutations

Mutations help to distinguish subgroups in the clan. Identifiable subgroups help to place a person in the right branch of a family tree. The descendants of Matthias Greeff show minor mutations (Illustration 3). These minor mutations are each shown as a different colour, not counting green. In the bottom right of the diagram it is clear that the Y-DNA profile of Andre Servaas Greeff is

different, by mutation, from that of his son, Servaas Willem Johannes, who passed the new mutation to his sons, Andre and Philip.

A second way that mutations are useful is that where Y-DNA profiles are completely different they indicate an unrelated family of the same surname. The difference between the profiles is what allows us to see that two people are unrelated through Y-DNA. One Y-DNA string shows too many differences from the other (e.g. Illustration 5).

One Clan, Many Tribes.

Y-DNA does not make one a member of a clan. Clans are not a genetic family but a group with emotional, social,

and family ties. The clan has hundreds of different types of flesh and blood⁵, but only one surname.

We seriously have to consider who is a Greeff clan member, and who is not. The first rule is that either one are in, or not – there are no second class citizens in any clan. One cannot be a clan member and say “but I am not a real member, I just married into the family”. There is no such thing as a “not real” clan member. Either of two things make one a real clan member:

1. Surname. If one’s surname is, was, or has been Greeff, then that person is part of the clan forever.
2. Genes. This part can become complex, but for the time being, just consider a mother who remarries so that her Greeff children take on the surname of their stepfather. Their genes keep them in the clan, not their surname.

There are groups of people who are genetically descended from a Greeff whose surname changed – by adoption into another family, for example, or when a mother remarries and her Greeff children take the surname of her new husband. All the genetic descendants of such a person are also part of the clan forever, regardless of what their surname became, and regardless of how long ago the surname changed. (Much of this is problematic only because the predominant models of western genealogy are extremely sexist. Only paternal lines count, and female descendants do not count at all. If female descendants were counted Jan Christiaan Smuts would be part of the Greeff clan too, because he is a direct descendant of Matthias Greeff. By examining only male descendant lines we limit the present study to far less than one percent of the descendants of any progenitor who lived a dozen generations ago.)

The most important discovery of this study was that the Greeff clan consists of very many completely different tribes, who are, for all practical purposes, not at all related to each other. More importantly, it quickly becomes abundantly clear that this is true for virtually all clans of one surname, right across the world. Bryan Sykes, in *Surnames and the Y Chromosome*, limited the scope of his study to people who had a demonstrable common ancestor, but commented that “In genealogy, for example, it would be useful to investigate the link between branches with the same surname for which a common ancestor could not be established from written records.” (Sykes 2000: 1418). This study does exactly that.

⁵ Children are physically different from their parents in ‘flesh’ (build and appearance), and they have different blood groups from their parents. Beyond that there are the descendants of adopted children.

It is critically important to realise that all clans that have one surname will actually consist of a great variety of different tribes that are not at all related to each other. On the other hand, one tribe can exist over several different surnames, or clans. In other words, sharing surnames provides no guarantee of kinship. DNA genealogy will cause current definitions and perceptions of clan and kin to be significantly revised, and very soon too.

The Greeff Y-DNA project identified nine distinct tribes of the Greeff clan. Careful reading of the story of each tribe will show how rich and diverse the notion of a ‘non-paternal event’ can be. In its strictest sense a non-paternal event simply means that DNA results do not agree with the expected ancestry, as indicated by paper records. A non-paternal event is all too often taken to mean that a mother cheated on her husband, which presents an extremely limited view of what really happens. The reality is far more interesting. A non-paternal event means that a new tribe is created. It means that the presupposed agreement of surname and Y-DNA ends, and a new link between surname and Y-DNA is created.

Wars create orphans, mothers die in childbirth and babies cross from one family to another – and no-one ever mentions it again. In the Greeff clan Magdalena Pelser married Mr Brnjac and had two sons. She remarried Ben Greeff and had two more sons. All four boys grew up in the home of Ben Greeff, and all four went by the surname Greeff. Their children and grandchildren never heard of Brnjac – not until the Greeff Y-DNA project revealed his existence to them. A new Greeff tribe with its own kind of Greeff Y-DNA, which matches the Y-DNA of Brnjac, had been created. But now that DNA is Greeff DNA. It is part of the clan forever.

On the other hand, two Greeff children had a mother who remarried Dave Bacon, and her children took his surname. There is no doubt that their DNA became part of the Bacon clan’s DNA. But can they just write off their Greeff heritage and their Greeff medical history? They cannot, because they introduced Greeff traits and Greeff genes and Greeff medical history into the Bacon family. In spite of bearing the Bacon surname, they will forever be part of the Greeff clan, because they carry Greeff genes and Greeff inherited illnesses. In the same way Brnjac’s descendants cannot ever alienate themselves from the Brnjac genes or the Brnjac clan. It happens that people can be full members of more than one clan.

All people have genes that originated outside of their clan-by-surname (possibly in the time before surnames existed). There is no question about ‘if’ their genes came from another surname – the only question is ‘when’ did their clan-by-surname acquire its genes from a different

clan-by-surname. In which war did a child cross over into their bloodline, or in which marriage did their ancestors come into the family via a second marriage? Millions of mothers died in childbirth, and which of their children carried a gene set from one clan-by-surname into another? No clan is immune to non-paternal events.

This discovery that every clan-by-surname is made up of very many completely unrelated tribes holds great significance for the future of Family History research, because it opens new horizons for Family History research. Y-DNA research redefines the meaning of "Family" in "Family History" because Y-DNA shows that the clan consists of many genetically unrelated tribes. Previously the clan was seen as one great family, but Y-DNA compels one to see the clan as an umbrella family of tribe families, which are each a family of household families. Without detracting from any former meaning of family, Y-DNA gives the family historian another working definition of the greater family – the tribe.

The Greeff Y-DNA study identified nine clearly distinguishable Greeff tribes.

1. The Greeff tribe of Germany and America
2. The Greeff tribe of the Netherlands
3. The Greeff tribe of Matthias Greeff
4. The Greeff tribe of Friedrich Greeff
5. The Greeff tribe of Jacques Greeff
6. The Greeff tribe of Godfrey Greeff
7. The Greeff tribe of Corrie Greeff
8. The Greeff tribe whose surname is Bacon
9. The Greeff tribe whose race is "Cape Coloured"⁶

The Greeff tribe of Germany and America

Geschichte der Familie Greeff aus der Huckenbach, (Bredt, 1941) is an excellent book that gives a comprehensive view of the earliest recorded history of the Greeff clan. The book describes the Greeff people of the Huckenbach farm at Ronsdorf near Wuppertal, and it traces their descendants to those members of the family who emigrated to Switzerland, England, Canada and America. The project received DNA tissue samples from four people who were known to be descended from the Huckenbach tribe of the clan:

Klaus Greeff of Switzerland.
Chris Greeff of America.

⁶ "Cape Coloured" is the official name of a race of people who originated around Cape Town in South Africa. In South Africa 'coloured' is not a pejorative term that describes people of African descent (as in America).

Oliver Greeff of Germany.

Dirk Greeff of Cuba, whose sample returned no result by the laboratory in America.

The Greeff tribe of the Netherlands

In addition to the three members of the German-American Huckenbach tribe, we received a DNA sample from Talon Greeff in America. Talon and his father were both born in the Netherlands. Talon's Y-DNA is no match to that of Klaus, Chris and Oliver because 10 of 43 markers differ. It is clear that Talon's ancestors were not descended from the Huckenbach. There is no way, at present, of knowing if Talon's ancestors migrated to the Netherlands from Germany before Talon's father emigrated to America. A follow up study will have to give greater attention to the Greeff and De Greef families of Holland.

The Greeff tribe of Matthias Greeff

About 80% of Greeff people in South Africa are estimated to have descended from Matthias Greeff. Matthias was born at Magdeburg in Germany around 1650 or 1660. He worked for the Dutch East India Company at Batavia on Java Island from 1674 to 1679, and arrived in South Africa in the beginning of 1680. Of the 45 DNA samples collected around the world, 35 were from descendants of Matthias Greeff. The subjects were from Zimbabwe, Qatar, Australia, Britain and South Africa.

Eight sub-tribes or branches were identified through a mutation in one or two markers. They are indicated in different colours in the family tree diagram of Matthias Greeff and his descendants (illustration 3).

In one case the exact position of the mutation was pinpointed because Y-DNA from the father and the son was analysed. Andre Servaas Greeff and his son Servaas Willem Johannes Greeff differ on one marker (illustrations 1 & 3).

In several cases the paper or oral ancestral history of the people who gave the DNA samples was not known, and they were identified by a match to the other descendants of Matthias Greeff⁷. In the case of the unlinked Chris Greeff his Y-DNA showed him to be related to Oppel Greeff, and this was later verified when Chris' paper

⁷ It is possible, but improbable, that the people thus matched could be descended from an unknown brother, father or cousin of Matthias. The probability is low for two reasons: 1. Matthias Greeff was an immigrant ancestor. 2. Births, marriages and deaths of the European settlers at the Cape of Good Hope were very well documented in records that still exist.

genealogy was made available. It turned out that Oppel's great great grandfather, Hendrik Gabriel Greeff is also Chris' great great grandfather.

The Greeff tribe of Friedrich Greeff

Friedrich Greeff was a pharmacist who migrated to South Africa from Brunswick in Germany some time before his marriage to Sara Helena Smit on 31 August 1788. At a guess, roughly 20% of Greeff people in South Africa descend from Friedrich Greeff.

Two known descendants of Friedrich Greeff submitted a Y-DNA sample for analysis: the late Bernard Lawrence Greeff, who passed away shortly afterwards, and Viljoen Greeff. The sample from Bernard has proved to be exceptionally valuable because it was analysed over 43 markers. A third sample came from Gideon Greeff (of Ballito Bay in Zululand) whose ancestry remains unknown. His Y-DNA matched him to Bernard and Viljoen, which places him squarely among the descendants of Friedrich Greeff, in spite of the absence of paper records to this effect. Gideon and Viljoen and Bernard match on 17 of 17 markers (illustration 7).

The Greeff tribe of Jacques Greeff

Jacques Greeff's ancestry illustrates how easily a new tribe in a clan is formed by household relationships.

Lenie Pelsler married a Scandinavian man whose surname was Brnjac and the couple had two sons. Exit Brnjac. Lenie then married Ben Greeff and they had two more sons. All four boys grew up in the Greeff household and used the same surname, Greeff. Lenie's grandchildren were baptised Greeff, and her great grandchildren too. Her grandchildren, including Jacques, had never heard of Brnjac, and Grandpa Ben was the only grandfather they ever knew. It was only because of research into the Greeff family tree that the Brnjac story surfaced and her grandchildren heard of it for the first time.

There is no doubt that all four boys, and their descendants, are real clan members. With each person in the world there must have been a person who first used 'my' surname, only most of us will never find out who that progenitor was. Jacques and his cousins are the grandchildren of Brnjac. They are lucky because the Y-DNA study illustrates that their medical and genetic history is different from what they thought it to be. They will no longer tell their doctor that Grandpa Ben Greeff had diabetes or other genetic illnesses that place them and their children at risk. If they ever need that kind of information, they now know where to look for it. In three hundred years' time hundreds of Greeff descendants will trace their ancestry back to the

progenitors of their family, Armand and Derek Greeff, the sons of Brnjac. Armand and Derek are the primary progenitors⁸ of a whole new Greeff tribe, and they are as important as any other primary progenitor in the clan.

The Greeff tribe of Godfrey Greeff

Godfrey Greeff is an important person in this study because he took his mother's surname⁹. It was when Francois Greeff phoned Godfrey that Francois realised that he was speaking to the progenitor of a new Greeff tribe. In that moment came the realisation that the clan consists of many unrelated tribes. This is true because Godfrey introduces a whole new Y-DNA strain into the Greeff clan. In 300 years' time his descendants will trace their ancestry back to him, and mark him as the primary progenitor of their family.

Godfrey has not yet submitted a Y-DNA sample. This is a pity because it is important that the Y-DNA profile of the founder of a whole new Greeff tribe is recorded before it is too late to do so. If his Y-DNA is recorded today his descendants will thank him in centuries to come.

The Greeff tribe of Corrie Greeff

Corrie Greeff of South Africa has a Y-DNA profile that differs from what was expected from his ancestral paper trail. The graph shows that Corrie differs from both Francois and Bernard. Three different graph lines indicate three different tribes because they show too many differing markers (illustration 8).

Corrie's profile does not match the profile that is typical of the descendants of Matthias Greeff, from whom Corrie descends on paper. It also does not match that of Bernard Greeff, descendant of Friedrich Greeff. Genealogists speak of 'non-paternal events,' which refers to the situation in which the DNA profile of a person does not confirm the paper and oral genealogy of an individual.

Francois Greeff (2008) wrote an article about non-paternal events in which he expressed the view that they are actually very good news. Firstly, he argued, they help people to realise that their medico-genetic history may be different from what they thought it to be, and they can

⁸ "Primary progenitor" is a person who is the founder of a tribe. The conventional "immigrant ancestor" (Stamvader in Afrikaans) is merely one type of primary progenitor. This study shows that there are different types of primary progenitors that come into existence when a new tribe is created.

⁹ Godfrey is the son of Charles Harris and Zara Greeff.

Name	DY S1 9	DY S38 5a	DYS 385b	DY S38 9I	DYS 389I	DY S39 0	DY S39 1	DY S39 2	DY S39 3	DY S43 8	DY S43 9	DY S43 7	DY S44 8	DY S45 6	DY S45 8	GATA C4 DYS635	GAT A H4
Bernard Lawrence Greeff	15	16	16	14	30	24	10	12	15	10	11	14	20	14	16	21	11
Jacobus Viljoen Greeff	15	16	16	14	30	24	10	12	15	10	11	14	20	14	16	21	11
Gideon Greeff	15	16	16	14	30	24	10	12	15	10	11	14	20	14	16	21	11

Illustration 7: Matching Gideon's Y-DNA.

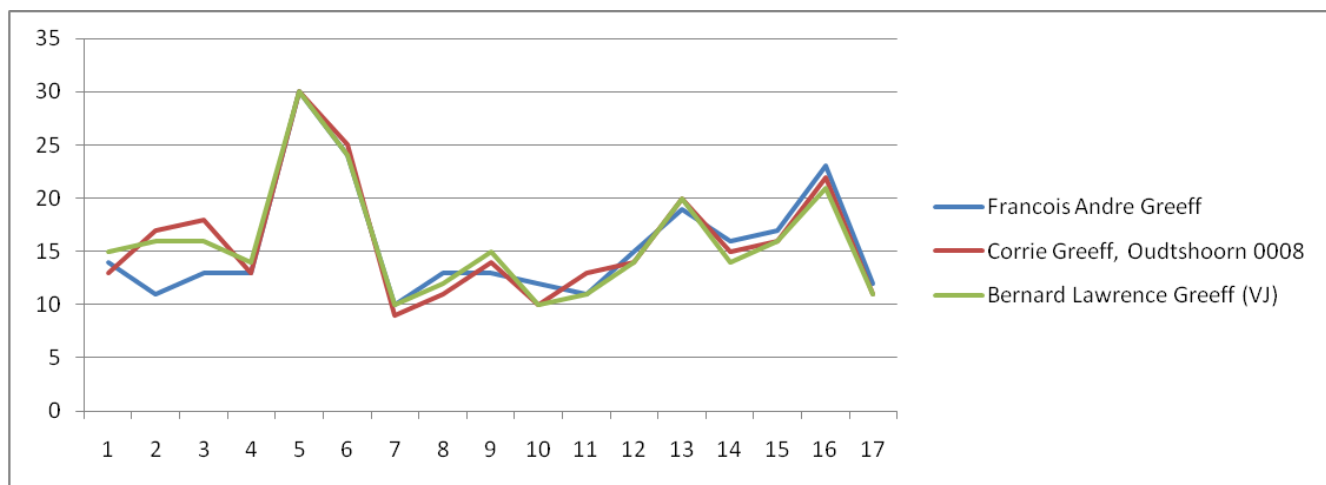


Illustration 8: X Axis = number of markers. Y Axis = value of markers.

then start searching for their true medico-genetic history. Secondly, those who find a non-paternal event are faced with a whole new adventure – to trace their dual ancestries, both presumed and genetic. Thirdly, they are faced with the challenge of finding out where, why and how the non-paternal event happened. To find out where the non-paternal event happened is relatively easy, and will involve a short series of Y-DNA analyses.

First, analyse the Y-DNA of a descendant of Corrie's father. If it is the same as the rest of Matthias' descendants, then the analysis will have found where the non-paternal event happened. If this analysis shows the same result as Corrie, then move up a generation.

The second step will be to do a Y-DNA analysis of a descendant of Corrie's grandfather. Again, if the result is the same as Corrie's, move up a generation, and do an analysis of the Y-DNA of a descendant of Corrie's great grandfather... and so on until a match for the Y-DNA of Matthias Greeff is found.

After that it becomes really interesting. When it is established exactly where the non-paternal event occurred investigation must determine how and why it happened, so that the genetic origin of Corrie's Y-DNA can be determined. One possibility is that the non-paternal event may have occurred between 1899 and 1902, when 26,000 women and children died in British concentration camps during the Anglo Boer War. There must have been no end of orphan babies who crossed from one family to another without paperwork, and without this ever being mentioned again.

The Greeff tribe whose surname is Bacon

Two Greeff children were born Greeff and when their mother remarried they were given their father's surname: Bacon. This presents the same situation where their medico-genetic history is different from that of their stepfather, whose surname they have. Where such children acquire the Greeff surname they become Greeff in flesh and blood, and they have a unique Y-DNA heritage because they create a new tribe of Greeff people.

The Greeff clan cannot wash their hands of children who migrate to other clans-by-surname. No matter what surname such children carry, they are also Greeff clan members. They share the same medico-genetic heritage, and their descendants will search for their ancestors in the joint and common family tree. So these two children become the primary progenitors of a whole new tribe of Greeff people whose surname is Bacon.

The Greeff tribe whose race is “Cape Coloured”

The Greeff Y-DNA study found two Cape Coloured men whose Y-DNA shows that they are descended from Matthias Greeff. It is really interesting to find that one clan can, and does, cross the traditional boundaries of race.

“Cape Coloured” is the official name of a race of people who originated around Cape Town in South Africa. ‘Coloured’ is not a pejorative term that describes people of African descent. The origins of the Cape Coloured people lie in the islands around Batavia and Java Island. Most of their ancestors were originally transported to South Africa as slaves. Some of these slaves earned their freedom and some of them married European settlers after manumission. Some slaves had children who were born into slavery.

A valuable perspective on the two races is to realise that interracial marriages, all over the world, have always been fairly uncommon because of the barriers presented by language, culture, diet, geography and physical appearances. In this context one can see that a mixed marriage introduces a gene into a pool, much like a drop of white paint into a pot of black paint, or a drop of black paint into a pot of white paint. The effect of the drop very soon becomes unnoticeable – unless you know that it is there.

This drop in the bucket approach explains why Matthias Greeff has descendants from different races. He has white European descendants, and he has Cape Coloured descendants too. Both lines have the same unmistakable Y-DNA profile. Shawaan and Ragadeen Greeff are distant cousins to Francois Greeff, and there is no mistake about it (See illustration 6). They belong to the same tribe, and the same family.

On the other hand, racial characteristics are one of the most obvious defining characteristics of any tribe. So now we get to a point where we find cross-cutting cleavages that define the different Greeff tribes. These cross-cutting cleavages simultaneously unite and isolate Greeff tribes.

1. Surnames (eg. Greeff & Bacon)

2. Genes (eg. Tribe of Jacques Greeff)
3. Race (Shawaan & Ragadeen)
4. Geography (Germany & America)

This is clearly another way in which DNA genealogy influences the future of traditional Family History.

The discovery of the Y-DNA profiles of Shawaan and Ragadeen Greeff opens up a whole new and fascinating field of Family History research for the Greeff clan. There is no doubt that many interesting articles and papers will be written as a consequence of the research that lies ahead.

Unlinked Greeff People.

Y-DNA is a valuable tool for the modern Family Historian. In Family History research the best that ever happens is that one gets only a partial view of ancestors. Y-DNA also gives a partial view, but it gives a different partial view. The more partial views one can see and join together, the closer one gets to seeing a whole picture.

DNA genealogy significantly helps to show the researcher where to search for documentation. In the Greeff Y-DNA project several people were unlinked on paper, but their Y-DNA identified them by tribe, and greatly facilitated research into their paper records.

1. Chris Greeff matched Oppel Greeff, and after that a paper link was found easily.
2. Tertius Thompson Greeff cannot find records of his grandfather’s parents, but now he knows to search among the ancestors of Jaco Maree Greeff, which greatly reduces the former search for a needle in a haystack. DNA genealogy can prove to be a very useful tool for breaching the Family Historian’s traditional ‘brick wall’. If Tertius does not find his ancestors among those of Jaco, then the similarity could be the result of the same mutation that happened twice, by fluke.
3. Ragadeen and Shawaan Greeff entered the records of this project as unlinked individuals. When their Y-DNA profiles matched exactly closer inspection of the paperwork was done, and it became clear that they were father and son, a fact that had been accidentally overlooked.
4. Gideon Greeff has been linked by Y-DNA to the descendants of Friedrich Greeff, and this will ease the search for the paper records of his ancestors.
5. Jacques Greeff and his entire tribe now know to search for their medical history in the Brnjac files.

6. Corrie Greeff know to start searching and checking for an adopted child, or a person whose surname changed to Greeff. He has a unique and fascinating Family History research project that lies ahead of him.

There are clearly great advantages to having established Y-DNA profiles for the largest Greeff tribes. The clan can now place most Greeff people in their appropriate tribes, thus making ancestral research significantly easier.

Eugene Greeff made a significant contribution to the project. His Y-DNA profile is the same as that of his father and his and so on, all the way to that of Matthias Greeff, whose Y-DNA profile is the same as that of his sons and grandsons, all the way down, through various routes, to Louis Francois Greeff, Francois Andre Greeff, Caspar and Caspar, Barend Gustav, Louis Egbert, Harry Greeff and Awie (Abraham Petrus Greeff in Stellenbosch). Through these connections this project has managed to identify 17 of the markers in the Y-DNA profile of Matthias Greeff, a man who has been dead for 300 years (see illustration 3, green).

By the same technique Y-DNA profiles have been established for the ancestors of other people who have identical markers. This is what allowed Gideon Greeff to be typed as a descendant of Friedrich Greeff.

These Y-DNA types have been used to link unconnected Greeff people and households to their appropriate tribe (eg Shawaan, Ragadeen, Chris, Tertius). The Greeff Y-DNA types have also successfully shown a non-paternal event (see Corrie Greeff).

Conclusion.

The Greeff Y-DNA project has proved to be of great value to the Greeff clan, and quite possibly to many other genealogists and Family Historians, because it emphasises new techniques that compliment traditional Family History research methods.

The main aim of this study was to provide support for the hypothesis that all Greeff people around the world are one great family, all descended from one man. The study proved exactly the opposite. The Greeff clan is made up of very many separate tribes who are, for all practical purposes, not related to each other at all. Only nine of these tribes were identified, but their nature makes it likely that there are many more tribes waiting to be discovered. Moreover, this discovery makes it obvious that all global one name studies will cover a number of separate tribes who are not related, other than in name only. The study strongly supports the view taken by

Chris Pomery (in *DNA and Family History*) that our understanding of surnames will change as DNA genealogy becomes more common.

This study showed that it is necessary to distinguish between Clan, Tribe and Household, because clan members can have the same surname, without any family connection. Tribes are people who are of the same genetic family – cousins and distant cousins. Households are a jumble of mums and dads, with his, hers and our children, which explains how new tribes are formed.

The study showed that tribes can be variously defined, with parameters by surname, by genes, by geography, by nationality, or even by race. In computer based family genealogy, for example, it would be useful to ignore surnames and investigate the tribes that can be defined through mitochondrial DNA.

The study showed that the main Greeff tribes have been identified, each with its own recognisable Y-DNA profile. These useful profiles mean that many unknown Greeff men can easily be sorted into the right tribe, just by Y-DNA. This useful pigeonholing makes a conventional search for the subject's ancestral records of BMD a great deal easier, because it greatly narrows the field in which one needs to search. Y-DNA can be a useful tool for proceeding beyond the 'Brick Wall' of conventional Family History research.

Finally, "Greeff in flesh and blood" takes on a new meaning. Every member of the clan is a true Greeff in flesh and blood, even though it is perfectly clear that there are at least nine completely unrelated family groups within the Greeff clan. The clan has many types of "Flesh and Blood" that make up the real and true Greeff clan.

Action for the future.

This project has supported and confirmed the bulk of paper based Family History research in the Greeff clan. It has also identified a number of new discoveries that must be addressed in the future.

The existence of new tribes, previously unidentified, needs to be addressed far more carefully in the future. Neglected tribes must be given far greater priority. In this regard it is abundantly clear that a great deal of research needs to be done into the completely unknown tribe of Greeff Cape Coloured people. This project has revealed that the tribe has hundreds of members spread across the globe, from Australia, to Cape Town to Canada. Almost nothing is known of this tribe because they are predominantly Moslem, and thus not in the usual baptismal registers or graveyards.

Research needs to be done into cultural and religious differences, to see whether these are also cross-cutting cleavages that define different tribes.

Corrie Greeff and his tribe must be researched to see where and how his tribe was isolated from the tribe of Matthias Greeff.

Research needs to be done into common perceptions, definitions and conceptualizations in Family History and genealogy. One area that demands immediate investigation is the conceptualisation of very strongly dominant immigrant ancestors whose dominance is misleadingly reinforced by the de Villiers numbering system in dominant volumes, such as the *South African Genealogies* books. There are far more primary progenitors than conventional genealogy recognises.

This Y-DNA study has been a most positive influence in Greeff Family History research. It has done much to increase general understanding of the clan, and it has redefined the clan into far tighter, closer family groups. If this small study has done so much good, then it must be extended into a future second phase.

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