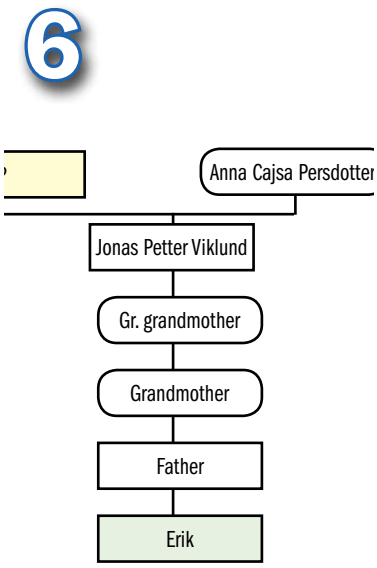
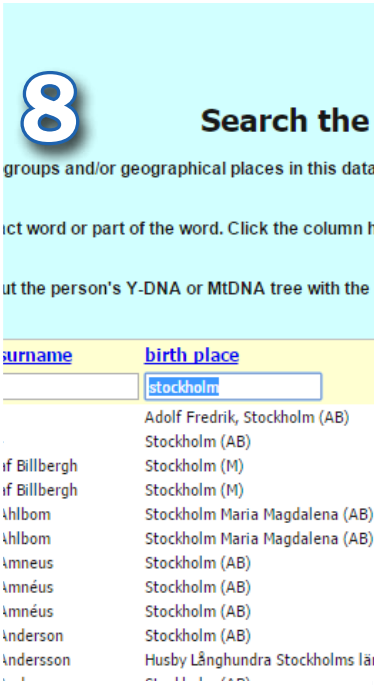
ROOTED in Sweden

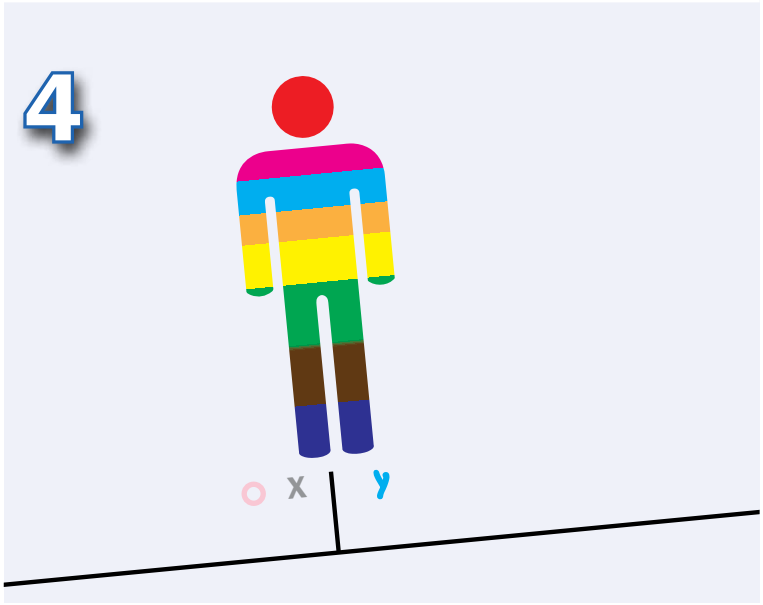
no 15 2016

Swedish DNA
Sweden in Minecraft

A newsletter from DIS Society—the Computer Genealogy Society of Sweden







For many years our logo has been a tree that resembles an oak, designed with graphics from the 1980s. Many distorted versions of the logo exist, with incorrect colors and proportions. Since new versions of both DISGEN and our website are being released soon, now is a good time to also renew our symbol.

I can understand that there are a lot of emotions attached to a well-known symbol, but the board and I believe that we need to move towards a modern form, away from the outdated oak. We will introduce the new graphical profile gradually during the spring and hope that everything is in place by August.

DISGEN 2016 is almost complete and several prereleases are already out. In spring the final version will be released, hopefully by the end of February.

Our new website will also be launched this spring. The framework is done and must now be filled with interesting content. The new website will also be fully accessible from tablets and smart phones, something that is becoming increasingly important.

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Annual subscription rates:
$22, including e-zine Rooted in Sweden
$35, including Swedish magazine Diskulogen

Cover image: *FreeDigitalPhotos.net* – rajcreationzs

Sweden in Minecraft

Lantmäteriet, the Swedish mapping, cadastral and land registration authority has released geodata freely and even released a landscape model for the computer game Minecraft.

The Swedish video game company Mojang AB began to develop Minecraft in 2009 and was able to release it in 2011. In September 2014, Mojang was acquired by Microsoft for 2.5 billion USD!

The entire game world is made up of cube-shaped blocks. In the game you can build buildings and other structures using different blocks. The game has won several awards and been recognized for its innovation.

Hundreds of schools around the world use Minecraft in teaching. There is even a special web service, MinecraftEDU, which has resources that facilitate the use in school environment. Many teachers see Minecraft more like an educational aid than a game. Students have, for example, built a model of the old Stockholm during history lessons.

In some countries Minecraft has been used to engage youth in urban planning. It is easier to visualize how the area will look like using the game than trying to understand advanced architectural drawings. And changes are much easier done in Minecraft, a cheap option since the game costs only 26.95 USD.

Minecraft can be played on both Mac and PC and many other platforms. A total of over 50 million copies of the game have been sold.

Enlist the help of your children or grandchildren and engage them in family history. Together you can build up the ancestor's homestead and the surrounding neighborhood that perhaps is long gone. In the game you can then follow in your Swedish ancestor's footstep. Ask the children what is possible to do in the game. Share family history with the younger generation.

Lantmäteriets landscape model can be downloaded from *www.lantmateriet.se/en/Maps-and-geographic-information/Maps/oppna-data/oppna-data-i-minecraft/hamta-filer-till-minecraft/*.

Genetic Genealogy

by Anna Linder

One or more DNA tests can verify your traditional genealogy research, reveal your deep ancestry, limit the number of possible fathers on branches with unknown fathers and facilitate contact with many new relatives.

In the last few years using DNA tests as a complement to traditional genealogy research has grown to become quite popular among Swedish genealogists. DNA tests are powerful complements to traditional genealogy research and a direct connection to our shared history.

Humans have 23 pairs of chromosomes, which makes a total of 46 chromosomes. 22 pairs of chromosomes are autosomal chromosomes and one pair is sex cells, XX if you are female and XY if you are male. There is also a short strand of DNA in the mitochondria of the cells, outside the nucleus. 23 single chromosomes in the eggs and sperms are combined into 23 pairs of chromosomes at conception. Crossovers and mutations occur making each new chromosome a unique blend of the father and mother's DNA. Mutations are the keys in genealogy with DNA.

The Y DNA is inherited only from father to son, while mitochondrial DNA is inherited from mother to child and can only be passed on by women. A woman inherits an X chromosome from her mother and one from her father. A male inherits an X chromosome from his mother and a Y chromosome from his father.

Autosomal DNA is inherited at random from all the branches of the family tree, but exactly half is inherited from the mother and half from the father. The random distribution enables you to inherit a large portion of your grandmother's DNA and a very small part of your grandfather's, even if you statistically should share 25 % of DNA with each of your four grandparents. You could for example have the distribution of 20 % of your mother's mother, 30 % mother's father, 45 % father's mother and only 5 % father's father.

There are great variations to how much DNA you share with your relatives and often it doesn't come close to the statistically expected distribution. The table to the right shows the expected distribution. Many genealogists begins with testing themselves but soon continue on with testing of parents, siblings and cousins to get a clearer picture of the generations before us since we all have inherited a little different pieces.

Before testing

Before submitting your DNA sample you must be aware that secrets may be revealed. Dad may not be the biological father. You may find an unknown half-brother. Very sensitive matters, which also affect other relatives, can be revealed.

The number of DNA matches one gets varies wildly. You might get more than 1,000 matches, or only 3 or none at all. The result depends on how unusual your haplogroups are and how many of your relatives, close and distant, that have submitted a test.

The tests

It is mainly the testing company FamilyTreeDNA that Swedish and Scandinavian genealogists use, and to some extent 23andMe. AncestryDNA does not yet offer shipping to Sweden.

A man can test all three types of DNA: Y DNA, mtDNA and autosomal DNA. A woman can only test the mtDNA and autosomal DNA. The mitochondrial and Y test reveals which haplogroup you belong to on the maternal and paternal lines and thus where you belong in mankind's early history.

Price

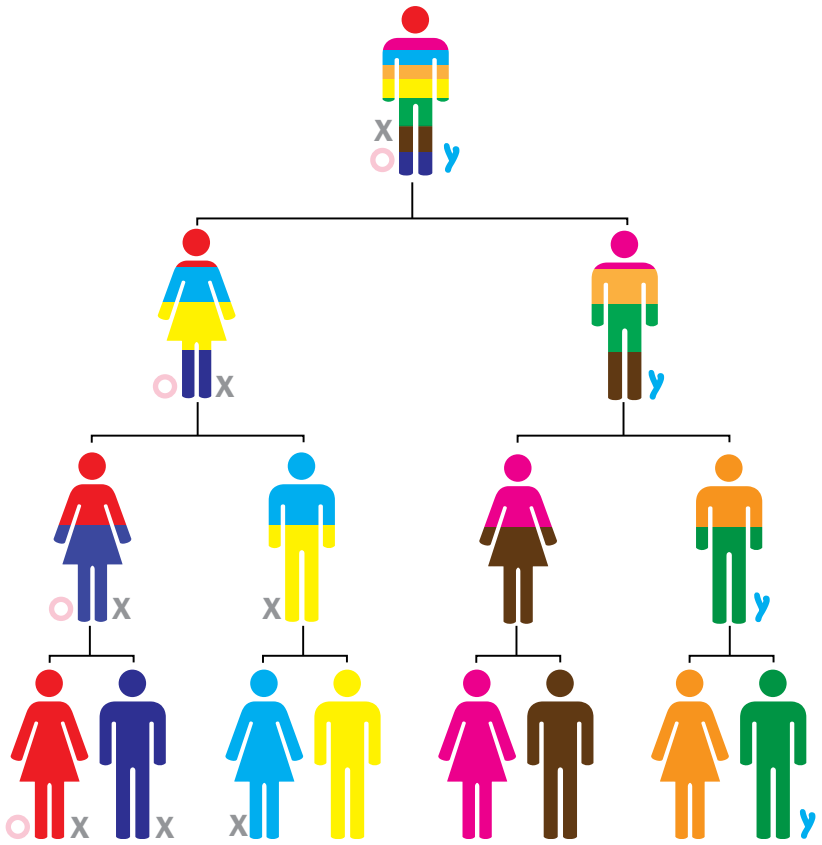
FamilyTreeDNA's autosomal test costs 99 USD, a mitochondrial test 199 USD and a Y test 169—359 USD. At 23andMe there is only one test and it costs 199 USD. It is primarily an autosomal test, but you'll also learn the maternal haplogroup and, if you are male, the paternal haplogroup. If you want more detailed information on the haplogroups you should take a more in-depth test with FamilyTreeDNA. 23andMe also indicates how much Neanderthal you are.

Y DNA

Choose the number of STR markers to test: 37, 67 or 111. STR stands for Short Tandem Repeat, microsatellites, which means that 2-5 base pair repeats, typically 5-50 times, for example, "GATA GATA GATA GATA GATA GATA GATA". The most expensive test gives the most detail and reveals the closest kinships. A good match with 111 markers is more accurate than one with 67. By testing STR markers you get your closest matches in historical and modern times, and an estimated haplogroup.

After that it is possible to order extra SNP tests to determine which subclade you belong to in the haplogroup. SNP stands for Single Nucleotide Polymorphism which means that a nucleotide is replaced, for example, "GATA" has become "GACA". Each SNP test cost 39 USD.

	Price
Family Finder	99 USD
mtFull Sequence	199 USD
Y-DNA 37	169 USD
Y-DNA 67	268 USD
Y-DNA 111	359 USD
Big Y	575 USD
23andMe	199 USD



A child inherits half of its autosomal DNA from the mother and half from the father. A boy inherits Y DNA from his father (father's father) and mtDNA from his mother (mother's mother). A girl inherits mtDNA from her mother (mother's mother).
A girl inherits an X chromosome from the father and one from the mother. A boy inherits only his mother's X chromosome.

The most recent common ancestor is your ....

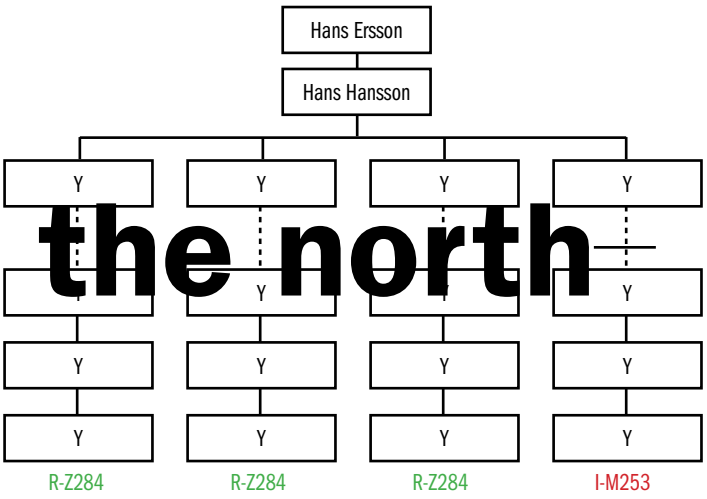
The most recent common ancestor is your relatives' ....

	Generation I	Generation II	Generation III	Generation IV	Generation V
	förälder forelder *parent* 3400 cM 50%	**mor-/farförälder** besteforelder *grandparent* 1700 cM 25%	oldeforelder *great-grandparent* 850 cM 12,5%	tip-oldeforelder *great-great-grandparent* 425 cM 6,3%	tiptip-oldeforelder *3 great-grandparent* 213 cM 3,1%
förälder forelder *parent* 3400 cM 50%	**syskon** søsken *siblings* 3400 cM 50%	nevø/niece *nephew/niece* 1700 cM 25%	grand nevø/niece *great nephew/niece* 850 cM 12,5%	*greatgrand-* *nephew/niece* 425 cM 6,3%	*greatgreatgrand-* *nephew/niece* 213 cM 3,1%
mor-/farförälder besteforelder *grandparent* 1700 cM 25%	nevø/niece *nephew/niece* 1700 cM 25%	**kusiner** søskenbarn/fetter *first cousins* 850 cM 12,5%	*first cousins* *once removed* 425 cM 6,3%	*first cousins* *twice removed* 213 cM 3,1%	*first cousins* *three times removed* 106 cM 1,6%
oldeforelder *great-grandparent* 850 cM 12,5%	grand nevø/niece *great nephew/niece* 850 cM 12,5%	*first cousins* *once removed* 425 cM 6,3%	**sysslingar** **tremänningar** *second cousins* 213 cM 3,1%	*second cousins* *once removed* 140 cM 1,6%	*second cousins* *twice removed* 94 cM 0,8%
tip-oldeforelder *great-great-grandparent* 425 cM 6,3%	*greatgrand-* *nephew/niece* 425 cM 6,3%	*first cousins* *twice removed* 213 cM 3,1%	*second cousins* *once removed* 140 cM 1,6%	**bryllingar** **fyrmänningar** *third cousins* 53 cM 0,8%	*third cousins* *once removed* 76 cM 0,4%
tiptip-oldeforelder *3 great-grandparent* 213 cM 3,1%	*greatgreatgrand-* *nephew/niece* 213 cM 3,1%	*first cousins* *three times removed* 106 cM 1,6%	*second cousins* *twice removed* 94 cM 0,8%	*third cousins* *once removed* 76 cM 0,4%	**femmänningar** *fourth cousins* 13 cM 0,2%

Kinship and relationship expressions are given in Swedish, Norwegian/Danish and English. The Swedish language lacks a lot of expressions for kinship of different generations.
The percentages indicate the proportion of genes statistically shared. The amount of genes shared are also given in the unit centimorgan in relation to how much DNA normally is tested.

Genes from the north

Erik Holmlund, an administrator of the Swedish DNA project concentrating on ancestry in Skellefteå, Västerbotten, is sharing some of his experiences with genetic genealogy.



This is an overview of how the Y DNA line of the sexton family has been tested.

It is frustrating to fail to find the parents of an ancestor and end up with a large gap in the branches of the family tree. First try to identify a potential father by researching every possible traditional source. DNA testing is not a replacement for traditional genealogy; it is a supplement that can provide new clues.

Select relatives to test wisely. It is always best if they are as closely related to the unknown father or potential father as possible. Make a detailed investigation of all the descendants of your potential father and the illegitimate child to more easily see if someone a generation closer to them than you is still alive and can be tested. Then they are preferred test subjects.

It is possible to examine both autosomal DNA and Y DNA to find an unknown father. If you descended from a daughter of an unknown father, only an autosomal test that can provide answers since women have no Y chromosome.

There are several difficulties with trying to find an unknown father with the help of DNA. One can for example have several unknown fathers, not too far back in time, in the family tree making it hard to know where the matching DNA came from. DNA is mixed up through the generations. People with roots in northern Sweden have a particularly hard time sorting through the DNA matches when they can match almost everyone else in the same district. In these areas it was previously common with endogamy, marriage within the group, causing pedigree collapse.

When trying to find an unknown father you can test yourself and then just wait for interesting DNA matches, or also test descendants of an already identified potential father.

"You may not be able to solve the case completely with the help of a DNA test. You might only get a connection to a specific area, but that can sometimes be enough. The goal is to collect more pieces to the puzzle. One should not expect more", Erik says.

Erik's example

Erik's great great grandfather, Jonas Petter Viklund, was born in 1857 in Ytterstfors, Byske, Västerbotten. His mother was Anna Cajsa Persdotter who was 20 years old when he was born. She married six years later with Olof August Viklund. In the church records Jonas Petter is noted as her illegitimate son. Since the stepfather had just moved in to the parish and so many years had passed between birth and marriage it is not likely that he is the father.

Erik started by testing himself, but that did not give any answers to the question. Was there someone in an earlier generation he could test? Statistically his grandmother's sister should have four times more autosomal DNA in common with Jonas Petter Viklund than Erik. She was therefore a much more interesting test subject than himself.

A potential father

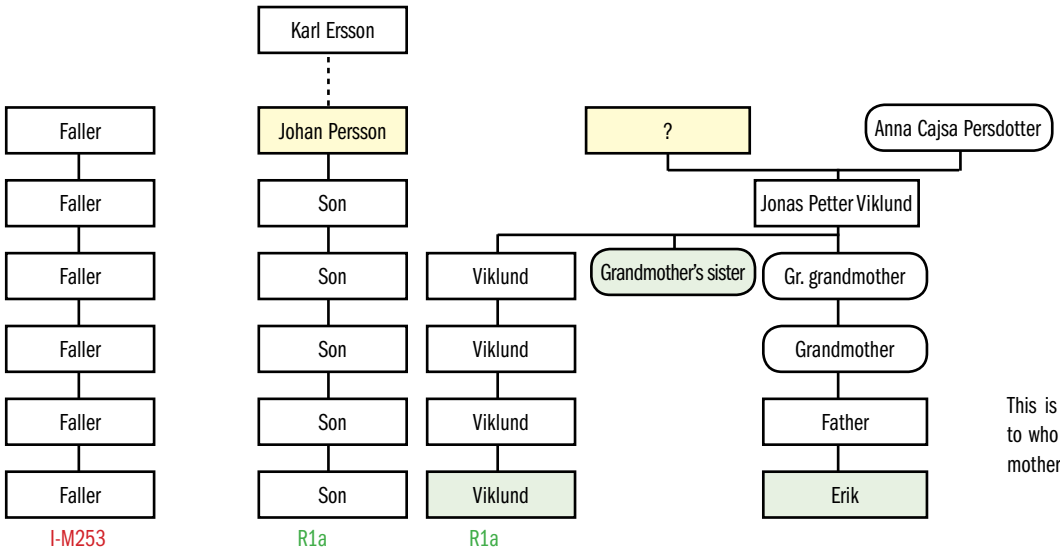
According to family legend the father of Jonas Petter was a glassblower from Finland named Faller. Isac Wilhelm Faller moved into the area in 1855, he was in the right place at the right time. But Erik has not found any support in the archives that Faller would be the father. The Faller family was originally from Bohemia in Germany. A Y DNA line that does not belong in the Skellefteå area decreases the risk of false positive matches. One can assume that other haplogroups are more common in Bohemia than in Skellefteå.

The grandmother's sister had DNA matches to someone with Faller in the family tree, but they shared so many other common relatives that the result does not prove anything in this case.

Erik researched glassblower Faller's descendants and discovered that one of them actually had already taken a DNA test. Faller belongs to Y haplogroup I-M253, the most common haplogroup in Sweden, yet he has no Scandinavians in the matching list but mostly Germans and some Englishmen. His haplogroup branch seams to not be that common here. Faller's matches prove that he does not have a Y DNA line from the area.

Viklund's YDNA

Jonas Petter had a few sons, but Eric found a descendant in the direct male line who agreed to take a DNA test to help solve an old family mystery. The results revealed that the Viklund haplogroup is R1a. It is therefore unlikely that Faller is the father of Jonas Petter. This negative result meant that Erik was finally able to remove Faller



This is an overview of the DNA results that has given clues to who Jonas Petter's father might have been and the grandmother's sister proving the Viklund branch's correctness.

from the list of potential fathers and tackle the problem with fresh eyes. The Y DNA test can be verified by testing several brothers, if any exists. By checking that Viklund is a close relative of his grandmother's sister the autosomal test confirmed test results of the Y DNA test.

What other matches did Viklund have? Erik discovered two promising matches from Skellefteå.

Potential father no two

The Y DNA matched 66 of 67 markers. The genetic distance of 1 means that they differ on only one marker. According to FTDNATiP, a calculator that calculates the closest common ancestor, there is a 99 % chance that the common ancestor lived within eight generations.

The second man matched 65 of 67 markers. The two paternal lines merged into the common ancestor Johan Persson, with Karl Ersson in Sunnanå as the male ancestor. The father could be Johan Persson or a close relative.

The mother's social circle

After much searching Erik could see that the mother went off as a maid to Källbomark and was there 1854—1856. The master, Isaac Johansson, had several sons. The master's Y DNA has been tested by one descendant of his brother. He has haplogroup R1b and do not match Viklund. However, this paternal line is only proven by one test.

With traditional genealogy it is possible to try to identify all men who have the same Y chromosome by following Karl Ersson's male descendants, and see who was alive in 1856 near the mother. Erik had not asked himself where the mother resided and which men lived in the surroundings.

"I had not done my homework properly. I was focusing on Faller for 25 years", Erik says.

There were also seven male laborers on the farm during different periods. Erik now has over twenty men to investigate further. The case is not solved but Erik now has some very good clues for further genealogical research.

"It is frustrating with an unknown father in the tree, but also exciting. It is a challenge".

The sexton family in Sorsele

Erik has four branches in his family tree that converge into the ancestor Hans Ersson – the first settler of Sorsele. Erik found out that a descendant of Hans Ersson had taken a DNA test. He had haplogroup I-M253, the most common haplogroup in Sweden. Erik tested his uncle and the result revealed that they had different haplogroups. According to traditional genealogy the lines should unite. Since there were some uncertain fathers in that other person's tree Erik decided to test several more male descendants.

The origins of Hans Ersson from the sexton family are much debated. To draw any conclusions the haplogroup had to be verified. Hans Ersson had three sons, but only one, Hans Hansson born 1692, has male descendants in present-day through his four sons. Erik made sure all four male lines would be tested. Erik's three test subjects shared the same haplogroup. And the 67 STR markers matched with only a distance of 2 to 4. Very close matches. One can conclude that the already tested person must have an unknown father somewhere in his family tree since he doesn't share the same haplogroup as the other descendants.

According to a Big Y test Hans Ersson belong to the branch R1a, known as the Old Scandinavian. More particularly, R- Z284. It is an old branch which is 3000-4000 years old. Many Scandinavians with haplogroup R1a belong to L448 and Z287. But the sexton family belongs to an older branch, with few matches.

There are many different theories about Hans Ersson origin. Did he come from Umeå? Was he of Sami origin as his son calls himself a "lappojke" in a letter? Erik is waiting with anticipation for the next new DNA match.

Links:
23andme, *www.23andme.com*
DNA eXplained—Genetic Genealogy, *www.dna-explained.com*
DNA Genealogy Experiment, *https://dnagen.net*
FamilyTreeDNA, *www.familytreedna.com*
GEDmatch, *www.gedmatch.com*
Genome Mate Pro, *www.genomemate.org*
International Society of Genetic Genealogy, *www.isogg.org*
Kitty Cooper's blog, *www.blog.kittycooper.com*
Norway DNA Norgesprosjektet, *www.norwaydna.no*
Swedish Haplogroup Database, *www.dna.scangen.se*
The Genetic Genealogist, *www.thegeneticgenealogist.com*
Your Genetic Genealogist, *www.yourgeneticgenealogist.com*

On the website of the Swedish Haplogroup Database, *www.dna.scangen.se*, you can see statistics and if you are lucky to find your ancestors there, see their haplogroups.

DNA projects

by Anna Linder

FamilyTreeDNA offers project platforms. The projects are focused on a geographical area, a particular haplogroup, or a surname. The Swedish project "Sverigeprojektet" has about 3,000 members. The number of memberships has tripled in the last three years. But it is rumored that there are close to 10,000 people with an address in Sweden who have taken a DNA test.

FamilyTreeDNA has guidelines for how to work on a project. The main focus is cooperation and integrity. If you join a fitting haplogroup project you can get information and help from experts on your particular haplogroup. There are great benefits to joining a project since a single DNA result doesn't tell you that much, it is when you compare results from the same area and nation that you can begin to think about similarities and differences and draw some conclusions.

The project for Skellefteå and the surrounding parishes, which started in spring 2015, has 200 members and is run by four administrators. Of the members maybe 25 percent are still living in the Skellefteå area and 8 percent in America. The projects will help to create a bridge between conventional genealogy and genetic genealogy. Links to all Swedish geographic DNA projects are gathered on the website of the Swedish Haplogroup Database, *www.dna.scangen.se*:

- Dalarna (Gagnef)
- Dalarna (Kopparberget)
- Gotland
- Norrbotten (Tornedalen)
- Skåne/Halland/Blekinge/Bornholm
- Småland (Tjust)
- Småland/Öland
- Västerbotten (Skellefteå)
- Västmanland
- Västergötland/Bohuslän/Dalsland
- Ångermanland/Medelpad

Other benefits of participating in different projects are that identification of clusters can be done more easily with information gathered in one place. As more people get tested, the more branches can be connected. If the branches of the family trees are connected and confirmed by DNA, the research is proven correct. The project offers a platform to present data and new findings that might emerge as more people test.

A project administrator can for example see that four of the five tests with a common ancestor are matching, and then facilitate contact between the parties so that they can investigate further why all five tests do not have the same results. They could not have made this discovery by themselves since only DNA matches can view each others results. That is why projects can lead to revaluation of genealogy results.

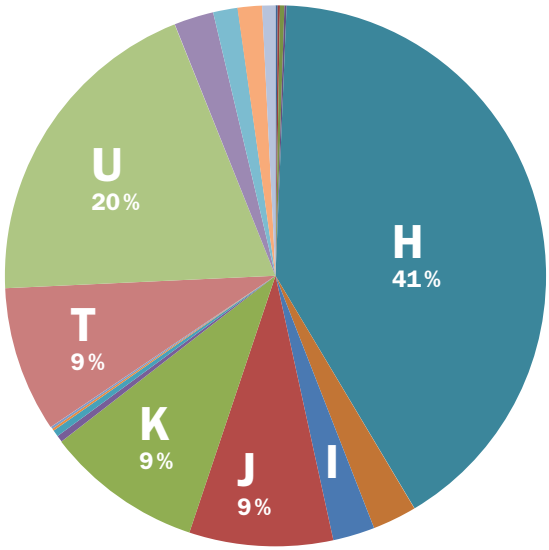
The most common Y haplogroups in Skellefteå area are I1, R1a and R1b. The rather large group of G2a are descendants of Bure. The most common mitochondrial haplogroups are H and U. H is most common in both Sweden and Europe.

"It is interesting to compare our results to other places in Sweden and see how the distribution of haplogroups looks there. I know for example that Ångermanland lacks G2 that we have in Skellefteå. Tornedalen has a strong concentration of N".

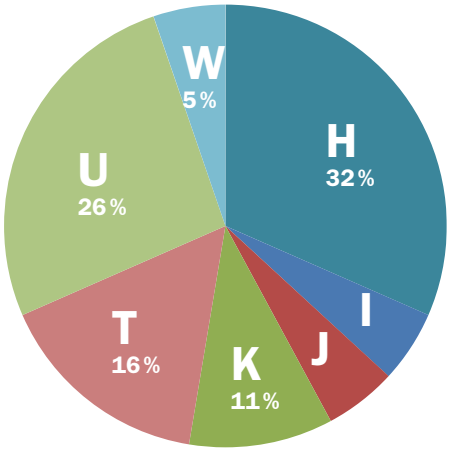
It is possible to upload your DNA result on the website of the Swedish Haplogroup Database and present the complete lines of the paternal and maternal sides. You can search and see the results available for the area you are interested in.

"Many adoptees are also included in the databases. They often know nothing about their background. It is interesting to help them in their search for roots. Often an adopted American can be satisfied by finding out that they originated from Sweden, and maybe even the county (län)".

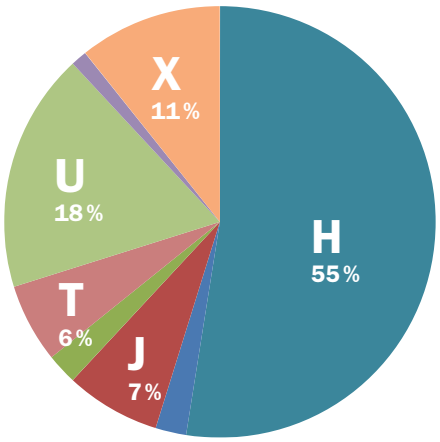
mtDNA



Distribution of haplogroups in Sweden.

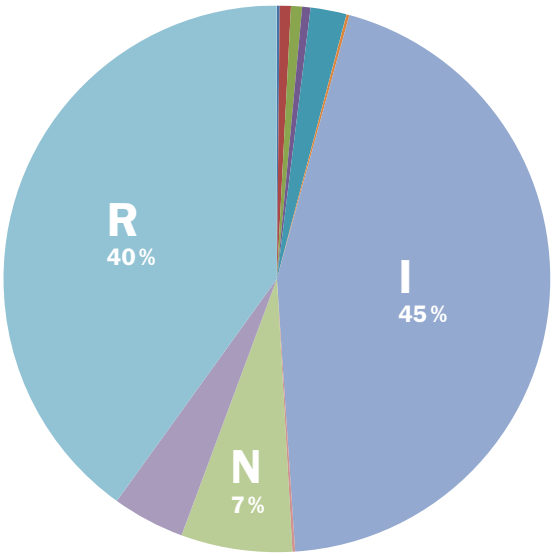


Distribution of haplogroups in Västernorrland.

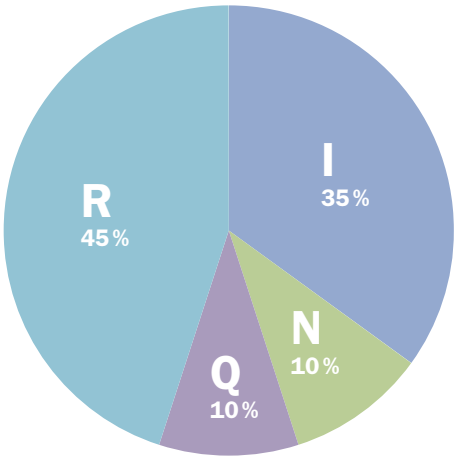


Distribution of haplogroups in Skellefteå.

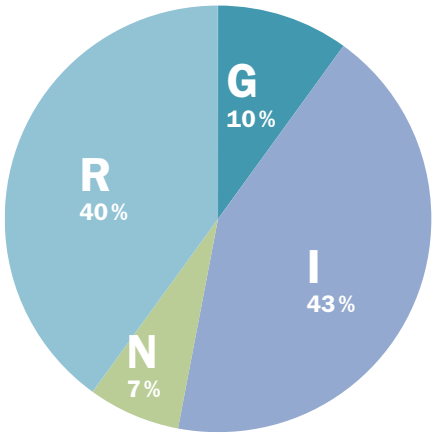
YDNA



Distribution of haplogroups in Sweden.



Distribution of haplogroups in Västernorrland.



Distribution of haplogroups in Skellefteå.

The diagrams are displaying the most common haplogroups in Sweden, Västernorrland and Skellefteå, right now. It is interesting to see that some haplogroups is much more common in some areas but rare elsewhere. But one should always remember that the differences could also in part be due to more testing of certain haplogroups being done as part of various projects, such as the investigation of the Bure family dynasty in the Skellefteå area.

Source: Swedish Haplogroup Database