

Catherine Pillard
A King's Daughter, of Algonquian-Siberian origin, born in France about 1651...
What is wrong with this picture?

Raymond F. Lussier, Thomas King-McMahon, Johan Robitaille

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Study Background

The traditional belief regarding the origins of Catherine Pillard is that she was born in La Rochelle, France, immigrated to Quebec around 1663 as a "King's daughter", and later married Pierre Charron. Pierre and Catherine had twelve children from their marriage. Their descendants today include all the authors of this study.

Historically, there has been little reason to bring Catherine's origins into question. There is a baptismal record for Catherine, daughter of Pierre Pillard and Marguerite [...] dated March 30, 1646 ⁽⁷⁰⁾, in Ste-Marguerite chapel in the parish Notre-Dame-de-Coungnes in La Rochelle, France. The record is hard to decipher, and the mother's name is missing; according to *Fichier Origine* and the *Research Program in Historical Demography* ⁽⁷¹⁾, her name is probably Marguerite Moulinet.

Even with the collective experience in native genealogy and history of the researchers involved in this study, they never considered Catherine Pillard a "person of interest" in any Native American DNA study before today. The authors knew her origin, her parents, and that a baptismal record had been found in recent years. She was from a period when women are listed on ship records from France to Nouvelle-France. There was no obvious "red flag". Nevertheless, her estimated age upon arrival based on census records, the delay between arrival and marriage, and the many variations of her surname, often not even phonetically similar, could have drawn attention.

However, recent DNA evidences bring the traditional notion of her origins under serious scrutiny. Current DNA evidence now suggests the strong likelihood of her maternal origin in the Americas, specifically in Quebec, and the virtual impossibility of her originating from France.

How did this surprising turn of events come about? Advances in DNA testing, its availability to ordinary individuals, as well as remarkable coincidences, led the authors to gather genetic and genealogical evidence about the true origins of Catherine Pillard.

Origin of the investigation

The researchers involved in this study are all participants in the "Amerindian Ancestry Out of Mi'kma'ki" DNA project. The focus of that project is to gather DNA evidence for "persons of interest" believed to have possible Mi'kmaq Indian ancestry, specifically among historical Bras d'Or Indians of Cape Breton.

One of the project's primary research methods is to target specific "persons of interest" and to coordinate and finance DNA testing for genealogically proven descendants. Another research method is to scout for results coming out of other research projects or public results from DNA laboratories, and to follow up on any leads indicative of possible native ancestry.

While researching results posted by the “French Heritage DNA Project”, one of the participants came across haplogroup A mtDNA HVR1 results for an individual named Nicole Boutin. Nicole had also posted a genealogy outline that tracked back through the most distant female line to Catherine Pillard, *Fille du Roi*, immigrant from France.

This posting was of interest because haplogroup A is associated with Native American, East Asian or Siberian origin. The finding was posted on the forum of the Amerindian Ancestry Out of Mi'kma'ki” DNA project, and some discussion followed about the validity of Nicole's genealogy. Some links were hard to corroborate although the work appeared consistent.

Many of those who initially reviewed Nicole's genealogy were reluctant to believe in the possibility of the genealogy being correct. It clearly led to scientific evidence sharply at odds with traditional beliefs about Catherine's Franco-European origins. One would intuitively expect her to originate in haplogroup H, or any of the other common European mtDNA haplogroups.

A haplogroup A result must surely point to a genealogical error somewhere in the lineage. That would be the conclusion to draw based on conventional wisdom, since Catherine Pillard in haplogroup A could not possibly be consistent with her supposed European origin! However, Ray Lussier chose to continue the investigation to resolve the issue once and for all.

Since the topic involved Quebec origins, it was out of the scope and area of expertise of the majority of the participants to the “Amerindian Ancestry Out of Mi'kma'ki” project. At that point, Ray Lussier and Tom King-McMahon decided to join forces and independently aim for resolution on whether Nicole Boutin's genealogy truly pointed to Catherine Pillard. They both fully realized the challenges that were ahead, both with the effort needed to find out a credible proof as well as to overcome the unavoidable skepticism that would result from such a thesis.

Study Scope

The early findings could lead to wild speculation about how such a result could be possible. Does it point to faulty records or suggest that Catherine or one of her ancestors had been taken to France? The team agreed to keep the focus of the study on the scientific and genealogical facts and to expand the available data to either form a convincing proof or show the error. Who was the most distant maternal ancestor of Nicole Boutin, if not Catherine Pillard?

Methodology

After a first review of Nicole Boutin's genealogy by Ray Lussier, Tom McMahon contacted Nicole and coordinated with the American-Canadian Genealogical Society for independent evaluation of Nicole's line. Nicole consented to support the study and to take another mtDNA test to get her HVR2 results. This extra testing was subsidized by the Amerindian Ancestry Out of Mi'kma'ki project. The principals of the project provided welcomed friendship and moral support to the researchers.

The search continued for more subjects. Because of a remarkable set of coincidences, two subjects having identical HVR1 DNA results to Nicole Boutin emerged from the search. Coincidentally, John Croteau and Sandra McGrath also had identical HVR2 results.

Both Croteau and McGrath had sketchy genealogies. Ray Lussier first looked at the genealogy of Sandra McGrath, but was unable to find a definitive lineage. Because of the known demographics of Catherine Pillard's family members, Sandra could very well be a descendant of Catherine. The research continues

on this lineage. The team had better luck with John Croteau. Once contacted, John became an active participant in working out the details of his genealogy. He did connect to Catherine Pillard.

At this point in the study, Ray Lussier called on his longtime friend Johan Robitaille to come on board with the study. She directed and coordinated getting the original records needed to prove the two genealogies leading to Catherine Pillard for the Quebec portion, and reading all available scientific publications relevant to the case.

Johan and Tom spent many months going through these publications and exchanging their findings to have an accurate picture. Tom was in charge of compiling the DNA data.

DNA Evidence

The mtDNA of Nicole Boutin, John Croteau and Sandra McGrath tested to be haplogroup A. The genealogies of two of the individuals converge to a common direct maternal ancestor, that of Catherine Pillard through two of her daughters, born twenty years apart. The team set out to learn more about haplogroup A and specifically about the origins of their distinct mutations.

Their results were as follows:

Haplogroup A:

HVR1: 16223T, 16227C, 16290T, 16311C, 16319A, 16519C

HVR2: 73G, 235G, 263G, 315.1C, 522-, 523- and 544T.

European Haplogroups

It has been reported that about 99% of European mtDNA fall into one of ten haplogroups: H, I, J, K, M, T, U, V, W or X. H is the most prevalent, comprising nearly half of all Europeans. ^(2, 58, 42) Specifically, in a 2004 paper, many maternally unrelated French volunteers had their mtDNA tested, and there were no haplogroup A reported. ⁽¹⁷⁾

Haplogroup A and its origin

The literature reports so far that haplogroup A probably arose in Asia some 60,000 YBP (years before present) and split from its ancestral superhaplogroup N around that time period. It likely arose on the plains of Central Asia. Groups moving east brought haplogroup A with them and spread into several areas in east Asia. Found throughout modern Asia, it tested in high concentrations in northeast Siberia. ⁽³⁾

First discovered among aboriginal American populations, haplogroup A has played an important role in allowing geneticists to use mtDNA mutations as an evolutionary clock to try dating prehistoric migrations.

Most scientific publications state that above 90% of all Amerindian mtDNAs belong to one of five major founding mtDNA lineages labeled A, B, C, D, and X.

Haplogroup X, which represents a minor founding lineage in Amerindians, is also present in Europe although at a low frequency. ^(7, 14)

Native American migrations and origins

There is general agreement the Amerindian's founder populations migrated from Asia into America through Beringia (Bering land bridge). This is the only statement everyone agrees on. When, how,

whether genetic contributions from other places have occurred is a constant source of disagreements. New discoveries keep challenging the most commonly accepted theories, especially the time frame. It is outside the scope of this article to give the reader an accurate view and do justice to this subject.

Siberian and Amerindian mtDNA mutations

Since there is much debate on the time and number of migration of populations to the New World, scientists looked at the source or origin of migrations. Studying the correlations between Asian, Siberian and Amerindian mtDNA sequences yielded insight into the sources of the migrations.

One of the first studies looked at the mtDNA from over 400 aboriginal individuals in northern Siberia and the Russian Far East. ⁽⁵⁹⁾ The only Amerindian haplogroups found in these populations were A, C, and D, of which A represented 15.3% of the total, but increases to 68% in the Chukchi of the Chokotka peninsula (northeast Siberia) near Alaska. The haplogroup distribution of the Chukchi most closely resembles that of Native Americans. ⁽⁶⁸⁾ Further studies eventually found haplogroups B and X in Siberia.

An important result of this study was that all the Siberian haplogroup A mtDNAs contained the characteristic 16290T and 16319A mutations. These sites were also present in the haplogroup A from Boutin, Croteau and McGrath. More studies of mtDNA sequences in Asia yielded much information about haplogroup A's evolution. For instance, during the transition from the superhaplogroup N to haplogroup A (roughly 50,000 to 60,000 years ago), the following mutations, found in all haplogroup A sequences, arose:

HVR1: 16290T, 16319A

HVR2: 73G, 235G, 522-, 523- (variable). ^(59, 60)

In addition, it was discovered that further evolution of haplogroup A in the founders of the Americas resulted in the following mutations also found in most Native American haplogroup A sequences

HVR1: 16111T (debatable), 16362C

HVR2: 64T, 146C, 153G.

Thus, the HVR regions of Native American haplogroup A mtDNA sequences usually have most of the following basic transitions:

HVR1: +/-16111T, 16223T, 16290T, 16319A, 16362C

HVR2: 64T, 73G, 146C, 153G, 235G, 522-, 523-. ^(9, 39, 45, 26, 41, 59, 60)

Based on the mtDNA findings of the three subjects, the results found were unusual for Amerindians. Although they include all the root values, they lack all of the characteristic HVR1 mutations or HVR2 mutations:

HVR1: 16111T (debatable), 16362C

HVR2: 64T, 146C, 153G.

This would lead one to believe the matrilineal origin of Catherine Pillard is of Siberian descent.

Consulting with DNA experts

The team consulted with DNA experts about the origin of this particular mtDNA haplogroup and mutations, and told the experts of three DNA samples from individuals of Quebec origin showing haplogroup A with identical mtDNA test results. Given the Native American population in Quebec and a high incidence of haplogroup A in the Northeast regions of North America, the result did not surprise the experts.

The team further told them of the existence of the lineages of two of the people in question. They traced to a common direct maternal ancestor believed to have been born in France and to have migrated to Canada around the mid 1600's. The only explanation for the geographic origin of the mtDNA samples the team could think of was Siberia or the Americas. It is dubious this result could come from France. However, a strictly Canadian origin presents questions about how a pre-Amerindian or Siberian sequence could occur in the Native population of Canada.

The experts answered:

1. Donald Yates (www.dnaconsultants.com)

Tuesday, April 10, 2007

"Hg A is very typical of Algonquian Indians, who came from Siberia originally, so I think you have drawn the right conclusions. Donald Yates"

Tuesday, May 15, 2007

"I would guess that it is just an otherwise unrecorded type of A. Less than a tenth of native haplotypes have been put into databases. Donald Yates"

2. Doug Wallace, Ph. D., Center for Molecular and Mitochondrial Medicine and Genetics, University of California, Irvine, CA

Thursday, April 12, 2007

"This sequence is consistent with a rare variant of Siberian haplogroup A. It is very unlikely to be of French origin. Doug Wallace"

3. Your Roots for Real Team (Peter Forster, Ph. D. is the team's geneticist)
www.rootsforreal.com/service_en.php

Wednesday, May 2, 2007

"Interesting! Could it be an A1 as opposed to the A2? Forster and colleagues speculated in their 1996 paper that both A1 and A2 came as (Amerindian) founders from Siberia and probably at the same time. There is a more recent paper on full mitochondrial DNA analysis published by Prof. Bandelt, which looked at this question in detail. That might be helpful for you to peruse Bandelt HJ, et al. *Identification of Native American founder mtDNAs through the analysis of complete mtDNA sequences: some caveats*. Ann Hum Genet. 2003 Nov; 67(Pt 6):512-24. Your Roots for Real team"

Native American Haplotype A1 versus A2

A 1995 paper reports that roughly 51% of Mohawk and about 23% Ojibwa Indians tested to be haplotype A1 without the 16111T mutation (found in haplotype A2). The samples from Boutin, Croteau and McGrath were also missing the 16111T mutation and thus belong to the A1 subgroup. In that same study, 0% French Canadian Caucasians and 0% US Caucasians tested haplogroup A.

A 2003 paper states that 48% mtDNA samples from Native Americans from the United States tested to be haplogroup A. The highest frequency of haplogroup A tested were from the Algonquian, Siouan and Mohawk populations. The paper also concluded that haplotype A1 is present in the Amerindians from the Northeast, but not in the Southeast of North America. ⁽¹¹⁾

Since haplotype A1 exists in Amerindian populations of the Northeast, the team set out to look at specific mutations in HVR regions in the Boutin, Croteau, and McGrath mtDNA (the reference mtDNA). The study of many papers did not find an exact match to their mutations in the HVR1+2 regions of their haplogroup A. Finding close matches concentrated the search on the rarer mutations in the HVR1, 16227C and 16311C, which pinpointed geographically the populations from which the mutations originated.

Matches to the reference mtDNA

The first close hit was in the Avam Nganasan population. Haplogroup A ubiquitously occurs in Mongoloid Siberian populations, especially in the northeastern part of Siberia. It turns out the Nganasans are one of the indigenous peoples of Siberia. They are the northernmost of the Samoyedic peoples. They live in the northeast central part of Siberia. Up to the mid-1970s, this ethnic group was in essence an anthropological isolate, secluded from the rest of the world. Throughout most of their history, they have been nomadic hunters, fishers, and herders of reindeer. They practice Shamanism. ^(20, 69) Besides the mutations of Boutin, Croteau and McGrath, the Nganasans have two more mutations, 16230 and 16256. The 16519C mutation was not tested as it is not relevant to ethnic studies.

In 2005, researchers looking for the ancestors of Amerindian mtDNA haplogroups analyzed the mtDNA of 531 individuals from nine indigenous populations in Siberia. They and others looked at all their data and came up with similar data sets pointing to Siberian arctic and subarctic populations. These included the Mansi, the Ket of the Lower Yenisei, the Nganasan, the Chukchi (mainly haplotype A2), the Siberian Eskimos, the Itelmen, and the Koriak of Kamchatka. The data encompasses all the linguistic groups of indigenous Siberian populations, and support a dual Siberian origin for Amerindians, A1/A2. ^(52, 16, 51, 47)

In further analysis, there were also close hits to the reference mutations from the Mansi, Nogays, and Bashkir populations. As stated above, these populations had mutations similar to Amerindian populations. The Mansi are an endangered indigenous people living in Khantia-Mansia, an autonomous region within Tyumen Oblast in Russia. Looking at the 2005 paper again, it stated that haplotype A complete sequences revealed in the Mansi and the Ket of the Lower Yenisei belong to A1, suggesting that A1 mtDNAs occasionally found in the remnants of hunting-gathering populations of northwestern and northern Siberia belonged to a common gene pool of the Siberian progenitors of Paleoindians. ⁽⁵²⁾

Papers published in 2002 and 2004 by Bermisheva MA *et al*, report similar variants of haplotype A containing these mutations from the Ural mountain area, in the Chuvash, Nogays and Mari people. These articles reference Wallace D *et al* in 1999, that states the presence of the A haplogroup outside Northern and Eastern Asia and America has not been reported so far. ^(10, 52, 64)

Conclusions

Based on the sound genealogical and scientific DNA evidence presented here, what can be reasonably deduced about the maternal lineage of Catherine Pillard?

The proven lineages of two of the tested individuals converge into the historical person Catherine Pillard, who lived, married and raised her large family in 1660s Nouvelle-France. Despite the existence of records of Catherine originating from France, the experts testimonies cited in this article prove it would have been impossible for her mother to be of European origin. The mtDNA evidence proves to be a rare form of Siberian haplogroup that match the Algonquian haplogroup or that of other northeastern natives of North America.

The experts providing responses to the queries agree that a Siberian or Algonquian DNA of this type could not come from France in the subject time frame unless it had been brought there from the new world.

Contact with Siberia had scarcely begun at the time of Catherine's birth. The belief that an isolated line, one with distinct mtDNA haplotype A1 mutations, could then appear in western France and next spread to the Americas would be a most unreasonable conclusion. Even if the mtDNA points to a distant Siberian maternal ancestor, the most probable origin of the line in more recent history would be in pre-European North America.

Siberia or America? Does this conclusion point to a late or early migration from Siberia or to the possibility of dual haplotype A1/A2 lineages in Amerindian origins? Is there just a lack of enough DNA samples to have identified this type in the past? Further research by scientists specializing in such disciplines will have to answer these questions.

Could Catherine Pillard have been in France or even been born there? Frankly, the authors cannot say for sure. The children of the couple Pierre Charron Ducharme and Catherine Pillard were born in Québec and have a French surname. We only know that Catherine Pillard is not of French origin. The ambiguities in the records and the inconsistencies in the dates for her significant events, as well as the scientific evidences, cast serious doubt on that long-held belief and lead to suggest she is of native origin.

Recommendation for Future Research

- **Historical**

The authors recommend further research to identify the historical circumstances that could have led to the quiet assimilation of Catherine Pillard into the fabric of New France.

- **Genealogical**

The authors recommend completing research on the genealogy of Sandra McGrath and identifying more DNA subjects. They hope someday to find the same mtDNA pattern in families other than Pillard.

- **DNA**

In the interest of researchers and geneticists alike, more people should undertake DNA tests AND also attach the results of the direct lineage information relevant to the test taken, be it a matrilineal mtDNA test or a patrilineal Y-DNA test. This will ensure the DNA data obtained will be of use to researchers.

Lexicon of mtDNA terminology

MtDNA : Mitochondrial DNA is the genetic material of the mitochondria that generates the energy for the cell. The mitochondria of the sperm are in the tails and are usually lost as the sperm delivers its genetic material to the egg. Therefore, mtDNA is passed down from the mother to all her children, to be transmitted generally by her daughters.

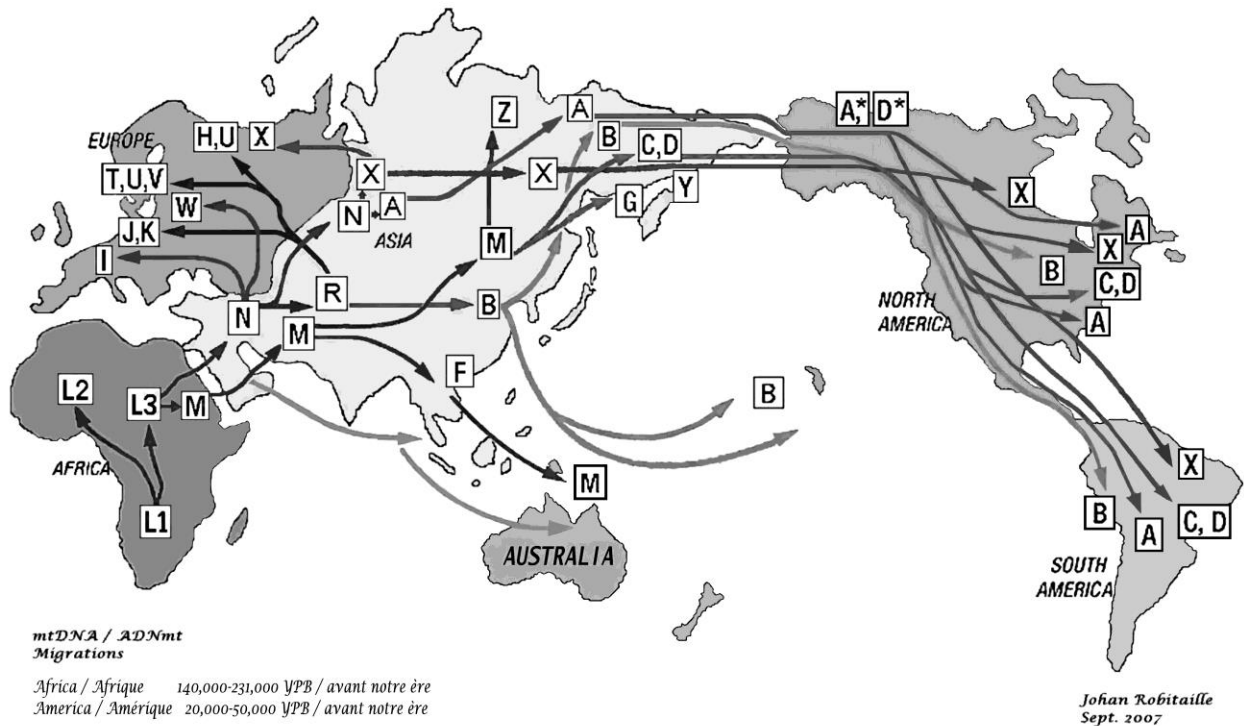
MtDNA testing: enables the detection of mtDNA mutations and the classification of the sample in the right haplogroup.

Haplotype: this DNA signature depends upon the hypervariable regions HVR1 and HVR2 found.

Haplogroup: a haplogroup is a large group of haplotypes, which are series of alleles at specific locations on a chromosome.

HVR: there are two mtDNA hypervariable regions only used to classify mtDNA. HVR1 (base pairs numbered 16001-16568) is a low-resolution region and HVR2 (base pairs numbered 001-574), a high-resolution region.

mtDNA Migrations Map



A few known facts about Catherine Pillard

The baptism of Catherine Pillard (Pillat), found in France in 1646, does not match the age given by Catherine on various census and at the time of her second marriage:

Census 1667 - 18 yrs old – birth abt.1649

Census 1681 - 30 yrs old – birth abt.1651

Her 2nd marriage in 1709 - 55 yrs old – birth abt.1654

Her burial record in 1717 indicates her age to be 70 years old, therefore born about 1647. In the early years of the colony, age was often estimated based on physical appearances or second hand information, therefore found to be rarely accurate.

Tanguay estimated her date of birth as 1651 based on the 1681 census known to be the most accurate before 1700.

According to Archange Godbout, in “*Emigration rochelaise en Nouvelle-France*”, page 190, Catherine Pillard, a *Canadian*, was born in 1651. A slip of the tongue, maybe...

As for René Jetté, he notes her confirmation in May 1664. According to the vital records (Drouin 1184c0227 Notre-Dame, Montréal) the exact date should read May 11th, which means she would have arrived possibly in 1663, as the first ship in 1664 arrived only on May 25th.

Matrilinear Outline Genealogies	
Catherine PILLARD	
(Pierre Charron dit Ducharme 1665-10-19 Montréal, Qc)	
Catherine CHARRON-DUCHARME (François Chagnon 1679-07-23 Contrecoeur, Qc)	Marie Louise CHARRON-DUCHARME (Michel Colin 1703-02-19 Longueuil, Qc)
Marie Angélique CHAGNON (François Benoit 1711-02-07 Ile Bouchard, Qc)	Marie Madeleine COLIN dit Laliberté (Charles Charron 1739-02-08 St-Sulpice, Qc)
Marie Antoinette BENOIT-LIVERNOIS (Jean-Bte Leduc 1738-10-04 Verchères, Qc)	Marie Judith CHARON dit Larose-Cabana (Gabriel Godu 1763-01-24 Verchères, Qc)
Marie Angélique LEDUC (Louis Langevin 1760-10-06 Verchères, Qc)	Marie Judith GODU (Jean Bte Vachon 1788-06-30 St-Mathias, Qc)
Angélique LANGEVIN (Joseph Dansereau 1777-11-24 Verchères, Qc)	Marie Judith VACHON (François X Dalpé 1830-02-22 St-Hyacinthe, Qc)
Marguerite DANSEREAU (Augustin Guyon 1811-10-14 Verchères, Qc)	Angélique DALPÉ dit Pariseau (Louis Ménard/Minor 1853-06-04 St-Albans, VT)
Marguerite GUYON dit Dion (Olivier Cordeau 1844-08-20 Verchères, Qc)	Sophie MINOR (Frederic A. Johnson 1888-04-02 Millbury, MA)
Delphine CORDEAU (Camille Daigneault 1877-09-04 St-Dominique, Qc)	Dorothy JOHNSON (George Elmer Brady 1928 Millbury, MA)
Marie Yvonne DAIGNEAULT (Arthur Richard 1920-02-11 St-Hyacinthe, Qc)	Betty Ann BRADY (Bernard Croteau 1952-08-09 Auburn, MA)
Thérèse RICHARD (Pierre Boutin 1951-08-04 Viauville, Qc)	John CROTEAU Worcester (MA)
Nicole BOUTIN Deep River (ON)	

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Mission accomplished...From *Le Chaînon* (SFOHG) Vol. 26 No. 1 Winter 2008 & Vol. 26 No 2 Spring 2008:

Matrilinear Outline Genealogy	
Catherine PILLARD	
(Pierre Charron dit Ducharme 1665-10-19 Montréal, Qc)	
Catherine CHARRON-DUCHARME (François Chagnon 1679-07-23 Contrecoeur, Qc)	Anne CHARRON-DUCHARME (Pierre Goguet 1686-01-18 Boucherville, Qc)
Marie Angélique CHAGNON (François Benoit 1711-02-07 Ile Bouchard, Qc)	Marie Gabrielle GOGUET (Jean Bte Gadbois 1725-03-11 Longueuil, Qc)
Geneviève BENOIT-LIVERNOIS (Jean Bte Baudry 1751-08-09 St-Charles-sur-Richelieu, Qc)	Marie Josephte GADBOIS (Jean Marie Lamarre 1753-01-15 Longueuil, Qc)
Marie Magdeleine BEAUDRY (Louis Guyon 1771-10-07 St-Charles-sur-Richelieu, Qc)	Catherine LAMARRE (Jacques Legrand 1785-06-20 St-Philippe de Laprairie, Qc)
Marie Amable GUYON-dit-Lemoine (Joseph Bourgeois 1808-05-02 St-Marc-sur-Richelieu, Qc)	Catherine LEGRAND (Louis Vachereau 1809-10-16 St-Philippe de Laprairie, Qc)
Euphrosine BOURGEOIS (Louis Lucier 1833-06-10 St-Antoine-sur-Richelieu, Qc)	Henriette VACHEREAU (Léandre Robert 1833-10-13 St-Philippe de Laprairie, Qc)
Marie Delphine LUCIER Born 1839-06-15 St-Antoine-sur-Richelieu (Edward Dufresne/Ashley abt 1857)	Marcelline ROBERT (Augustin Patnode 1866-06-10 St-Patrick de Châteauguay, Qc)
Mathilde DUFRESNE/Ashley B. 1865-01-20 Notre-Dame de Stanbridge, Qc (Casimir P. DeForge 1882-05-27 Richmond VT)	Mary Louisa PATNODE (Lemuel Postel 1898-01-24 Stone City, Iowa)
Delphine DE FORGE (Bell Hiram May 1904-02-29 Waterbury, VT)	Martha Florence POSTEL (Edward Pospishil 1925-01-17 Anamosa IA)
Lena Della MAY (Ernest Oliver Morrow 1924-04-30 Waterbury)	Mary Dorothy POSPISHILL (John Alfred jr Godar 1947-06-19 Lisbon, IA)
Faith Eleanor MORROW (Warren Francis De Forge 1943-08-08 Dodge City, KY)	Mark Edward GODAR Cedar Rapids, Iowa
Sandra De Forge McGrath, Fancy Farm, KY	