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That Shocking Season: Winter in New France

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THAT SHOCKING SEASON:
WINTER IN NEW FRANCE

A Thesis

Presented to
The Faculty of the Department of History
The College of William and Mary in Virginia

In Partial Fulfillment
Of the Requirements for the Degree of
Master of Arts

by
Pamilla J. Gulley
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APPROVAL SHEET

This thesis is submitted in partial fulfillment of the requirements for the degree of

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ABSTRACT

The purpose of this study is to recount the descriptions of Canadian winters by early French settlers and document how those colonists adapted to these winters.

The French believed that New France, being on the same latitudinal lines as Old France, had the same climate as the mother country. Therefore, New France had the potential to be the ideal colony. Time after time the extreme cold proved this theory to be sadly incorrect. Letters, diaries, church and government reports are full of colorful descriptions of the intense cold.

The French colonists were fortunate to have examples of how to survive the ravages of winter in the Indians. The French were not afraid to follow Indian modes of farming, travel, and to some extent dressing. The French did not fully conform to all Indian traditions. For example, native French styles are still to be seen today in the architecture of Quebec and Montreal.

Despite this partial adaptation, French colonists were never able to truly conquer the Canadian winters. New France never became the successful colony for which early settlers hoped. However, those early settlers created a new culture, neither French nor Indian, but Canadian.
THAT SHOCKING SEASON:

WINTER IN NEW FRANCE
It is true there is no want of wood to guard against the cold, which very soon becomes extreme, and encroaches greatly on the spring: but it is, however, something extremely shocking, not to be able to stir out of doors without being wrapt up in furs like a bear.¹

Introduction

The winter was "extremely shocking" to the French in Canada. Unprepared by winters in France, survival was difficult at best and for many colonists impossible. Despite detailed reports and often exaggerated descriptions of the long winters of New France, nothing could compare to the actual experience of living through the winter. Father Pierre de Charlevoix experienced first-hand the shocking rigors of winter. A Jesuit priest first sent to New France in 1720, he was assigned to report to the French government on routes to the west and the western boundaries of New France while under cover of visiting Jesuit missions. During his travels he kept a journal which gives valuable insights into the powerful effect of winter upon the French in Canada. His comments make the reader vividly aware that the relationship between the climate and people was much closer in the seventeenth and eighteenth centuries than it is today. As the hot summers of Virginia shaped the lives of English adventurers, so the winters of New France sculpted French colonists. Winter in New France forced the French to conquer the cold or die.

Although winter conditions in New France were significantly colder than at home, winter in France during the seventeenth and eighteenth centuries was more severe than it is in the twentieth century. Western Europe suffered from a "little ice age" between 1600 and 1850, in
which winters were typically longer than they had been during the Middle Ages. Some historians such as H. E. Landsberg question the term "little ice age," saying that the weather was more of a series of erratic "ups and downs." Nevertheless, there were definite periods of intense cold. The years from 1605 to 1615, 1674 to 1682, and 1695 to 1698 were extremely cold. Excepting the years 1709 and 1740, in general the first half of the eighteenth century was comparatively temperate. H. H. Lamb identifies the decades of the 1630s, the 1730s, and the 1770s as having especially mild winters. The seasonal variations in France are important in understanding how the winters in Canada were perceived. The varying extreme cold and mild winters during this period can help explain the different perceptions of explorers and settlers in New France.¹

The area along the St. Lawrence River had some of the most extreme winters. These winters were both longer and more demanding than those generally experienced in France. Winter along the St. Lawrence was "one of the coldest in the world and the one which received the most abundant snows." In addition to the excruciating cold and the inordinately heavy snows, there were also freezing winds to make the winters less bearable. The mean January temperature along

the St. Lawrence was between -20 degrees Celsius and -4 degrees.\textsuperscript{2}

Unfortunately when looking for precise temperatures in Canada during the colonial period we find little exact data. Scientists are able to distinguish global trends for this period, but there is no specific information for Canada. One problem is that an accurate thermometer was not in use until the nineteenth century. There was no central agency charting the weather and thus no weather statistics to use when studying the temperature.\textsuperscript{3} Looking at diaries, travel accounts, and religious orders’ papers gives clear indications that the winter in New France was extremely cold. However, when reading these accounts it is important to remember their inherent problems. Very few of the early Canadian writers were scientists, so their observations on the weather lack clinical details. For some writers it was advantageous to exaggerate the cold weather. For others, trying to colonize the new land, it was more profitable to minimize the severity of the cold.

However lacking these records are in precise scientific detail, the writers certainly evoke the harsh chill of


\textsuperscript{3}David Ludlum, \textit{Early American Winters: 1604-1820} (Boston: 1966), ix.
winter with a charm and liveliness that can never be found in statistics. Despite firm data, it is clear that from Jacques Cartier on, the land across the ocean from France was intensely cold, but had immense possibilities for providing the French with wealth and power. New France simply needed brave men and women ready to conquer the cold.
The Micmac Indians told Father Chretien Le Clerq that he would recognize winter's "approach by the time when the cold becomes intense, when the snows are abundant upon the ground, and when the bears retire into the hollows of the trees." No one, not even an inexperienced French priest, could mistake the winter season. In fact, the French would come to write about the extreme cold frequently. People sought to adequately describe the intensity of the winter's temperatures, as well as to explain why there was a difference between the climate of the old world and the new.

The first French explorers and settlers who came to New France had firm beliefs concerning the climate. Because Canada was on the same latitude as France, many of these people expected winter to be the same as winter at home. Fr. Pierre Biard, a Jesuit priest in Port Royal from 1611 to 1613, defined Canada as "that territory across the French Ocean which extends from the forty-first to the fifty second, or even fifty-third degree of latitude." Because New France was exactly at the same latitude as old France, he reasoned, the climate should be the same. Thus, Biard claimed that New France was "a twin land with ours, subject
to the same influences, lying in the same latitude, and having the same climate." Nicolas Denys, a merchant and advocate of settlement in New France in the mid-seventeenth century, argued that France should be even colder than New France because the land was "two degrees and a quarter farther south [and opposite] our southern coast." An intense cold period characterized France at this time which may explain why Denys and Biard believed that equivalent latitudes should result in equivalent temperatures. The notion that the climates of France and Canada were related because of the latitude continued throughout the century. The sieur de Diérèville, a well-educated surgeon travelling in Canada during the winter of 1699-1700, claimed that the climate of Port Royal had the same latitude as France and the same weather. Despite this description, he observed that the Canadian winter was more wintry with heavy snows and frosty winds. The differing perceptions about climate thus created confused reports that in turn affected prospective French colonists.

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7The Sieur de Diérèville, Relation of the Voyages to Port Royal in Acadia or New France, trans. Mrs. Clarence Webster, Champlain Society Publications (Toronto: 1933), 90.
Although Dièréville and others wrote that Canadian winters were colder, accounts persisted that winters in New France could be equated to the climate at home. Like Biard, Fr. Paul Le Jeune initially thought that the climate was equivalent to that of France. He wrote that the French in Canada complained that they had endured worse winters in France.\(^8\) Furthermore, Le Jeune wrote that he had heard the stories of how cold and intolerable Canadian winters were. He acknowledged that there were days when the cold was intense, but said that these days were infrequent. Otherwise, the days were "more than tolerable." In fact, Le Jeune described the weather as so congenial that the French

\[
\text{roll on the snow as they do in France upon the grass of our meadows, so to speak; I do not mean to say that it is less cold than it is white, but the days are fine, and the Sun is warmer than in many parts of France.}
\]

For Le Jeune, this wonderful weather was due to the fact that they were on the same line of latitude as La Rochelle. Any cold that the French might experience could be dissipated by a little exercise.\(^9\) Later in his description of the winter of 1632-1633, he reiterated his theory that the line of latitude accounted for the warm winter. Two years later, Le Jeune reported to his superior that the

\(^8\)JR, 5:127.

\(^9\)JR, 5:49.
The winter of 1635 was both "short and moderate."\textsuperscript{10} Denys also set out to disprove what he considered to be a myth about the climate in New France. Indeed, the weather was not nearly as cold or the snows as deep as was often reported. He stated that "it rarely snows more than twenty-four hours together, and as a rule this only falls during a day or a night."\textsuperscript{11} Marie de l'Incarnation, an Ursuline nun in Quebec from 1639 to 1672, wrote that she passed the winter of 1640 as easily as she would have in France. Very few of the nuns were sick, and she herself had never felt better. She attributed her good health to the Canadian air which was cool but healthy.\textsuperscript{12}

Like Mère Marie in her first winter, another Jesuit priest compared winters in New France favorably to winters at home. Although the Canadian winter was cold and long, it was still better in his opinion than the winter in Paris for a variety of reasons. Anyone could cut wood for heat. Also, the winter was beneficial for hunters; snow made the animals easier to catch. Working people also benefitted from the winter because the snow smoothed the roads and travel was possible on the frozen rivers. Canadian winters were also pleasant for walking; the weather was generally

\textsuperscript{10}JR, 8:155.

\textsuperscript{11}Denys, \textit{Natural History}, 120.

clear with plenty of sun. Peter Kalm, the Swedish naturalist and traveller, spent the winter of 1749 in Quebec. Remarks on the weather peppered his observations. He recorded in March that this winter had been extremely mild with only two feet of snow in Quebec, and not even the older people could remember a warmer winter. However, the cold was nothing if not unpredictable and in May of the same year Kalm wrote that on May 3 the "cold was so great in the morning, that Celsius's or the Swedish thermometer, was four degrees below the freezing point."

As Kalm indicated, in contrast to the accounts of pleasant winters and favorable comparisons to French temperatures, a surprised tone creeps into many of the winter descriptions. Although many believed in the theory that if France and New France were on the same latitude, the two countries must have the same temperature, the accounts of overwhelming cold and snow were widespread and outnumbered those accounts of more moderate weather. Even Fr. Biard changed his mind on Canadian winters and was soon writing home of his amazement at the cause of the greater severity of Canadian "hoar frosts and cold." Fr. Charles L’Allemant was surprised that, although the Canadians were two degrees further south than Paris, the winter still

\[\text{13JR, 48:177-179.}\]

\[\text{14Peter Kalm, } \text{Travels into North America} \text{ trans. John Reinhold Forster (Barre, MA: 1972), 478.}\]
persisted for five and a half months, with snow falling in November and not melting until almost May. This belief in the latitude also influenced another priest writing in 1710 to comment on his surprise that the land which was on "the same parallel as old France, is continually desolated for three or four months." These disparate accounts confused more than one person in New France. In 1721 an amazed Pierre de Charlevoix noted that people in France still had no clear concept of the weather in New France since "in France, where [the French] so often meet with persons who have spent great part of their lives in Canada, they should have so imperfect a notion of the country."  

Before Jacques Cartier became aware of the nature of the pitiless Canadian winters, he believed that winter would be similar to the cold season in France. In September 1535, the Indians warned him that their god brought harsh winters. Ignoring what he considered unwarranted caution, Cartier bragged that he had experienced the winters in Bretagne. Totally convinced of his own opinion, Cartier did not heed the Indians' warnings and was completely unprepared for the brutal cold and deep snow that came. Later he wrote that the winter of 1535-1536 was especially cruel. Cartier

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recorded that the ice, "more than two fathoms thick,"
encased the ship from mid-November until mid-April and
thickly coated the rigging and hulls of the ships. It was
so cold that all the explorers' liquids froze solid. During
that first merciless winter twenty-five Frenchmen died. In
his History of New France, Marc Lescarbot recorded the
severe cold experienced by Jacques Cartier, where climatic
conditions were difficult, scurvy ensued, and many of
Cartier's crew died.18

Reports of harsh Canadian winters continued to spread
throughout France. Samuel de Champlain, soldier, explorer
and cartographer in New France during the early decades of
the seventeenth century, spent the winter of 1604 at the
island of St. Croix. He and his compatriots were surprised
by the fact that snow fell on the sixth of October and that
it was still three-to-four feet deep at the end of April.
"The cold was severe," wrote Champlain, "more severe than in
France and lasted much longer." 19 As Cartier had
experienced in the winter of 1535-1536, the supply of
liquids had frozen "except the fortified Spanish wine; cider

18Hiram B. Stephens, Jacques Cartier and His Four Voyages
to Canada: An Essay (Montreal: 1890), 80; Marc Lescarbot,
The History of New France trans. W. L. Grant (Toronto:
1911), vol. 2, 21.

19Samuel de Champlain, The Works of Samuel de Champlain
ed. and trans. H. H. Langton and W. F. Ganong, Champlain
was served by the pound." According to Champlain, winters in New France lasted six months. Because of the harsh conditions at St. Croix, the French moved to the mainland and set up Port Royal in hopes that the cold would not prove so disastrous. The new settlement was protected from north-west winds which had tormented them the winter before. Port Royal also offered plenty of fresh water, in addition to large quantities of wood for fires. Champlain reported that the "winter was not so sharp as the year before, nor the snow so deep, or of so long duration."  

Many of the descriptions of winter in New France are matter-of-fact statements describing the cold. However, some writers found that exaggeration was the only way to truly describe the harsh, unending winters of New France. French colonists wanted people at home to fully understand the winter experience, and exaggeration was an effective device. Francois Rabelais in 1552 published the Quart Livre which included an account, probably based on Cartier's voyages, of the giant Pantagruel and his men on the shores of an icy sea. As their ship approached the frozen shore, Pantagruel heard voices across the water. As they moved

20Carl O. Sauer, Seventeenth-Century North America (Berkeley, 1980), 79.


closer and closer to the land the sounds became louder, yet Pantagruel and his men could see no one. The captain explained that they were listening to the melting cries of a battle that had taken place that winter. The men proceeded to scoop up the frozen cacophony onto the deck in order to find out what had happened. In this sixteenth-century anecdote, Rabelais portrayed the spirit of the colorful exaggerations that many of the French had concerning the winter in New France.23

The bitter cold of New France also impressed Fr. Paul Le Jeune, who vividly and often poetically described just how cold the winters in Canada were. For example, Le Jeune recounted how during one winter he had awakened with icicles, resulting from the moisture of his breath, affixed to his bedcovers. The icicles were still there that evening.24 During the winter of 1632-33 he wrote that the snow was at least four or five feet deep, and often more than ten feet. Shovelling snow to clear the path to his front door, he saw the snow in front of his house as a mountain, where "it rose like a wall, all white, higher by one or two feet than the roof of our house." It was so violently cold that he reported it possible to hear the


24JR, 5:147.
report of the trees splitting and the sound ricocheting like a gunshot through the woods. This example of splitting trees was so evocative of the merciless cold that he used it again in 1634 to illustrate the severity of that winter.\textsuperscript{25}

Although there had been hints of a hard winter earlier during the fall of 1632, not until November 27 did the snow begin to fall in an unceasing cascade. It snowed "so heavily that it deprived us of the sight of the earth for five months." Despite the effect of a white wasteland, Le Jeune occasionally found great beauty in this frigid weather. The extreme cold and the length of the winter exposed a white expanse of snow, the pristine beauty of New France. Everything appeared all white "without mud and without rain." However beautiful Canada appeared under the covering of snow, Le Jeune's other writings make clear that the winter of 1632-1633 was still one of the most difficult winters in a long time.

It was so cold that winter that Le Jeune wrote that he had to keep his ink near "a little pan full of hot coals" even through he was writing near a roaring fire. If he had not done so, he would have found "black ice instead of ink." That same winter the river was frozen from November 29th until April 23rd. The ice was so thick "a hundred wagons could have passed over it without shaking it." The sieur du Plessis told Le Jeune that while trying to break the frozen

\textsuperscript{25}JR, 5:124-25, 7:41.
river near Quebec, he stood on the shore and "it was all he could do to reach the top of a piece of ice with the rest of a musket that he held in his hand." The cold was especially hard on January 10th. It kept Le Jeune from leaving his room and he saw the world outside through a filter of ice. Icicles formed on the frame of his window and fell "like a lozenge, or a piece of glass" when the weather began to warm.

A keen observer of the weather, Le Jeune continued to include informative winter updates in his reports. He described the frozen St. Lawrence as one huge "mass" of ever-increasing chunks of ice that eventually made a bridge across the river. By February 6, 1634 the St. Lawrence had frozen solid and could be crossed safely on foot. Le Jeune was amazed that the river had even frozen near Quebec.

Due to winter's severity and length, Jesuits like Le Jeune could not help but continue to include winter descriptions in their published Relations. Peter Kalm described the terrible sufferings of the Jesuits during the winter. Living with the Indians, the priests were "obliged to suffer all imaginable inconveniences; such as walking in

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27 JR, 5:147.
28 JR, 6:185.
29 JR, 7:41.
the snow all day; lying in the open air all winter; being out both in good and bad weather."\textsuperscript{30} Caught between the need to minister to the Indians and the harsh winter conditions under which the priests labored, men such as Le Jeune persisted in their calling but continued to record the severity of the climate. The winter of 1636 proved to be especially cold. Le Jeune described the winter as being "harder than bad steel."\textsuperscript{31} Brutal winter followed brutal winter until Le Jeune's reports became almost blase as he recorded weather conditions. He related that the winter of 1639 was unmercifully frigid. It was so cold that a man who died on the fifth of March could only be buried by digging through six feet of snow.\textsuperscript{32} However, some of the winter's more inhumane handiwork could not be casually reported. The winter of 1642-1643 was almost unbearable. On December 27th, the feast day of Saint John the Evangelist, the weather turned particularly frigid with harsh winds and destructive snows. "It is something awful" he wrote, "to see the weather at such times." Many people got frost bite and lost their hands and feet because it was so miserably cold.\textsuperscript{33} Despite his intimate acquaintance with the harshness of Canada's winters, even Le Jeune could not

\textsuperscript{30}Kalm, Travels, 427.

\textsuperscript{31}JR, 9:189.

\textsuperscript{32}JR, 16:187.

\textsuperscript{33}JR, 24:29, 77.
remain unmoved by this suffering caused by the cold.

Thus the descriptions of harsh winters continued one after another. Sometimes the priests included simple comments such as that in the winter of 1649 "the cold was excessive." These direct statements were enlivened by more descriptive accounts, again using colorful narrative as effectively as did Le Jeune. Fr. Bressani clearly expressed the excessive cold during the winter of 1653. It was so intemperate that not only would bare hands stick to any iron, but "a wolf in the woods, licking a hatchet smeared with fat (which is cut with these tools), and then frozen, had left there the skin of its tongue." This Jesuit had a great aversion to the cold and reported many colorful accounts of the cruel winters. Although Bressani had not personally seen the wolf frozen to the hatchet, he could testify himself how in the course of doing chores the sweat on his face froze and his beard formed an icicle in "less than two misereres." More remarkably, Bressani wrote that he had seen "a pot full of ice put by the fire, and the half which was toward the fire would boil, and the other half remain solid as a rock." Even though admitting that Europeans were more susceptible to Canada's wintry climate, he remained firm in his belief that the cold was truly

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\textsuperscript{34}JR, 34:39; For additional forthright descriptions of the cold, see also The Journal of the Jesuits eds. Les abbés Laverdière et Cosgrain, (Quebec: 1871), 13, 120, 191, 249, 275, 331; Les Annales de l'Hôtel-Dieu de Québec 1636-1716 ed. Mère Juchereau, (Montreal: 1939), 30, 77, 93, 299.
extravagant, and supported his statements about the weather by arguing that even some "Barbarians" died of the cold.\textsuperscript{35} 

Again and again matter-of-fact statements that the weather was cold were not enough to convey to the French at home what life in Canada was like. The winter of 1660-1661 was a perfect example of extraordinary winter weather. To illustrate the dangerous winter conditions, a Jesuit priest narrated an event he had witnessed. One Frenchman told another Frenchman that "it froze out of proportion to the coldness of the temperature" in Canada. Thus, the first Frenchman believed it was impossible to run barefoot from a fixed point not too far away and back again without freezing off his feet. The second Frenchman took the bet, and started to remove his shoes and stockings and then ran for the designated house, only two or three hundred paces away. This adventurer lost the bet because after reaching the house, he admitted that his feet were too cold to return. After being wrapped in warm clothes, the second Frenchman declared that he would rather have the use of his feet than to win the bet.\textsuperscript{36} There was no doubt in the priest's mind that this had been the correct decision.

Year after year, the \textit{Jesuit Relations} were filled with reports of intensely cold winters that were never-ending, and extraordinary stories illustrating just how cold.

\textsuperscript{35}\textit{JR}, 39:163-164.

\textsuperscript{36}\textit{JR}, 47:33.
Canadian winters were. Fr. Beschefer wrote that the winter of 1665 was the longest and most difficult winter in thirty years. His description was similar to the descriptions of previous winters by other Jesuits. The snow, which had first fallen in November and had not yet melted by April, was impressively deep. Although the cold was severe, Beschefer was in high spirits because the French were in good health and were in fact healthier than they had been during the summer. Unfortunately, the cold's supposed benefits did not aid everyone. Marie de l'Incarnation complained of the brutally cold winter. The Ursuline community did not survive the winter of 1660 as well as did Fr. Beschefer. She described how they could never get thoroughly warm. Their habits provided little protection from the cold; they "seemed as light as feather." Unlike Fr. Beschefer's community, several of the Ursulines died of cold and Mère Marie was understandably discouraged.

Four years later she again despaired of surviving the winter in New France. It began to snow in mid-October 1669; Marie wrote the former superior of the Ursulines at Tours the next fall describing the terrible cold of the preceding winter. "All the winters are strongly cold in this country," she wrote, "but the last was extraordinarily cold, as much for its strength as for its length, and we have hardly

37 JR, 50:169.

38 Marie de l'Incarnation, Word from New France, 253.
experienced a more harsh winter."

More and more the disparity between the winter climate of France and that of New France came to be questioned and colonists theorized over the differences. One Jesuit priest in 1664 reasoned that because New France was on the same latitude as their mother country, it would eventually have "the same benign atmosphere" as France. The prerequisite for this climatic change was to clear Canada of woods and then cultivate the land. Considering only Canada's snow and ice was short sighted. Although New France was deemed to be "the most ill-favored country in the world" because of the harsh winters, this priest believed firmly that settlement and cultivation would alleviate the severity of the winters. In his opinion, Canada's reputation was maligned back in France and the French were not considering the possibilities for future settlement.

Like this priest, other Frenchmen sought hard to explain the unusual weather conditions in Canada. After observing thunderstorms and lighting flashes on April 18 and 20, one priest reasoned that the remaining snow and the still-frozen river were unnatural. Because of the heat occasioned by the lightning in the air, he believed that the "snows and this cold were accidental and contrary to the

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39 Marie de l'Incarnation, Correspondence, ed. Dom Guy Oury (Solesmes: 1971), 867, 877.
40 JR, 49:213.
nature of the climate."⁴¹

Another Jesuit priest found the reason for the intense cold in Canada’s large forests. "Experience," he said, "teaches us that the woods engender cold and frosts." One could look at the land that had been cleared by the habitants and see that the snow melted more quickly there, and in general was not as cold. If only the forests were cleared away as far as the mountains, Canada would be much more hospitable.⁴² This improvement would benefit the priests and encourage more settlement. In his book on natural history, Nicolas Denys attributed the cold to the large forests covering Canada and suggested that the temperature would be much more habitable if the land were cleared of some of the trees. Like Denys, Marie de l’Incarnation also believed that the immense forests were responsible for the cold. She wrote to her son that the temperature had warmed up considerably since more land was cleared and the forests were shrinking.⁴³

Marc Lescarbot was also interested in the reasons for the climatic differences between Canada and France, although the two countries shared the same latitude. The large, dense forests, he believed, diverted the sun’s rays away

⁴¹JR, 5:181.
⁴²JR, 5:183.
⁴³Denys, Natural History, 250-51; Marie de l’Incarnation, Word From New France, 234.
from the ground. He considered that the proximity of the French settlements to so much water also lowered the winter temperatures. The fact that New France was uncultivated contributed to the cold because "the soil is more compact and the trees and plants cannot easily draw suck from their mother." These arguments were inherently positive: the climate will improve with patience and perseverance.

The forests not only influenced the climate on land but also on the river. One Jesuit tried to explain why the river was still frozen even though the temperature was well above freezing. He deduced that the river froze along its banks, and this ice floated upstream when the tide was high. Because there was a waterfall upstream, the ice could not go very far, and thus began to accumulate in the river, growing ever thicker. Because the river ran through the forest, which prevented the sun's warmth from reaching the ground, the snow and cold could not dissipate and the temperature remained cold.

Not everyone viewed the enormous forests which covered New France as the cause of the extreme cold. One priest thought it ridiculous that "dry and leafless" trees could prevent the sun from melting the snow and mitigating the cold, when the trees did help keep the earth cool during the summer heat. The lack of rain, he explained, was the key to

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44Lescarbot, History of New France, 346.
45JR, 5:183-85.
understanding the cold of Canada. It was a well-established fact, he said, that "even very intense cold is not sufficient to make ice." Dryness was a necessary component for making ice and snow.\(^{46}\) Champlain would have agreed with this theory. He said that the winter of 1604-1605 was especially cold compared to the following winter because it rained much more during the relatively mild winter of 1606.\(^{47}\)

Cartier explained the winter climate of New France in words similar to Lescarbot's. He believed that the St. Lawrence, due to its fresh water more than the salty ocean water, contributed to the cold. The uncultivated land and lack of settlers further strengthened the cold climate. Finally, the dense forests lacking people and warm fires caused cold. However, Cartier disagreed with the idea that dryness caused the snow and ice. He believed the opposite: there must be rain in order to have snow.\(^{48}\)

The rain and the forests did not provide satisfactory reasons for the cold to Fr. Bressani, a Jesuit priest. He had three reasons to explain the harsh Canadian winter. One reason was the higher altitude, which put New France closer to the "second regions of the air, of whose cold it partakes in a greater degree." Secondly, there were many waterfalls

\(^{46}\) JR, 58:221-23.

\(^{47}\) Champlain, Works, 377.

\(^{48}\) Stephens, Cartier, 124-25.
"which if placed together would form a fairly high mountain." Finally, the icy winds from the many mountains in Canada contributed to the cold. In addition to these three causes, he also thought it plausible that the icebergs from northern Canada which floated southward encouraged colder weather. He even testified that he had seen icebergs "as great as entire cities" in the Gulf of the St. Lawrence during the summer months.49

The early explorers and colonizers of New France sought long and hard to explain the unusually frigid winters, but they never successfully dispelled French fears that Canadian winters were inordinately cold. The many references to the severity of the winters in New France overwhelm those accounts of warm, pleasant winters. With stories of Canada's inexplicable merciless cold circulating throughout France, most French were not willing to leave their homes to settle in Canada. Not until accounts of adaptation by the French to the cold began to be sent back to France did winters in New France appear more habitable.

Paul Le Jeune discovered that the Indians told time by counting winters. He wrote that the winter had such an impact on the Indians that they did not ask how old one was but "How many winters hast thou passed?" The winter had no less an impact on the French settlers. Since the infamous winter of 1536, described by Jacques Cartier, few had settled there until 1604 when colonists began the slow process of conquering the deadly cold in Canada. The French came to bring salvation to the Indians, to make a profit in the beaver trade, and to prevent the English and the Spanish from controlling the New World. But no matter what their reasons for coming, these French colonists all had to learn to survive the harsh, cruel winter. The severity of the winter created the single most difficult obstacle for the French in Canada. If one stayed in New France, one had to learn to change and adapt to the environment. Thus, over time French tastes in architecture, food, clothing, and transportation evolved into Canadian customs that were suited to the stark winter climate.

After the reports of the winter of 1535-36 when Cartier's ships were locked in the ice from the middle of November until mid-April, no sane Frenchman wanted to
attempt to live through the Canadian winter. However, after further investigation of the countryside, the French were lucky to discover plenty of materials to build warm, secure shelters. A wide variety of wood and stone were available with which to build. From giant pines, maples, and oaks to slate, marble, and various colors of granite, the colonists could construct whatever they wanted.\textsuperscript{51} Although the acquisition of materials was not a problem, the unique demands of winter made construction difficult. Thatch roofs were widely used in France, but they rotted after six months under several feet of snow. And because of their brittle quality, slate roofs were not an ideal solution either, so wooden planks were used more frequently in roofing. Charlevoix observed that most of the houses in Quebec were covered in shingles. Peter Kalm noted that the sloping roofs of Canadian houses prevented heavy accumulation of snow.\textsuperscript{52} Although wooden houses were often better insulated than stone houses, they were also susceptible to fires. The danger of fire multiplied greatly in the towns. Charlevoix wrote that the seminary which he saw being built was actually the third attempt at construction. It had burned to the ground in 1703 and again in October 1705 "when


\textsuperscript{52}Charlevoix, \textit{Journal}, 107; Kalm, \textit{Travels}, 384-85.
it had almost been completed for the second time."53 The authorities were forced to regulate building practices in the cities because of the high incidence of fire. One such regulation concerned roofing materials. In 1727 Claude-Thomas Dupuy, French intendant from 1725 until 1728, ordered that wooden roofing materials, such as roofing with laths, could not be used in the towns, and all laths currently collected must be moved out of town, perhaps to be used by builders in the country. From that point forward urban roofs had to be tiled and separated by firewalls.54

Stone houses built in the French style were very popular in New France. Kalm commented that many of the Quebec houses were fabricated of stone. But like wooden houses, stone houses presented problems during the winter. Stone conducted the cold and humidity. The mortar often turned to ice and then crumbled. Water entered cracks in the stones and froze, thereby fracturing the walls and foundations. The cycle of freezing and thawing caused constant structural problems which often rendered foundations unstable in a single season. The French tried building wooden foundations, but these were insufficient protection from the cold damp of the ground. One solution was to raise the foundations of the house and cover them in the winter with straw and packed dirt. Eventually, to

54Douville and Casanova, Daily Life, 47.
provide greater warmth, stone houses were lined with wood and covered with plaster.\textsuperscript{55}

In addition to structural difficulties, heating houses presented problems for the colonists. Kalm observed that some colonists had stoves, but stone hearths and chimneys provided the main source of heating in New France dwellings. Sparks from the hearths frequently caused wooden homes to burn, and without proper insulation these stone houses were drafty and difficult to heat using only several chimneys. With large forests nearby, however, there was plenty of wood available for heating. Maple, oak, and ash were the favorite woods. Ruette d'Auteuil, a French attorney-general stationed in Canada from 1680 until 1707, disagreed with the idea that Canadians suffered in their houses. In December 1715, he wrote to the Duke of Orleans that it was wrong to believe that the French settlers were tormented unduly by the cold. Because of the vast supply of wood available, the colonists could warm their houses as much as they wanted to without fear of running out of fuel. This situation was in contrast to many areas in France where there was an insufficiency of wood for heat. Even though the winter was less biting in France, d'Auteuil reported that the French did not have the comfort of knowing that when they went out into the cold, they could come back to a roaring fire and

Unlike the well-heated homes that D'Auteuil described, the churches in New France were almost never heated before the mid-nineteenth century. The chilly conditions of the churches and convents was due to a spirit of asceticism and economy. However, such asceticism was not always endured without complaint. Marie de l'Incarnation described spartan living conditions that became hazardous during the winter. The convent was a three-story stone building. A fireplace at one end of the dormitory heated the nuns' cells. She complained that although the nuns used a great deal of wood the cold was so intense that "one is warm on one side and dying of cold on the other." Peter Kalm visited a convent in Quebec in 1749 and left a description of how wintry it was. Similar to Mère Marie's description, the stone building was three stories high, divided into long galleries with various rooms on each side. The nuns lived in cells on the third story. Kalm wrote that the nuns had to sleep in cold because they were allowed no fires. The only warmth generated within the convent was from a stove in the gallery which provided a minimum of warmth, since the nuns left

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57 Morisset, L'Architecture, 23.
their doors open.  

Despite religious austerity, gradually Canadian architecture developing out of French traditional architecture adapted to deal with the cruel winter conditions in New France. The need for adequate heating and lighting influenced the appearance of the facades of these structures. Canadian houses were not known for an absolutely symmetrical appearance, but were built to enable settlers to survive the winter. The roofs pitched sharply, tilting downwards with well-fortified rafters to protect the roof from collapsing under excessive snows. These steep roofs topped narrow houses better able to endure through the winter. For example, Michel Petier's house only measured twenty-six feet by sixteen feet. Le Seigneur de Chateauguay had a house that was forty-five feet by twenty-two feet, while storekeeper Jacques Le Ber had a house forty-two by twenty-two feet. Although these two houses were larger than the country home of Petier, both were still very narrow in comparison to their length.

These long narrow houses were most often found in Quebec. There were two types of houses built in New France: the Quebec-style house and the Montreal-style house. Both

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60 Douville and Casanova, Daily Life, 46; Seguin, La Civilisation, 313.
types were nordic, built to withstand the harsh cold.\textsuperscript{61} Quebec houses looked like long, low rectangles. The walls, divided by covered windows, were often white-washed or spread with ocher-colored mortar. According to Kalm, the walls of these stone houses were two feet thick. They had three or four chimneys, dormer windows, and shingled roofs. These features were similar to homes in the Normandy region of France.\textsuperscript{62} Kalm described the houses in Quebec much the same way: built of stone and then whitewashed. He observed that windows were "placed on the inner side of the walls for they have sometimes double windows in winter."\textsuperscript{63}

In contrast to houses in Quebec, buildings in Montreal were as wide as they were long. Similar to the isolated houses of faraway Bretagne, the houses of Montreal appeared more sequestered than the houses of Quebec. The windows were narrow and covered with heavy shutters to keep out the cold. Using dark heavy stones and thick white mortar, the houses had a fortress-like appearance. Large chimneys on each end of the house provided the main source of warmth.

Compared to French architecture, Indian dwellings looked insubstantial. The Jesuits were skeptical that the Indians' housing would provide protection from the weather.

\textsuperscript{61}Morisset, \textit{L'Architecture}, 26-27.


\textsuperscript{63}Kalm, \textit{Travels}, 409-10.
In 1616 Father Pierre Biard described the Indians in Acadia building a pyramid-shaped structure from poles embedded in the snow, tied together at the top, and then covered with animal skins or bark. A fire was built in the middle of the structure and the rest of the ground covered with fir branches. He commented that "no one will believe, they are very warm in there around that little fire, even in the greatest rigors of the winter." In 1634 Le Jeune echoed Biard's skepticism about Indian dwellings. He described the homes of the Montagnais, who dug out a square or circle into the snow several feet deep and formed walls with the remaining snow. Poles were used to give the walls more height and to form the roof, and then rolls of bark sewed together were thrown over the poles. Fir branches inside insulated the floor and the walls. Because of the temporary nature of Indian winter dwellings, it was not practical for the colonists to build their homes Indian style. Furthermore, many of the colonists looked upon the Indians with disdain and would never have lived in such a dwelling; they adapted their own French style of architecture instead.

Although the French did not follow Indian building techniques to protect themselves from the cold, the colonists did adapt some Indian methods of dress. In large

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\(^{64}\text{JR, 3:77.}\)

\(^{65}\text{JR, 3:77, 7:35-37.}\)
part, however, they continued to dress as they would have in France.\textsuperscript{66} By not adapting a warmer wardrobe, some of the French suffered considerably. In fact, many colonists died of the cold, and it was not uncommon to see epitaphs such as "Jean Lamontagne, dead, frozen in the snow while returning from Christmas mass." While warm winter clothing was essential, it was, unfortunately, expensive. It was not practical to raise sheep in colonial New France due to the lack of pastures and to the presence of carnivorous forest animals. Because there were few sheep in Canada, the colonists could not produce their own woolens and had to import most of their cloth from France. Marie de l'Incarnation wrote thankfully of a gift of "two lengths of strong serge and ready made shoes...[in order not to] suffer the rigours of the winter."\textsuperscript{67} Animal skins and furs provided some alternative for winter clothing.

Female colonists wore the same clothing as did women in France in the seventeenth and eighteenth centuries. In her wardrobe, a female colonist might have a "cloak, a skirt, nightgown, indoor dress, apron, jerkin, short cloak, and stockings."\textsuperscript{68} Women worked throughout the winter to make clothes for themselves and their family. Weaving, knitting, knitting, knitting,

\textsuperscript{66}Seguin, \textit{La Civilisation}, 459.


\textsuperscript{68}Seguin, \textit{La Civilisation}, 463.
and sewing kept housewives busy during the long winter months. A common saying was that "the forest consumes clothing". Working to clear the forests and hunting among the dense trees, Frenchmen often tore their clothes. Thus, it was difficult to keep the men who were out in the harsh cold properly clothed.

Despite some reluctance to give up French styles and follow native customs, the Indians taught the French settlers much about clothing suited to the more rigorous climate. Although some practices that the Indians used were not adapted, such as body painting, many others were. Kalm recounted that Canadian women followed the Indian fashion of wearing shorter, more practical skirts. He wrote that "every day but Sunday, they wear a little neat jacket, and a short petticoat which hardly reaches half the leg, and in this particular seem to imitate the Indian women." Marie de l'Incarnation also commented on the short skirts of the Indian women, writing that "their dresses come to the middle of their legs." Biard recounted how the Indians wrapped themselves in bed blankets. Le Jeune wrote in 1634 how both male and female Indians wore robes "under one arm and over the shoulder of the other, then crossed; and [in] these they wrap themselves up comfortably, though awkwardly against the

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69 Deffontaines, L'Homme et L'Hiver, 104.
French habitants adopted Indian moccasins for outdoor wear, although they had access to imported and locally-made shoes in the French style. The Indian style of footwear was much more practical. Moccasins were durable, warm, and easy to come by. They were more often worn by men and made at home rather than at the cordwainers. Le Jeune described these shoes as "large and capacious, especially in winter." In the extra room, the Indians often wrapped their feet in a rabbit skin before putting on the shoe and stuffed moose hair between the skin and the shoe. When the cold was very intense, they would put on two pairs of shoes, one pair on top of the other pair. In order to keep all of this insulation on one's feet, they tied a string around the entire shoe. Because this worked effectively, both the Indians and the French used this type of shoe during the winter. Marie de l'Incarnation described Indian shoes made from moose hide tied together and attached to the feet with a leather thong. She stated that the "French never wear any others in winter, since one cannot go out except with snowshoes under the feet - to walk on the snow one cannot use French shoes." 

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71 Seguin, La Civilisation, 470-72; JR, 7:17.

72 Marie de l'Incarnation, Word From New France, 131.
After suffering through immobility and near-starvation, the colonists began to learn from the Indians, who used snowshoes to help them maneuver during the winter. These snowshoes or raquettes (as the French called them) were large and simply strapped onto the moccasins. The design for the snowshoes was based upon the feet of the caribou and reindeer who moved easily over the snow despite their weight. The base of the snowshoe was made of pliable birch or larch wood, which was woven together using leather thongs. Le Jeune called them "great flat skates." In order to wear raquettes one needed the proper shoes: Indian moccasins. Made of leather without a separate sole, they were supposed to look like a lynx's paw in order to simulate that animal's easy progress across the snow. Using the skins of the bear, caribou, and seal, moccasins were made as airtight as possible to protect the feet from frost. Seal skin was best for this purpose. The Indians covered the leather with fish oil to make the moccasins impervious to water. Sometimes when the snow was hard enough, one could walk across the snow without the snowshoes, just wearing the moccasins. Generally, this was in the early morning before the sun rose. It was necessary to bring the raquettes along, because by mid-morning the sun would have

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73 Deffontaines, L'Homme et L'Hiver, 138-139. Accounts of the French using snowshoes are numerous. See also Denys, Natural History 428; Le Clercq New Relation of Gaspesia, 170, 212; Du Creux History of Canada vol. 1, 80; Champlain, Works, 142.
made the snow too soft to walk across without sinking.\textsuperscript{74} Anyone wanting to move through the snow -- men, women, children, Indians, and Canadians -- wore raquettes. Sagard called them an "excellent invention, for wearing them you do not sink into the snow, and also you cover a good distance in a short time." Without snowshoes, hunters would not have had the mobility to chase big game, and without meat many people would have died of hunger during the merciless winters.\textsuperscript{75}

Despite frigid temperatures the land provided the colonizers of New France the materials to build, to make clothes, and to eat. In the beginning, however, problems occurred in preparing food for winter. Many of Cartier's men died of scurvy because they did not have adequate vitamins and minerals. Refusing to eat the frozen fish of the Indians, and living off ship's biscuits and dried peas on their ships, the sailors did not have a chance.\textsuperscript{76} In 1605 thirty-five of Champlain's men also died of scurvy when they ate only salted meat and dried vegetables. Quantity was just as important as the quality of the Canadians' diet. Gradually the Canadians realized that "If one does not want

\textsuperscript{74}Deffontaines, \textit{L'Homme et L'Hiver}, 140-141.

\textsuperscript{75}JR, 5:127; Sagard, \textit{Long Journey}, 83-84.

to be cold, one must eat amply." This plan was difficult to follow because winter lasted at least six months, curtailing their ability to plant or hunt.

Although the French soon mastered fishing and hunting, in the beginning they still lacked fundamental supplies such as bread, milk, and salt. Even when New France was well established, the colonists still depended heavily upon trade from Europe. Marie de l'Incarnation complained that the religious houses were dependent upon the ships from France for "the greater part of our food." "It is not that the

77 Marcel Trudel, Histoire de la Nouvelle France: Le Comptoir 1604-1627 (Montréal: 1966), 38; Deffontaines, L'Hommes et L'Hiver, 111.

78 There are no exact temperatures for winter before the nineteenth century. The following calculations are based upon information in the Historical Atlas of Canada and The Weather Handbook. The mean temperature for January was shown as -12 degrees Celsius in the Historical Atlas of Canada for the St. Lawrence River valley in the seventeenth century. The mean temperature for July was shown as 15 degrees Celsius. An average annual temperature of 1.5 degrees Celsius or 34.7 degrees Fahrenheit was calculated from the above two extreme average monthly temperatures. A linear relationship was developed using statistical analysis and data gathered from The Weather Handbook which consists of average annual temperatures, days above 32 degrees celsius and number of months between frosts for 11 U.S. cities ranging from Georgia to Minnesota. The results of the analysis produced the following two equations:

Days Above 32 degrees F = -36.062 + 5.557 (AVG Annual Temp)
Months Between Frosts = -1.746 + 0.127 (AVG Annual Temp)

Output of the above two equations for the St. Lawrence River Valley using an estimated average annual temperature of 34.7 degrees Fahrenheit is shown below.

Days Above 32 degrees Fahrenheit = 157
Months between Frosts = 2.7
people do not work hard and that food is not produced," she explained, "but the country does not yet provide what it needs to maintain itself." Fruits, spices, and sugars were imported heavily, as was alcohol, such as rum, Spanish wines, and Madeira.79

Despite some scarcity in the beginning and later a lack of luxuries such as spirits and spices, a great deal of food was available by hunting and planting what the Indians did. Meat was a staple of the early Canadian diet, but it was necessary to prepare it well for the winter months. Moreover, hunting was also easier in the snow. Jean-Baptiste d’Aleyrac, an army officer in New France in 1755, compared the winter arrangements of the French colonists to the "behavior of ants."

They kill everything they require for the period from the end of November until the end of April, when the snow has gone and the thaw has come. They stock up with meat as if they would eat it at a single meal, and they put it in a storehouse where it freezes and is thus preserved. When they want to eat it they thaw it over a stove, and then prepare it as if it came straight from the butcher.80

Thus, the Canadians had recognized the necessity of preparing food for the winter, in contrast to the French at home who did not face the same frigid conditions.

For good hunting the weather had to be just right. In fact, this was one case where the cold often proved a


80Douville and Casanova, Daily Life, 57.
blessing. Fr. Biard recorded in 1616 how the Indians often starved if there was too much rain one year and no frost. Under these conditions, they could not hunt beaver or deer. Problems also occurred when snow was soft and wet because the hunting dogs would sink and the Indians could not travel fast enough on their snowshoes. Le Jeune reported during seasons of light snow that the hunters brought back just enough food "that they kept us from dying rather than [helping] us to live." 81

Not only was the winter weather advantageous for hunting, but it also helped to preserve the meat, a major component of the Canadians' diet during the cold winters. After stocking up in the fall, the winter stores could be destroyed by a winter thaw. Thus, Charlevoix commented that "in spite of the excessive severity of the cold, people are reduced to the necessity of wishing for its continuance." 82

Whereas the French settlers had been used to eating lamb and beef in France, in New France there was a wide variety of animals from which to choose. In New France settlers now ate moose, caribou, porcupine and beaver. Poultry and fish such as "duck, pigeon, partridges, salmon, sturgeon, shad and eels" were also plentiful. Diérèville complained that one did not eat the hares in New France because during the winter these animals had only fir trees

81JR, 3:79, 7:47.
to eat. Thus, they had a distinctive flavor that could not be disguised no matter how the meat was seasoned.\textsuperscript{83} Eels were popular "either smoked or salted," they were considered "a fashionable dish."\textsuperscript{84} Eels were an important source of food in the early months of winter until the snows deepened enough to hunt big game such as moose.\textsuperscript{85} Later in the winter French Catholics favored eels as a substitute for meat during Lent. As Charlevoix commented, "were it not for cod-fish and eels there would hardly be any such thing as keeping Lent."\textsuperscript{86} One dish that evolved in Canada was the 'pièce tortière.' In France this was a pie made with pigeon and other birds; the New France version was made with eel and bacon.\textsuperscript{87}

Farming supplemented food available from hunting. After partially clearing the land, the colonists began to plant their own food and were able to harvest such crops as "corn, oats, barley, peas, lentils, beans, and asparagus." Melons and cucumbers were considered delicacies. According to Marie de l'Incarnation, "There is also a certain species that is called watermelon that is shaped like a squash and eaten like a melon...they are considered excellent and are

\textsuperscript{83}Dièrèville, \textit{Voyage to Port Royal}, 107.

\textsuperscript{84}Douville and Casanova, \textit{Daily Life}, 54.


\textsuperscript{86}Charlevoix, \textit{Journal}, vol. 1, 256.

\textsuperscript{87}Douville and Casanova, \textit{Daily Life}, 56.
not noxious." Otherwise, she noted that the vegetables and herbs available in New France were similar to those at home. One vegetable that the French refused to consume was the potato, which they disparagingly called "the root." Only in dire emergencies would they eat it. Marie Duplessis de Saint-Hélène, the mother superior of the Hôtel Dieu in Quebec, wrote of the severe famine that had struck Canada and under which everyone was still suffering. She portrayed the colonists in such dire straits that they were eating "'the buds of trees, potatoes and other foods never intended to be used as food for human beings.'" Even when not faced with eating the dreaded potato, Charlevoix was not impressed with the variety of vegetables kept through the winter, and the manner of their storage. "Nor indeed is much more account to be made of garden stuff, which is kept as well as may be in the cellars" he complained, "but loses almost all its virtue after it has been there for some months."88

A supplement to what Charlevoix thought of as bland fare was maize. The Indians taught the French to grow maize, which became a staple in the Canadian diet. Maize was eaten in a variety of ways. It could be roasted, blended with meat, or made into pancakes that remained edible longer than wheat or rye pancakes. Moreover, it could be made into sagamite, a soup or mush made from corn.

flour with dried fish and peas. It was not used to make bread, however. Wheaten bread was an important staple in the French Canadian diet. In 1636 a Jesuit priest wrote how "a workman will eat two loaves a week, each six or seven pounds in weight." 89 The sieur de Diérèville wrote that wheat had to be planted in the spring and then harvested during the summer in contrast to France where wheat was planted in October and then harvested the next year. Because of the relentlessness of the Canadian winter, the seeds would not survive. Kalm also described how the early colonists discovered that it was impossible to plant during the Canadian winter because of the severe cold. The short summer was also a problem because there was not enough time for the plants to ripen. Until the colonists began to import the seed for summer corn from northern Europe, they looked "upon Canada as little better than an useless country, where nobody could live." 90

Not only did the colonists have difficulty acquiring food, they also had trouble finding water. Getting water was a problem if one did not have a well or lived far from a river. For example, Champlain and his men were forced to drink melted snow to survive their first winter in New France. Fr. Le Jeune wrote how his little community had to

get their water from the river and keep it in barrels. Unless they broke the top layer of ice each day, the whole barrel would freeze solid within two days.\textsuperscript{91}

Although snow and ice provided useful refrigeration, they made moving around outdoors arduous. As roads were built in New France, their upkeep during the winter became very important. Roads covered in snow could easily mislead travellers into getting lost in the winter whiteness. In 1727 Intendant Claude-Thomas Dupuy declared that colonists living near the roads approaching Quebec, Montreal, and Trois Rivières had to designate where the roads were with tall poles. Failure to do this resulted in a ten livres fine. Skating along the St. Lawrence between Montreal and Quebec was another winter travel option. When the river had frozen solid, people used skating messengers to send news from one place to another. Even the governor at Quebec used skaters to send messages to Montreal and Trois Rivières. With preparation, it was possible to skate 125 miles with few stops, if the ice was even and the wind behind the skater. One skater was sent from Montreal to Quebec with a critical message. He made it after skating 180 miles in only 18 hours. Unfortunately, he died after delivering the message, "some said of exhaustion, others that he had dined too well en route."\textsuperscript{92}

\textsuperscript{91}Trudel, \textit{Histoire}, 38; \textit{JR}, 5:147.

\textsuperscript{92}Douville and Casanova, \textit{Daily Life}, 186-89.
Sleds also provided a safe, easy method of winter travelling. Despite their later popularity, they were rarely pulled by horses in the early years. Dogs were more often used to pull the sleds. Emulating the Esquimaux, the Indians made toboggans that they could pull themselves or that dogs could pull. These toboggans were easy to make by using a long narrow board curved in the front. The colonists made their sleds based upon the Indians' model using mostly oak, but also maple and elm. Because the roads were generally rough and the loads being carried were often heavy, the construction of the sled needed to be sturdy and dependable. From early in the seventeenth century, the colonists used sleds, often pulled by oxen, to haul heavy loads of wood. Peter Kalm recorded that dogs most often pulled the sleds. He also mentioned that the Canadian ladies braved the cold and used sleds to visit friends during the winter. These toboggans were pulled by two dogs, or one medium-sized dog if the roads were in good condition.

Although in the beginning few of the French knew how to cope with the surprisingly frigid winter conditions that they found, gradually they were able to adapt to the cold. This process of adaptation was slow, and many of the

93 Deffontaines, L'Homme et L'Hiver, 142-143.
94 Seguin, La Civilisation, 587-88.
95 Kalm, Travels, 448.
Canadians died in the course of learning about the winter. Using a combination of their own traditions and those of the Indians, the colonists slowly learned to conquer the cold. This slow evolution brought about a culture that was not entirely French nor Indian, but Canadian.
Conclusion

The Jesuits persevered in their attempt to bring salvation to the Indians despite the cold. Hunters prayed for the snow to continue. French colonists worked to conquer the cold. Gradually, however, everyone worked to adapt to the harsh Canadian winters. The season was as a pervasive force from Jacques Cartier's first winter in 1534 as it was when Peter Kalm visited New France in the eighteenth century. The cold proved to be an all-powerful intruder in the lives of Canadians. The word cold does not convey the intensity of winter's force. Not only was Canada frozen solid during the winter, winter often lasted for half the year. Winter was overpowering and, as Charlevoix described it, "shocking." The writings left behind by the French colonists suggest that this stark season took on a personality of its own. Thus, no diary entry or letter could be written during the winter without mentioning the extreme weather, or surprise at more moderate temperatures.

Thus, the cold became a power of its own in the lives of the French settlers. For example, winter shaped early Canadian literature. Repeatedly, in travellers' accounts and diaries there are mentions of the rigors of winter and often detailed descriptions of the cold. Papers of religious orders like those of the Jesuits or the Ursulines are full of winter accounts. Even French literature was inspired by the winter, as seen in Rabelais's Quart Livre.
The cold also affected colonization. Many people did not see New France as a land of opportunity because of the widespread reports of severe cold. Some disparity in descriptions in temperature may in part be explained by a desire to combat those reports and so encourage emigration to New France. The cold also patterned French material culture into Canadian culture. French ways of eating, building, and travelling melded with Indian ways. The weather shaped the life and development of New France. One cannot truly understand Canadian history under French rule without learning of winter's intensity and how the French colonists learned to live with its shocking cold.
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