Across This Land

A Regional Geography of the United States and Canada

JOHN C. HUDSON

SECOND EDITION

Across This Land

Creating the North American Landscape

George F. Thompson, Series Founder and Director

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Second Edition

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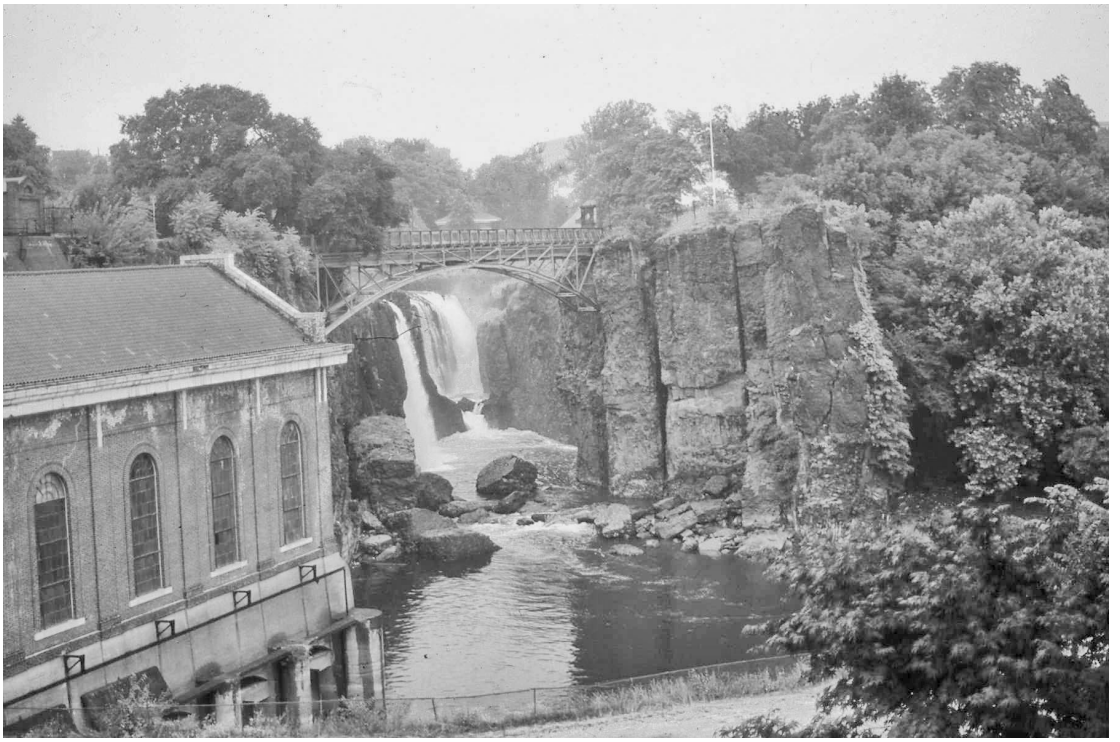

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CONTENTS

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MAPS

PREFACE

This book is the long-overdue revised edition of a regional geography of the United States and Canada developed over almost a half a century teaching the subject at Northwestern University. When I came to the university in 1971, I spent some time looking through the geography catalog to find a course that might be fun to teach. Although I had never taught regional geography, I was intrigued by Geography C13: North America. The course had no title or description apart from the name of the continent it was supposed to cover. With plenty of room to experiment, I offered the course as a seminar, then introduced some lectures the next year. Within a few more years it had become a lecture course and was moved to a larger classroom. I began illustrating the lectures with slides and then moved to an auditorium. I have taught "North America" every spring quarter since 1973.

Regional geography begins with the premise that it is possible to gain the sense of a place by reading about it. It is more a teaching field than a research subject, and most regional geography books—including this one—have come from efforts to teach students. It is also a subject that tends to be long on facts. Although the emphasis on factual information sometimes invites comparisons with a trivia contest, regional geography is designed to be precisely the opposite of geographical trivia. Unconnected facts are simply that and lend themselves to little other than memorization. The purpose of regional geography is to offer a framework for those facts and an interpretation of their relevance, so that they may take on significance for the reader.

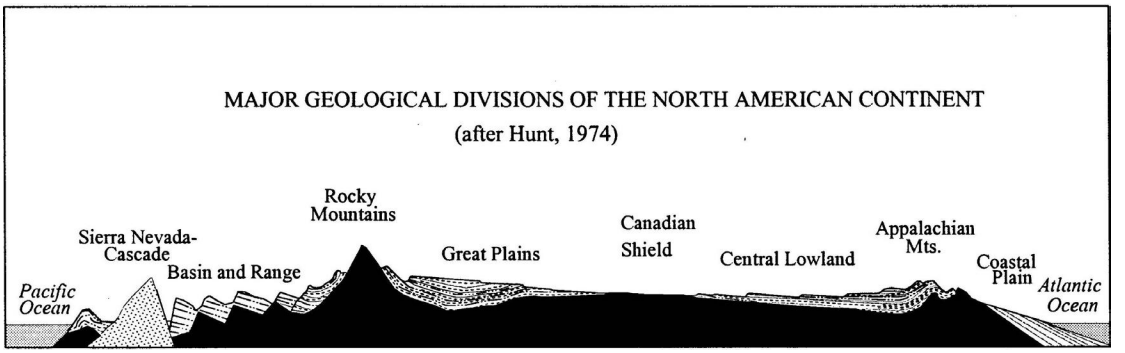
It was long believed that the relevant facts about a place were given and that any well-trained geographer would know how to go about acquiring them. The facts were commonly cataloged in a sequence, beginning with bedrock geology and proceeding through climate, soils, and vegetation. This was followed by a description of all of the forms of economic activity, beginning with the primary ones (agriculture, forestry, mining, and fishing) and then moving to the industries that fashioned those products into manufactured goods (the secondary activities). The catalog continued through the service industries, then turned to demographics and urbanization and typically culminated in a discussion of a region's problems.

The strength of such an approach is that it offers a framework in which the topics can be organized for any region. Its most obvious weakness is that it is difficult to weave a story line through such a framework that will make the facts come alive. Some authors take a thematic approach, surveying a whole continent, topic by topic, but the essence of regional geography is lost in the process. Another strategy is to adopt a historical perspective, but this makes it necessary to repeat the entire catalog for every time period.

In recent years a more vexing problem has emerged regarding the facts of geography. Increased separation between the physical and human dimensions of geographical research and the continued evolution of new methodologies in the social sciences and humanities have rendered null and void those comfortable, old agreements about the relevant facts. The eclipse of regional geography has been one casualty of this evolution, even as the public decries its loss in calls for reinstating geography in the school curriculum. My own biases about the best way to write regional geography include a belief that books on the subject have suffered not from being too place-specific but rather from being insufficiently so.

If the geographical approach to assimilating a worldview is to be successful, then I believe great care must be given to organizing the myriad details constituting the end product. Regions are admirably suited to this pedagogical task because they are capable of division and subdivision down to almost any scale. All of the chapters in *Across This Land* are organized around regions. The chapters aggregate into larger regions, and they also are subdivided into smaller ones as indicated by the subheadings. The sequence in most cases follows a geographical order that is adopted in order to maximize the value of a regional approach.

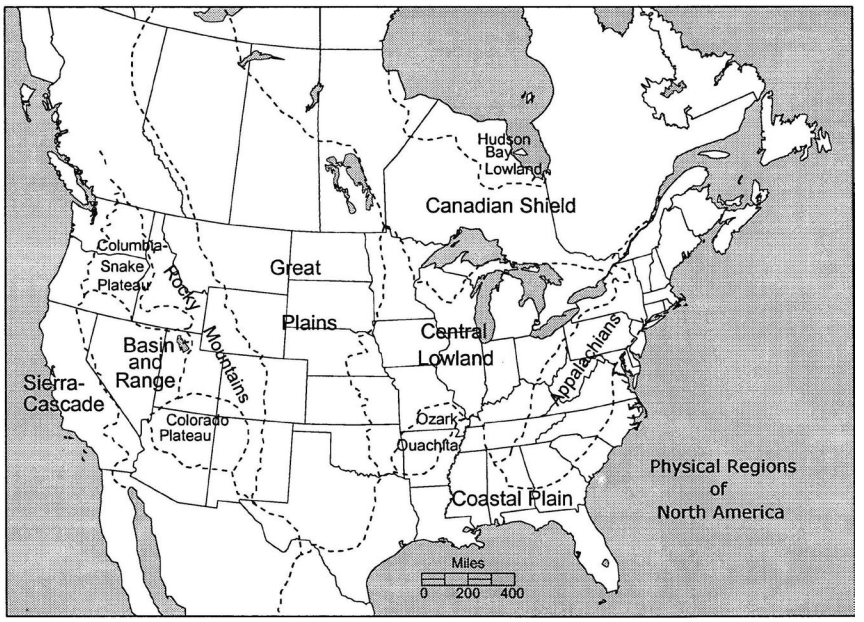
Regionalizations of North America generally begin with geology. There are eight major subdivisions that form a rough symmetry around the core of ancient rocks, the Canadian Shield, which is exposed at the surface in the center of the



Map P.1.

continent (map P.1). Surrounding this continental core, or craton, is a stable platform, undeformed by mountain-building forces, known as the Central Lowland on the east and the Great Plains on the west. The stable platform, in turn, is fringed by two mountainous belts, the Appalachians on the east and the Rocky Mountains on the west. The Coastal Plain is a margin of more recent sedimentary rocks, derived from both land and sea, bordering the Appalachians on the east. The two major divisions of the Far West are the Basin and Range section of low, widely separated mountain ranges west of the Rockies, and the Sierra Nevada–Cascade region of higher mountains that forms the Pacific border.

Canada and the United States differ in terms of the relative areas covered by these eight regions (map P.2). The Shield forms much of Canada's interior but only a small part of that of the United States. The Central Lowland, the Coastal Plain, and the Basin and Range lie primarily within the United Sates. Numerous further subdivisions, based on geologic structures, surface materials, or topography, are possible as well. The Hudson Bay Lowland, the Colorado Plateau, and the Ozark–Ouachita regions are examples of smaller subdivisions; each has a unique character. Because the record of human occupancy is nearly everywhere influenced by the physical environment, cultural regions—especially those based on a long presence by a given cultural group—tend to follow natural boundaries to some extent, although they are by no means determined by them.



Map P.2.

Political boundaries constitute a second fundamental regionalization. Politics is considered essential in the writing of history, yet it rarely plays a central role in regional geographies. Geographers emphasize natural regions but rarely focus on political regions (countries, states, provinces) as primary divisions of territory. Politics plays a larger role in this volume because I believe it is not the mere presence of a given physical environment, various natural resources, or certain cultural groups that define regional character; rather, it is actions undertaken for a purpose, by groups and individuals, that have shaped the distinct landscapes that each generation leaves in modified form to the next.

What is the measure of significance in regional geography? The answer can only be suggestive. Area or territory is one measure, but it is not an absolute one; if it was, much of this book would focus on the uninhabited North, which is the largest subdivision of the continent in terms of area. Neither is population the sole measure of significance: that would mean that most of this book would be about large cities and that the North would scarcely be mentioned. Those who expect scenic or picturesque areas to be emphasized at the expense of the less attractive will be disappointed, although I hope readers will find that their interest in all places increases as a result of learning more about them.

This book covers the geography of the United States and Canada—separately in places, jointly in others—but it barely mentions Mexico, North America's third major country. The restriction is based both on limitations of the author's experience and on a traditional agreement among geographers about the division of the continent. The United States and Canada formerly were grouped together as Anglo-America. It takes nothing away from the important contribution Anglos have made to both countries to admit that such a term is culturally biased in the extreme and to note with approval that it has fallen into almost total disuse. Mexico belonged in the other major realm, Latin America, a term that, for better or worse, remains in common usage. Mexico probably ought to be considered jointly with the United States and Canada, but I must respectfully yield to others, who know Mexico far better than I do, to take that step.

References are grouped at the end of each chapter for the purpose of convenient access. The individual chapter reference lists are by no means exhaustive, and the titles selected include mainly books (especially classic works on their respective subjects) rather than articles or book chapters. A very useful general guide to the literature, which has the virtue of regional organization itself, is the bibliography by Conzen, Rumney, and Wynn (1993). More general works, treating the entire continent or entire countries, are listed at the end of this preface. Not listed, but of great value as a source of information in geographic research, is Google Earth, which all readers should have at their disposal.

Of the many people who helped shape the content of the book, special mention must be made of the late Professor R. Barry Farrell. A Canadian and a political scientist, Barry directed a successful Canadian Studies program at Northwestern and urged me to apply for a travel–study grant from the Canadian Embassy in Washington, DC. Two such grants supported study in parts of Canada that would have been difficult for me to reach otherwise. I am grateful to the Canadian government for its financial assistance and to Barry Farrell for rekindling my interest in Canada.

I owe a great debt to a long list of geographers whose regional geographic studies form much of the basis for this book. I have acknowledged that debt in part through citing their works at the end of individual chapters. Two geographers have influenced my thinking to such an extent that chapter references alone will not suffice. I am greatly indebted to John Fraser Hart, who encouraged me to go forward on this project, contributed substance to nearly every chapter, and lent his editorial skills to the manuscript; one could not possibly ask for more from a friend and colleague. I am also greatly indebted to D. W. Meinig, whose insights into the development of American regions are without parallel. As I wrote my way back and forth "across this land," I came to appreciate Don Meinig's innovative geographical thinking ever more deeply. I recommend Professor Meinig's books to all who would delve into the study of North American geography.

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PART I

Atlantic Canada and Quebec

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CHAPTER

1

Newfoundland and Labrador

Newfoundland is the site of the earliest European habitation that has thus far been discovered in North America. During the 1960s, archaeologists unearthed the remains of an outpost built by seafaring Norse people about AD 1000 at L'Anse-aux-Meadows, on Belle Isle Strait at the northern tip of Newfoundland's Northern Peninsula (map 1.1). The site is thought to have been the Vinland of Leif Eirikksson (c. 970–c. 1020), as described in the *Greenlander's Saga*. Trees cut at L'Anse-aux-Meadows provided timber that was shipped to the Greenland settlements. Discovery of the remains of an iron furnace, similar to early workings in Norway and which used bog iron to produce nails for shipbuilding, has added further evidence of the Norse presence. Their foothold in North America was weak and lasted for perhaps only one hundred years, although Norse pastoral settlements survived in southern Greenland until AD 1500. The climate had begun to grow colder by that time (because of the onset of the "Little Ice Age"), and marginal areas like Greenland were abandoned. A once-advancing zone of Norse settlement in the cold lands bordering the North Atlantic turned to one of retreat.

Norse people had looked west and discovered Iceland, Greenland, and the coast of the North American continent—all by accident. Other Europeans, seeking a route to the East, would make more than a dozen voyages in the 16th and early 17th centuries searching for an assumed Northwest Passage around this continent. The modern European discoverer of North America, John Cabot (Giovanni Caboto, c. 1450–c. 1500), therefore was something of a latecomer. His voyage of exploration from Bristol, England, in 1497 is associated more importantly

Map 1.1.

with the beginnings of cod fishing, an industry that would dominate Newfoundland's economy for nearly five hundred years. Cabot's party reported that the waters swarmed with fish, especially the fat, succulent Atlantic cod, by far the most prized of species. Cod was in great demand at European ports, where it often brought a higher price than beef. Oil pressed from cod livers came into use as a vitamin-rich tonic.

French, Portuguese, and Basque fishermen were the first to spread their activities to the waters off Newfoundland. They established scattered seasonal

habitations along the island's long, rockbound coastline, a presence that survives in place names such as Burgeo (Portuguese); Bonavista, Catalina, and Trepassey (French); and Burin and Placentia (Basque). By the 1570s the English also were taking part in the fishery, especially along the Avalon Peninsula. Closer to Europe than any other part of North America, Newfoundland was the temporary home for many who sought a more permanent life elsewhere and for an assortment of others, including a number of notorious pirates who took shelter in its many bays. Newfoundland's history through the early 18th century is filled with struggles to maintain authority by the various nations or groups involved.

Newfoundland's coast, like its interior, is rocky and occasionally appears mountainous (fig. 1.1). In late Cambrian times (more than 650 million years ago), a volcanic island arc appeared off the east coast of what became the North American continent. These islands, as well as others whose locations correspond to present-day Western Europe and Africa, eventually were impressed onto the continental margin as the predecessor Atlantic Ocean closed due to convergent movement on the underlying plates. Eastern Newfoundland, including the Avalon Peninsula, thus became one of the first portions of the Appalachian Mountains to be formed.

As the present Atlantic Ocean opened, the mountains were simultaneously worn down and eventually they became the low hills and peninsulas characteristic of eastern North America's margins. Newfoundland's indented coastline offered numerous snug harbors and sheltered coves, where eventually more than one thousand outports ("out" from St. John's) were built (fig. 1.2). Outports are the typical Newfoundland coastal communities, where life traditionally has centered on fishing.

Newfoundland settlement

For most of the 17th and 18th centuries, Newfoundland's cod fishery operated as a seasonal overseas business that was based on numerous western European ports. Fishermen from the West Country of England predominated after Great Britain obtained sovereignty over Newfoundland by the Treaty of Utrecht in 1713. France retained some fishing rights in Newfoundland, and even today the islands of St. Pierre and Miquelon, a few miles off Newfoundland's coast, remain a Collectivitée Territoriale of France. In the 18th century, fishing vessels came to Newfoundland by the hundreds each year. The summer's catch was lightly salted, dried on outdoor racks known as *flakes*, and taken to Europe by the returning fishermen. Spain and Portugal were the largest consumers of Newfoundland salt cod.

Fig. 1.1. John Cabot's landfall in North America probably took place on Newfoundland's Bonavista Peninsula, a jutting rock platform tilted by the force of continental collision.

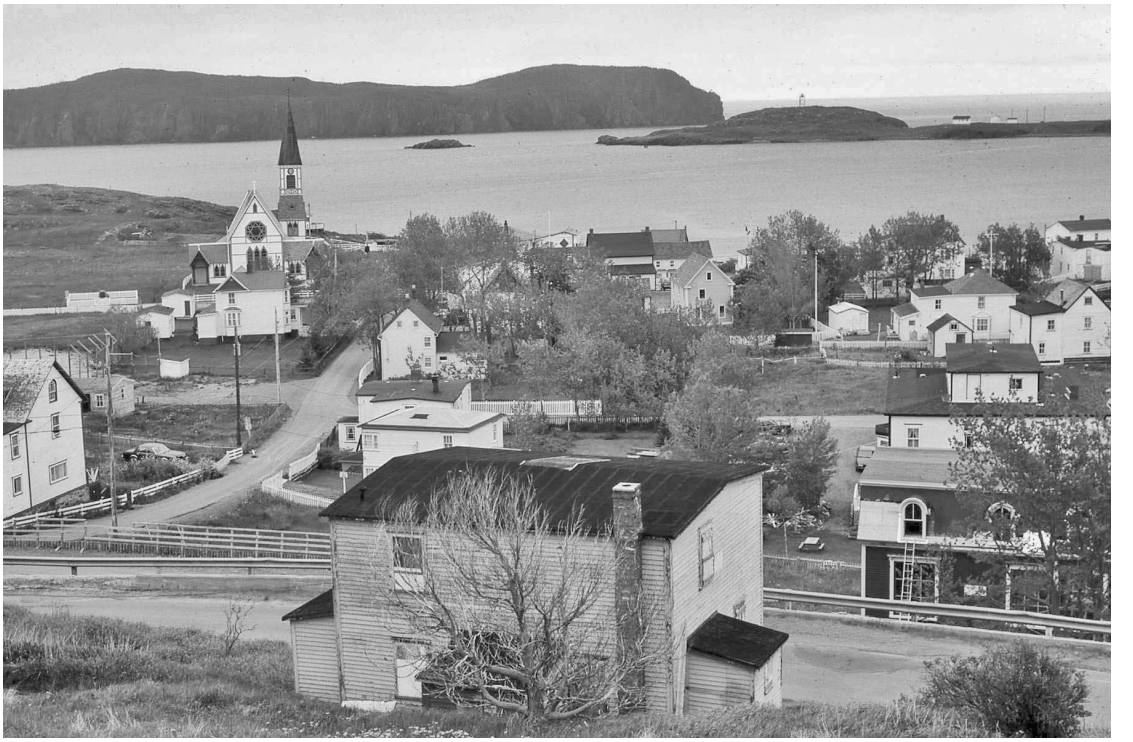


Fig. 1.2. Trinity, one of Newfoundland's many outports, was an important center of fishing activity and trading by 1800. The flattish-roof building in the foreground is one version of the Newfoundland folk house.

In 1750 Newfoundland had only about two thousand permanent residents, yet many times that number of people participated in the seasonal fishery. By 1800, however, seasonal migrants were outnumbered by permanent residents, who settled in St. John's and in the outports. A dozen counties in southwestern England and southeastern Ireland were the most important sources of migration to Newfoundland. Descendants of these migrants form the greatest share of the island's population today. The Avalon Peninsula, including St. John's, was, and remains, dominantly Irish Catholic, whereas the outport communities more distant from St. John's were most often settled from England and are dominantly Protestant.

St. John's became Newfoundland's largest city, the seat of its government, and the focus of most of its economic activity (fig. 1.3). The outports were more often connected to one another and to St. John's by sea than by land. Mercantile houses once established as monopolies in isolated locations around Newfoundland's coast eventually moved to the principal city. The trading companies that handled Newfoundland's fish exports and goods imports were attracted to the busy wharves lining St. John's sheltered harbor.

By the late 19th century, the St. John's merchants developed a credit system: They employed fishermen to catch the fish that the merchants then sold in foreign markets. The merchants did not pay wages but rather outfitted each fisherman with provisions and gear necessary for a year's operation and later settled the balance according to the quantity and quality of salt cod that was brought in.

Fig. 1.3.
Gower Street in St. John's. The city's older residential neighborhoods climb the hills bordering the inner harbor.

The outports where the fishing families lived were so chronically short of cash that inhabitants supplemented their subsistence by raising food crops on little patches of arable land and by raising animals for their own consumption. The Newfoundland fisherman was thus also a farmer and a jack-of-all-trades.

Political change

Great Britain granted responsible government to Newfoundland in 1855. Although Newfoundland was part of British North America, it did not join Canada when the Canadian Confederation was proclaimed in 1867. The island's economy was more closely tied to the North Atlantic trade—especially with Great Britain and the United States—than it was to Canada. Newfoundland sought to turn its independent status to advantage by brokering its own relationship with the United States but was rebuffed by both the British and Canadian governments. Not really Canadian, not British, and certainly not American, Newfoundland remained peripheral to all three of the larger economies and nations with which it conducted most of its business.

Newfoundland's economic problems worsened in the 1920s as it slowly sank under the foreign debt that had accumulated. In the late 19th century, the Newfoundland government borrowed money from foreign banks to build an expensive but poorly constructed railroad that wound 567 miles through the better forested lands between St. John's and Channel-Port-aux-Basques on the Gulf of St. Lawrence. The railroad was the only land route across Newfoundland, and it opened up the interior to forest-products industries.

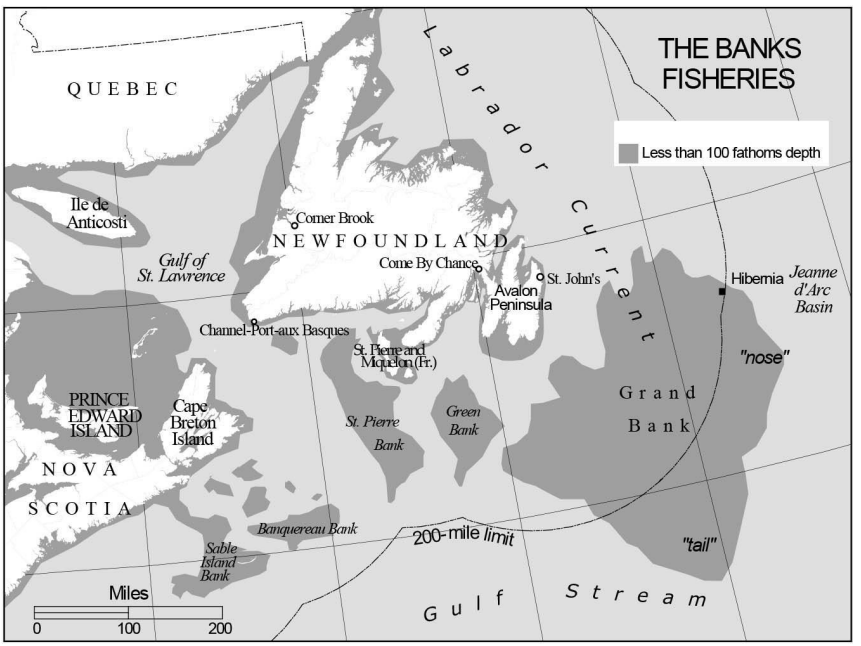
When the 1930s depression came, Newfoundland's economy collapsed. In 1933 it took the drastic step of forfeiting its responsible government and accepted the direct authority of Great Britain once again. A Commission of Government was imposed, which, although it included elected Newfoundlanders, took its orders from London. Life under the Commission was made easier by the economic recovery stimulated by military activity in Newfoundland during World War II. With its forward position in the Atlantic, Newfoundland was a strategic location for Canadian and American air and naval bases. The international airport at Gander became a refueling point for transatlantic flights, and it continued in this role for the remainder of the piston-aircraft era. Newfoundlanders took construction jobs in the naval bases and airfields during World War II and came to know Canadians and Americans better than they ever had before.

In 1949 Newfoundland cast off its Commission of Government and finally voted to join Canada. Victory by the proconfederation forces, led by Joseph Smallwood (1900–1991) who served as Newfoundland's premier into the 1970s, was

accomplished in part on the promise that Canadian social programs would benefit Newfoundlanders. "Never again," mothers were told, "would there be a hungry child in Newfoundland." Fishermen voted for confederation believing that better fishery management would come under the Canadian government. That the promise of welfare support could win so many votes suggests the desperate conditions of life that so many Newfoundlanders knew. Even at present, the operation of the Newfoundland fishery revolves largely around the issues of 1949, those of federal versus provincial authority and of Canada's role in providing additional economic support for tens of thousands of Newfoundlanders.

The North Atlantic fishery

Canada's Atlantic fishery depends on the dispersal of many species of ocean fish from concentrated areas, known as banks, in the relatively shallow waters of the continental shelf off Labrador, Newfoundland, and Nova Scotia (map 1.2). The banks, which are submerged in only six hundred feet of water, long supported abundant phytoplankton life. Of the dozen banks within two hundred miles of Canada's coastline, the Grand Bank off Newfoundland is the largest and traditionally the most important spawning ground of cod. Still shallower, inshore waters of the Maritime Provinces and Newfoundland yield lobster, mussels, snow



Map 1.2.

crab, and shrimp. Capelin and lumpfish are caught primarily for their roe, which commands a high price in Japanese markets. Turbot, redfish (marketed as ocean perch), flounder, and herring have added to the large catches made here, one of the world's most productive fisheries. About two-thirds of Newfoundland's fish products are consumed in the United States.

The economics of fishing and the lives of those who make their living from it have been anything but stable in the past half century. Once Newfoundland joined Canada, the provincial government embarked on a series of development initiatives to strengthen the island's economy. Most Newfoundland fisherman, then and now, operate small vessels as part of the seasonal inshore fishery, defined as the zone within twelve miles of shore (fig. 1.4). The fish they catch have already migrated away from the spawning grounds on the Grand Bank. Inshore fishing is labor intensive and the output per fisherman is comparatively small. It is a business ideally suited to the Newfoundland outports, providing there are stocks of fish to catch.

Believing that a small population scattered over many outports was an inefficient basis upon which to modernize the fishery, Newfoundland's government began to induce migration out of some isolated outports during the 1950s. The

Fig. 1.4. Trap skiffs belonging to Newfoundland fishermen. The 1992 moratorium on cod fishing idled many Newfoundlanders and has created new economic problems.

role of outports that produced only salted, dried cod declined as the demand for frozen fish fillets increased. Residents of those outports planned for extinction were assisted financially if they relocated to communities that were to receive frozen-fish processing plants. Growing communities, it was argued, could provide services unavailable in the outports. Newfoundlanders would get jobs in the fish plants and on large fishing trawlers that would supply enough fish to keep the plants in operation.

Fishing might have become more productive with the introduction of larger vessels, but the size of the catch dropped each year into the 1960s as a result of overfishing. In 1977 Canada extended its fishery jurisdiction to two hundred miles offshore in an attempt to regain control, a limit that left a portion of the Grand Bank (the "nose" and "tail") outside Canadian waters. With a new emphasis on the offshore fishery, larger fishing trawlers were favored in order to extend the fishery's reach. The Newfoundland government subsidized construction of a fleet of trawlers that could drag the Grand Bank. Most of the fleet was purchased by the large frozen-fish processing firms, thereby making thousands of inshore fishermen, with their small craft, the economic rivals of companies that would modernize the industry. By the 1980s, Newfoundland, the Maritime Provinces, and Quebec had seven hundred fish processing plants in operation, roughly half of which concentrated on the groundfish species—cod, haddock, and flounder.

Problems of overcapacity in fish processing, decreased demand for fish products, reduced catches, and seasonal income supplements necessary to support inshore fishermen continued. Worst of all, it became clear that the cod were disappearing. A moratorium on cod fishing, first imposed on Newfoundland's coastal waters in 1992, led to outright closure of the cod fishery in 2004.

Stocks have made some recovery, and the fishery has regained some of its former productivity. Newfoundland currently produces 15,000–25,000 metric tons of cod each year, which is approximately 85 percent of Canada's total cod production. Newfoundland's shell fishery focuses on shrimp and crab and has a current production of roughly 90,000 metric tons per year of each. Newfoundland's shell fishery has roughly doubled in size during recent past decades, which has softened the impact of cod's decline.

The forest industry

Newfoundland's newsprint industry has faced equally severe challenges in recent years, although not because of disappearing resources. Interior Newfoundland is only sparsely settled because of the glaciated terrain in which swamps,

bogs, and barrens have formed. Large areas are covered with lichens, mosses, and stunted spruce trees and are home to herds of caribou. Commercially exploitable forests are confined to a swath approximately one hundred miles wide across the central portion of the island, roughly defined by the present-day Trans-Canada Highway, which, in turn, follows the route of the railroad that had been built to allow access to the forest. Black spruce and balsam fir account for roughly equal amounts of Newfoundland's forests, and both are cut for pulp even though the island's trees are small compared with forests farther south. Newsprint mills were built at Corner Brook and Grand Falls–Windsor by British and American interests. Operations at Grand Falls were the work of English newspaper magnates Alfred and Harold Harmsworth (Viscounts Northcliffe and Rothermere), who desired a continuous supply of newsprint for their *London Daily Mail* and other presses.

Until recently, more than five hundred thousand tons of Newfoundland newsprint were shipped annually to newspapers around the world. A sharp drop in demand for newsprint led to the closure of the comparatively high-cost Newfoundland paper mills in 2008, which by then were owned by a single company. In the early days, paper and pulp manufacturers had been given timber rights on Crown (government) land free of charge, as a reward for the economic development their operations brought. When the paper company closed the mills, Newfoundland's government retaliated by expropriating the forest lands that the paper company, by then in bankruptcy, was attempting to sell to ease its own financial position. Operations at Grand Falls remained closed while the Corner Brook mills continue.

Labrador

Just as Newfoundland began as a seasonal, overseas fishery of Europeans, fishing and sealing off Labrador have long been the preoccupation of many Newfoundlanders. World opinion against the killing of seals continues to be strong, but for more than a century many Newfoundland fishermen took part in the winter seal hunt in the sea ice off Labrador. Following a near-collapse of the market for seal skins in the 1980s, Canada resumed the hunt with increased numbers of permits in the early 1990s, in part because of pressure from First Nations (Native communities) for whom the annual hunt is a traditional source of income.

Ancestors of the Innu and Inuit who live along Labrador's coast today moved down from the eastern Arctic less than five hundred years ago. With their kayaks and floating harpoons, they were efficient hunters, and they replaced an earlier, land-based Inuit culture. Moravian missionaries from Germany founded a mission and hospital at Hebron in 1831, which operated until 1959 when the Canadian government began relocating families farther south.

Labrador's Inuit once depended heavily on the whales and ringed seals they took, but now they live in Westernized villages under the protection of the Canadian government. The Labrador Inuit Land Claims Agreement of 2005 established the basis for Nunatsiavut, which is a self-governing Inuit regional government encompassing five communities along the northern coast of Labrador.

Labrador lies in roughly the same latitude as Great Britain, yet the two have vastly different environments. Western Europe is warmed by waters of the Gulf Stream–fed North Atlantic Drift, whereas the cold, south-flowing Labrador Current, which originates in Baffin Bay between Greenland and Canada, moves a stream of icebergs down the coast of Labrador most of the year (fig. 1.5). The coast is cold and damp, whereas the interior is warmer in summer and colder in winter. Except for its northern tip, interior Labrador is lightly forested, although the trees are even smaller than they are on the island of Newfoundland. No scheme to exploit Labrador's forests has succeeded as a commercial venture despite several attempts.

Labrador's borders have yet to be established to the satisfaction of all parties concerned. When France lost its remaining control of Canada to Great Britain in the Treaty of Paris (1763), Labrador was placed under the authority of the British-appointed governor of Quebec and the Labrador fishery was awarded to Newfoundland. Canada and Newfoundland—which, in effect, remained separate countries until 1949—engaged in several disputes over Labrador. In 1927 Great Britain intervened and awarded all of what is now Labrador to Newfoundland. This was far from the end of the matter, however. Quebec claimed that Canada did not confirm its boundary with Labrador when Newfoundland entered

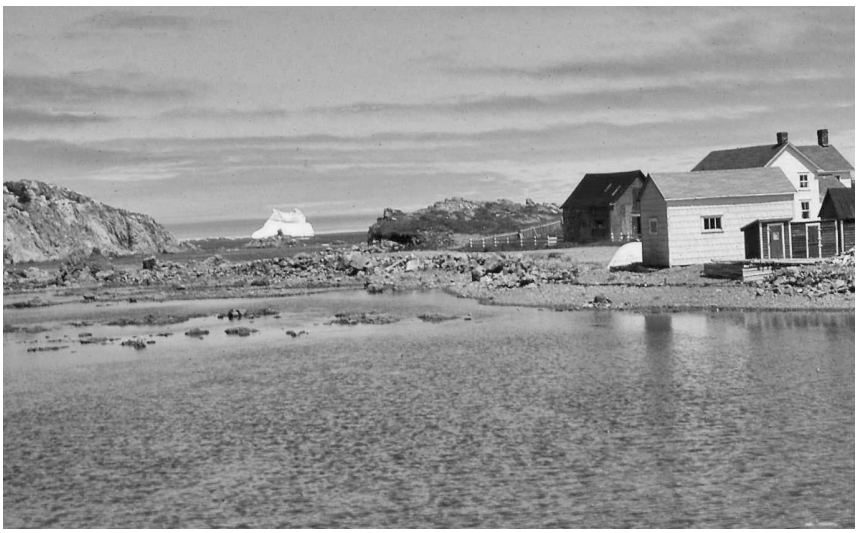


Fig. 1.5.
Icebergs drifting with the Labrador Current pass Notre Dame Bay on Newfoundland's north coast during midsummer.

Canada in 1949. Much of the Labrador–Quebec boundary is defined in terms of the watersheds of rivers that flow either to the Atlantic Ocean or to Hudson Bay.

Large bodies of iron ore that were discovered along the Labrador–Quebec border in 1896 brought the issue of Quebec-versus-Newfoundland sovereignty into sharper focus. Mines were developed near Schefferville, Quebec, in the 1950s by the Iron Ore Company of Canada, a creation of several steel companies in the United States. An ore-carrying railroad was built to the deepwater port of Sept-Isles, Quebec, where ores were shipped to steel mills near Philadelphia. A large deposit of lower-grade ore was discovered at Wabush, Labrador, as was another one at Gagnon, Quebec, and both were sold to American steelmakers. A second ore-carrying railroad connected these mines to Port Cartier on the St. Lawrence. Canadian steel mills at Sydney, Nova Scotia, and Hamilton, Ontario, also purchased ore from the Labrador and Quebec mines.

All settlements based on nonrenewable resources have a limited life span. Before iron was mined in Quebec and Labrador, the major iron mine in Atlantic Canada was at Bell Island (Wabana), Newfoundland, near St. John's. Germany considered it so important during World War II that U-boats attacked it twice and sank four ore carriers. But the Bell Island ore was costly to extract and the mine was closed in 1966. Schefferville's mine closed in 1980, although the local First Nation population remained in place to see the mines reopen with 20 percent ownership by the Naskapi Nation. Quebec-Cartier Mining Co. closed Gagnon in 1985, dismantled the town, extended the railroad northward, and built a new and larger mine, town, and processing facility at Fermont, Quebec. The upsurge in demand for iron ore by Asian steel mills is largely responsible for reviving the Labrador–Quebec industry in recent years. The ventures are now owned by a combination of European, Asian, and North American interests.

Newfoundland's claim to Labrador is to some extent compromised because the former is an island while Labrador's land boundary is with Quebec. In the 1960s, what was then the largest hydroelectric power development in the Western Hemisphere was begun at Churchill Falls, Labrador. Quebec's power authority, Hydro Québec, was a major investor in the Churchill Falls project, providing not only the investment capital that Newfoundland lacked but also a mainland connection to the market. Newfoundland receives payments from the operating profits of Churchill Falls, but Hydro Québec gets most of the electricity (for which it is guaranteed the 1969 price until the year 2041).

An expansion of the Churchill Falls project is underway about one hundred miles down the Churchill River at Muskrat Falls. Electricity generated at Muskrat Falls is to be transmitted a long distance southward over land, sent across the Belle Isle Strait in buried cables, and then sold to power utilities on the

island of Newfoundland. Beyond that, Muskrat Falls's electricity will be transmitted in similar fashion to Cape Breton Island, Nova Scotia, and perhaps beyond. The $12.7 billion Muskrat Falls development remains controversial because of the projected cost of the electricity to consumers.

Labrador's largest city, Happy Valley–Goose Bay, began in 1941 as a landing strip and refueling station to support the ferrying of military aircraft to Europe. For many years its land-based communication with the outside world was handled via government-operated ferries that connected Goose Bay with Lewisporte on the island of Newfoundland. Hydroelectric power developments on the Manicouagan River in Quebec led to building an improved road north from Baie Comeau, Quebec, which was completed as the "Trans-Labrador Highway" to Labrador City and Goose Bay in 2009. The next year Marine Atlantic ceased most ferry operations between Lewisporte and Goose Bay as a result of the new highway link. Newfoundland and Labrador remain as a single Canadian province, but Labrador's link to Quebec has been strengthened by the new logistics just as its connection to the island of Newfoundland has been weakened.

Offshore oil and gas

Hydrocarbon resources have long been known to exist in the continental shelf off the Atlantic coasts of the United States and Canada. Interest in their extraction was heightened when oil production began in the North Sea field of Europe during the 1960s. Oil companies in the United States began acquiring drilling rights off the coasts of Nova Scotia, Newfoundland, and Labrador during the 1970s. A major oil discovery was made at a site known as Hibernia, in the Jeanne d'Arc Basin, two hundred miles east of St. John's at the edge of the Grand Bank (map 1.2).

Hibernia is located at the end of "iceberg alley," where the Labrador Current carries icebergs south even during summer months, posing an environmental risk to offshore drilling platforms and shipping. Hibernia operates on a massive gravity-based floating platform, tethered to the well opening in the sea bottom, and is designed to survive collision with a sizable iceberg. Crude oil is pumped into tankers that shuttle between Hibernia and a storage terminal at Come By Chance, Newfoundland. Production began in 1997 and reached a total output of 1 billion barrels in December 2016, exceeding what had been predicted. Three more producing wells have been added in the Jeanne d'Arc Basin since Hibernia first came into production. Newfoundland's crude oil output has averaged between 75 and 100 million barrels per year since 2001 and is now a major component of the province's economy.

Proximity does not always determine logistics. An oil refinery was begun at Come By Chance in the 1970s, and although it experienced economic difficulties it now produces more than $2 billion of gasoline each year. The crude oil refined at Come By Chance originates in Iraq, Venezuela, and Europe. About 10 percent of the output is sold in Newfoundland and Labrador, and most of the rest is exported to the United States. Hibernia's crude oil, stored next to the Come By Chance refinery, is not refined there but is shipped mostly to the United States for refining.

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CHAPTER

2

Quebec

Half a century before England made its first claim to Newfoundland, France sponsored several transatlantic voyages by Jacques Cartier in search of a short route to Asia—the presumed Northwest Passage. In 1534 Cartier explored the Atlantic coastline and the next year sailed up the St. Lawrence, which he discovered to be a river rather than the arm of an ocean. Cartier's party described two prosperous Iroquoian villages along the St. Lawrence. The men wintered at Stadacona, the future site of Quebec City, and visited a larger agricultural village, Hochelaga, on the island that Cartier named Montreal. To go beyond Hochelaga would have required navigating what was later named Lachine Rapids, a reference to the impossibility of a water route between Montreal and China. Unable to go farther upriver, Cartier traded a few furs with the Natives and made an unsuccessful attempt to found a colony. Fur trading posts were begun by others in subsequent years, but permanent European settlement was not established until Samuel de Champlain founded the city of Quebec in 1608.

Where Cartier had reported large Native villages, decades later Champlain found a countryside that was largely abandoned. The St. Lawrence Iroquoians disappeared some time after Cartier's visit, perhaps because of warfare between Native groups who vied with one another for access to the new trade in European goods. When Champlain first ascended the St. Lawrence in 1603, he was greeted by several Algonquian groups who were celebrating a successful raid they had made against a weakened Iroquois population. Champlain himself was persuaded to join the battles brought by the Algonquians and by a more western Iroquoian group, the Hurons (sometimes called the "good Iroquois")

against the Iroquois Five Nations (Seneca, Cayuga, Onondaga, Oneida, and Mohawk).

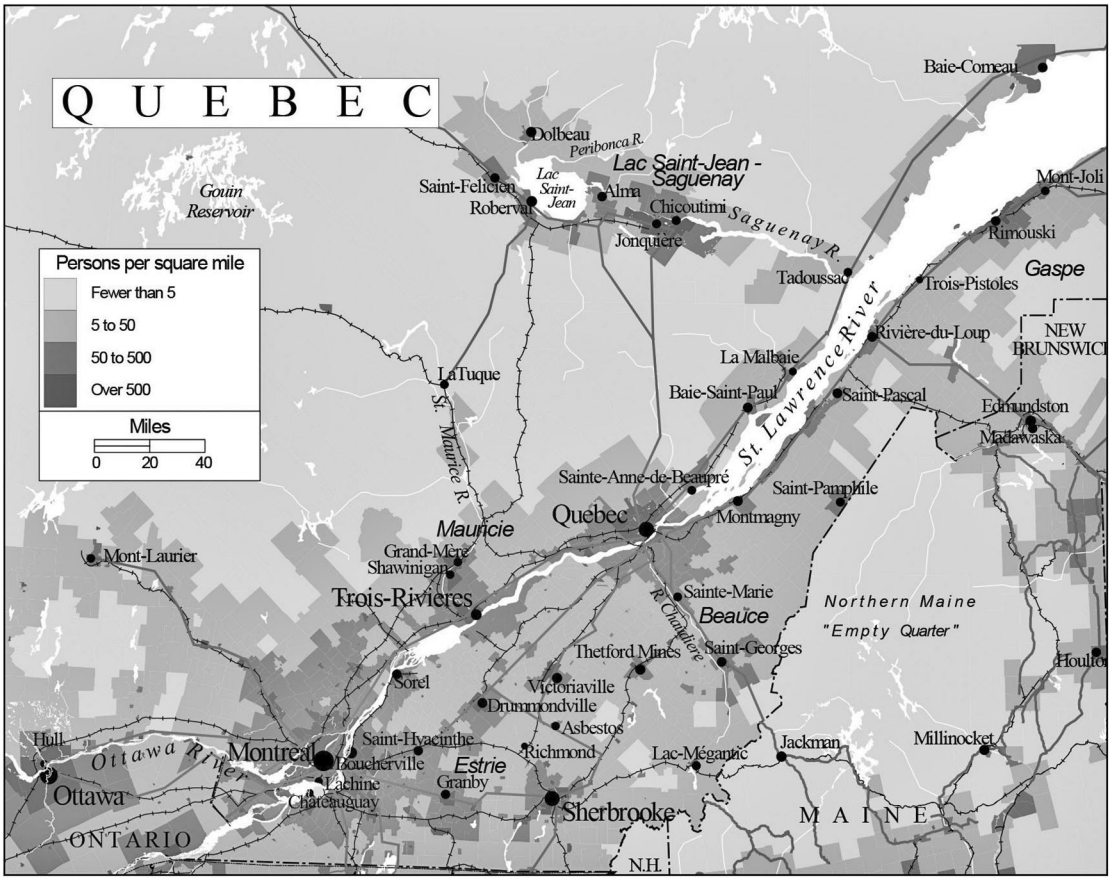
The French thus became allied militarily with Indians of what are now Quebec and Ontario against the Iroquois south of Lake Ontario, who became allies of first the Dutch and then the English. Given the geographical trend of these alliances, the Montreal-based fur trade expanded westward, up the tributaries of the St. Lawrence. It did so at a pace so rapid that by 1635 the French had entered the eastern Great Lakes. Numerous alliances already established by the Hurons opened a large territory to the north that supplied more beaver peltry for the growing European market.

In the middle of the 17th century, however, the balance of power shifted against the French and their Native allies. Smallpox broke out among the Algonquians in the St. Lawrence and Ottawa River Valleys, and the dreaded disease then spread west to afflict the Hurons. The Senecas, part of the Iroquois Five Nations, attacked the weakened Huron settlements and reduced the population by two-thirds. French trading posts were placed under siege wherever the Iroquois found them. After the Hurons' demise the role of middleman was assumed by independent French traders, known as *coureurs de bois*, who adopted the Natives' birchbark canoes and woodland ways. French fur trading expanded still farther to the west, and by the 1750s traders had built posts on the Saskatchewan River. A French presence was relayed westward through these linked outposts of the fur trade.

The St. Lawrence Lowland

Even though their trading empire was far flung, the area of present-day Quebec that was actually settled by the early French included little more than the St. Lawrence Lowland between Montreal and Quebec City (map 2.1). The Lowland itself is a gap between the Canadian Shield to the north and the Appalachian Mountains to the south. The Gaspé Peninsula, which is part of the Appalachians, was thrust northward, toward the Shield, during the Appalachian orogeny. Quebec is an Algonquian word meaning strait or narrow passage, a reference to the narrow St. Lawrence channel at the point where the Lowland terminates and the river enters the widening gap between the Appalachians and the Shield. The city takes its name from the narrows; the province of Quebec, in turn, takes its name from the city.

The St. Lawrence Lowland is a roughly triangular region that is more than one hundred miles wide at the Quebec–New York border. In late glacial times an extensive flooded area known as the Champlain Sea transgressed this low-lying land



Map 2.1.

now drained by the St. Lawrence River. The glacial ice had melted and sea levels had risen, but the land surface had not yet rebounded as the weight of the Laurentide ice sheet was removed. The lowland soils that emerged were fertile, especially near Montreal, but a short growing season and long, cold winters severely limit agricultural options. Despite Quebec's location in the same latitude as France, both Montreal and Quebec City have January temperatures 25°F colder than those of Paris. Quebec has a continental climate because it lies too far inland to benefit from the warm ocean currents that moderate Western Europe's winters.

The entire claim of France in North America was called New France, and the St. Lawrence settlement was known simply as Canada, there being no more need to qualify it as "French Canada" than there would have been to speak of an "English Virginia" in the 17th century. Canada was French in population, language, law, and customs, a direct extension of ancien régime France. Beginning in 1663, its affairs were directed by King Louis XIV. Canada was a feudal society

that embraced a landed nobility, an influential clergy, a bourgeoisie, and a peasant class. All were enmeshed in another French institution exported to Canada, the seigneurial system of land tenure in which were specified the obligations and rights of the seigneur, or landowner, who had received the land directly or indirectly from the Crown; and the *cenistaire*, who held a concession of land for which he paid an annual rent (*cens*) to the seigneur. About two-thirds of the seigneurs were members of the nobility.

Seigneuries usually were trapezoidal in shape with one side formed by the river's bank. The St. Lawrence Lowland was divided into several dozen seigneuries in this manner, and each seigneury was subdivided into *rotures*, which were the parcels of land farmed by the cenistaires. The rotures were laid out in long strips, about one-tenth as wide as they were long. When the land along the St. Lawrence River had been made into farms, the procedure was repeated, in an interior *rang* facing a road parallel to the river. The rates of forest clearing and land improvement were slow in many seigneuries, and thus the establishment of new rangs of settlement, away from the river, took years to complete.

One benefit of the long-lot system was the simplicity by which rotures could be surveyed. For the *habitant* (farmer) it meant that farmhouses were less dispersed than in the typical rectangular system of survey later used in North America; neighbors therefore lived closer to one another. Perhaps more visible than significant, the distinctive long-lot geometry of the seigneurial system has endured as a marker of early French settlement in many parts of Canada and even the United States (fig. 2.1).

Fig. 2.1.
St. Lawrence Lowland near Bic, Quebec. The distinctive pattern of long-lot fields and fences has long outlived the seigneurial land-tenure system of which it was a part.

The French and the British

Although France lost its claim to Quebec well over two hundred years ago, it is the French origins of Quebec (and therefore of Canada) that remain as perhaps the most important political issue faced not only by Quebecois but by all other Canadians at the present time. Even the notion of a bilingual Canada—or an ethnic French Canada that presumably exists wherever French speakers are found—is considered irrelevant by the many who seek establishment of a sovereign Quebec state rather than to continue as a Francophone province within the Canadian state.

Contemporary Quebec–Canada tensions originate in the long memories of a conquered people. In North America, the fall of France and the ascendancy of Great Britain took place between 1758 and 1763 as a result of the Seven Years' War between the two countries. Ever since the 1670s, when the Hudson's Bay Company emerged as a trading force in the north, there had been aggressive competition over rights to a monopoly trade with various North American Native groups. South of the Great Lakes, French traders were in the vanguard, but they were also in constant conflict with the British (usually Americans) who were making the rounds of Native villages in the Ohio Valley by the 1720s. The French went into retreat.

To Britain's surprise, the French reemerged and regained control of the empire of stockaded trading posts that made up the fur trade. The French formed new alliances with Native groups that lived in the Great Lakes and Upper Mississippi Valley region where furs were most plentiful. In 1758 the British retaliated by attacking Canada. They captured the French fortress at Louisbourg, Nova Scotia, and then moved on to Quebec. Having already set fire to the St. Lawrence habitants' dwellings and barns and laid waste to their crops, British troops under the command of Major-General James Wolfe decided to move against the capital. On September 13, 1759, some forty-five hundred British troops landed at Quebec City, scaled the cliffs, and engaged a like number of French troops, under the command of General Louis-Joseph Marquis de Montcalm, in a pitched battle. Before French replacements could arrive, Wolfe's army broke through the French lines and surrounded the walls of the city. The French surrendered five days later.

Beaten still farther up the St. Lawrence, the French finally made an unconditional surrender at Montreal one year later. Under terms of the Treaty of Paris, signed in 1763, France ceded to Great Britain all her North American possessions except the tiny islands of St. Pierre and Miquelon off the southern Newfoundland coast. There would be no new French settlements made after that date in the territory that would become the United States, but the vibrant French society of

Quebec survived. In fact, it was not until the early 19th century that French speakers finally were outnumbered by English speakers in Canada as a whole.

At the time of the conquest in 1760, more than seventy thousand people of French descent lived in Quebec. Of this total, some eight thousand lived at Quebec City, fifty-two hundred at Montreal, and five hundred and fifty at Trois-Rivières. The remaining majority, some fifty-six thousand people, lived in seigneuries bordering the St. Lawrence River. The habitants practiced a largely subsistence agriculture and supplemented their livelihood by working seasonally in the fur trade. Their lives were centered on the seigneury and the parish in which they lived, an existence not all that different from their European past.

Quebec City evolved in a fashion reminiscent of European cities. Champlain's habitation of 1608 was at the river's edge; it became a commercial enclave lined with wharves, known as the lower town. Quebec City's upper town was the center of government and religious authority, a walled city that nonetheless had fallen to the British. Trois-Rivières, which would later became the center of an important industrial region of Quebec, was a small market town when the British arrived.

Quebec City has remained the capital, but it has never been a close rival of Montreal in terms of economic control. Montreal began as a religious mission in 1642. The original walled town was enlarged and redesigned by the religious order of Sulpicians who became seigneurs of Montreal Island in the 18th century. Montreal's location, near a rapids that required portaging and at the confluence of the Ottawa and St. Lawrence Rivers, helped make it the center of the fur trade, a role that continued into the 19th century. Because of its location and its well-developed trade, Anglophone businesspeople moved to Montreal soon after it became British territory. Quebec City, outside the mainstream of North American economic transactions, remained French to the core (fig. 2.2). Montreal did not, in part because it grew as a commercial and industrial center that was open to new capital and new entrepreneurship in the decades following the conquest.

The terms under which Quebec residents would coexist with the new British regime were put forth in the Quebec Act of 1774, a rather remarkable edict in terms of the tolerance it showed. The act guaranteed the future existence of some important Quebec institutions. Roman Catholicism was granted a degree of official recognition, the seigneurial system was guaranteed, and French civil law was maintained. The British also enlarged Quebec's territory by attaching to it most of the Great Lakes and Upper Ohio Valley, simultaneously challenging the westward push of settlement from the American seaboard colonies and giving new territory to the Montreal traders, who thereby were situated at the apex of British North American commerce (briefly, as it turned out, until the American Revolution).

Fig. 2.2.
Chateau Frontenac at Quebec City is a latter-day recreation of a French castle, but it remains a well-known symbol of Quebec's heritage.

American troops in the command of Richard Montgomery and Benedict Arnold marched against British-controlled Quebec in 1775 but were soundly defeated the next year. The present southern boundary of Quebec lies approximately where Great Britain and the United States drew the line in 1783.

With the Great Lakes–St. Lawrence water route established as the only feasible artery for shipment into the Canadian interior, Montreal grew faster than any of its rivals. It surpassed Quebec City in size by 1830 and became Canada's largest industrial center. The Lachine Canal, completed in 1825, allowed ships from the interior to bypass the rapids that had stopped Jacques Cartier centuries earlier. Mills, foundries, and refineries built along the canal, on the southern edge of Montreal Island, stimulated new directions of urban growth. Over the 19th century Montreal became Canada's undisputed center of banking and finance. Steel mills, oil refineries, flour mills, sugar refineries, and food-processing plants gave it a diversified industrial base. Canada's major railroad companies made Montreal their headquarters and built extensive shops and yards that employed thousands of workers in and around the city.

In many respects Montreal—which was Canada's largest city until the mid-20th century—was atypical of Quebec as a whole. Anglo capital investment was largely responsible for building Montreal's industries, a circumstance that also attracted a large Anglophone workforce to the city. From 1830 until the 1870s, Francophone Montrealers were outnumbered by non-Francophone European immigrants, who, as a share of Quebec's population, were concentrated in

Montreal. The new immigrants swelled the ranks of laborers and accounted for increasing numbers within the city's business elite. Although Montreal slowly regained a Francophone majority as a result of internal migrations, there was no overwhelming move to Canada's metropolis from most parts of Quebec, where the population remained agricultural and overwhelmingly rural.

Ruralization has a long history in Quebec. In the 18th century, land was so plentiful in the seigneuries along the St. Lawrence—compared with Quebec's comparatively small population and slow rate of growth—that the ratio of country dwellers to urban dwellers increased for a century after the conquest. Anglos became the largest purchasers of seigneuries after 1800, and they introduced to their lands a more intensive agriculture than the typical habitant had practiced. Wheat once was grown as far north as Rivière-du-Loup, more than seventy miles downstream from Quebec City, but a series of cold years in the first decades of the 19th century hastened a southward retreat of wheat production. Eventually Upper Canada (Ontario) became a major wheat producer, and although the crop was exported to Europe via Montreal, the emergence of large-scale wheat farming to the west marked an end to Quebec's former role. Oats, hay, and dairy products became the principal outputs of Quebec's agriculture thereafter.

The seigneurial system itself fell victim to the changes in Quebec agriculture and society; it was abolished in 1854. The influence of Quebec's landed nobility had declined, diluted in part by the presence of a merchant class of seigneurs, both Anglo and French, and much more by a shift in wealth toward the cities.

Role of the Church

Among the institutions of ancien régime France that remained in the fabric of Quebec society, the Roman Catholic Church was by far the most important. The church's influence increased in the late 19th century and on into the 20th. It gradually took responsibility for most of Quebec's schools, its hospitals, and its programs of social security and welfare. Intellectual life was enmeshed with the church's teachings, which emphasized authority, obedience, and family. The church was an active agent promoting an ethnic and religious Quebec nationalism: in Canada, what was French was Quebec; and what was Quebec was overwhelmingly Catholic. Beyond that, the church emphasized the superiority of rural life—the "nobility of agriculture"—where, in the open air, the Christian life could best be realized.

Rural colonization schemes promoted by the church had the dual purpose of relieving population pressure in the St. Lawrence Lowland (where decades

Fig. 2.3.
The traditional Quebec folk house with its bell-cast roof is found in many areas of rural colonization dating from the late 19th and early 20th centuries.

of natural increase had put agricultural land in short supply) and establishing new Francophone colonies, away from settled territory, in the spirit of cultural expansion (fig. 2.3). Quebec faced an increasing gap between rural population growth and a roughly constant agricultural base. The general trend toward smaller family sizes that swept late-19th-century Western Europe, the United States, and most of Canada was not operative in rural Quebec.

The church's efforts to spread out the population were timely but also comparatively unimportant when compared with the number of Quebecois who left Canada. Far more attractive to the thousands of families struggling to keep body and soul together on a Quebec farm was the lure of jobs in the cotton textile mills of New England. Quebec labor—men, women, and children—provided nearly half the workforce in some Merrimack Valley textile mills north of Boston. The outpouring was strongest in the 1880s, although the social contacts between homeland and destinations that such migrations produce led to even more migration in later years. Eventually, whole Quebec neighborhoods appeared in the industrial cities of New England and New York.

Estrie (the Eastern Townships)

European settlement was sparse outside of the seigneurial zone until the 19th century. As a result of Great Britain's loss of the American colonies under the 1783 Treaty of Paris—only twenty years after the first Treaty of Paris gave Britain authority over Quebec—there was a natural tendency for those American colonists who were loyal to the British Crown to seek new homes north of

the border. Loyalist migrations created new colonies of English speakers in scattered areas from New Brunswick to Ontario, including Quebec. But the Loyalists avoided the St. Lawrence seigneuries. Whether they are regarded as having been more British or more American, the large majority of Loyalists were Anglophone Protestants. They settled an irregular-shaped zone, more than one hundred miles long and within fifty miles of the US border that was given the informal name Cantons de l'Est (Eastern Townships) and later called Estrie. The region is overwhelmingly Francophone today, but its distinctiveness derives from its Anglophone past.

The character of the Eastern Townships was stamped even more boldly with the arrival of thousands of British immigrants in the early decades of the 19th century. English law, freehold tenure, and a township land-survey system added further contrasts with the French traditions of Quebec. For a time land companies held large tracts that were sold primarily to Anglophone settlers, a practice that temporarily isolated the Eastern Townships from the rest of Quebec. Sherbrooke became the region's principal city and developed a manufacturing economy based on direct railroad linkages with the year-round ocean ports of Saint John, New Brunswick, and Portland, Maine. Textile and leather industries similar to those in New England appeared in the Eastern Townships by the mid-19th century. Under Anglo influence, the area developed more as an outlier of New England than of Quebec.

Growth in manufacturing industries created a new demand for labor, which was met in part by immigration from the St. Lawrence seigneurial zone after 1850. Two-thirds of the Eastern Townships' population was of British descent at that time, but by the early 1870s the area had a Francophone majority. Continued growth based on industrial expansion produced a six-to-one ratio of Francophone to Anglophone ancestry by 1931. Quebec's textile and leather industries, like New England's, declined in the face of foreign competition beginning in the 1960s. High-tech industries and transportation equipment manufacturing have partially replaced the older industrial base.

Quebec's asbestos deposits occur along a line from Sherbrooke to Quebec City, at the fringes of two regions, Estrie and Beauce. Asbestos is a filament-like mineral with extremely low heat conductivity that makes an excellent chemical-resistant insulation. A vein of white (chrysotile) asbestos runs eighty-five miles from the community named Asbestos to Thetford Mines, where mining first began in 1876. The asbestos, which has to be blasted out of the hard, peridotite rock in which it formed, originated when a piece of continental lithosphere plunged beneath the continent's margin during the formation of the Appalachian

Mountains. The mines were subsidiaries of British or American firms until the Quebec government nationalized part of the industry in 1977. By then Quebec's share of the world market was declining, but that was a minor problem compared with what followed.

Accumulating evidence of deaths caused by asbestos-related carcinogens caused the US Environmental Protection Agency to eventually place a total ban on its use in building construction. Although only about 240 Quebec mine workers were receiving workers' compensation payments for lung ailments in 1982, by that year the Johns-Manville Corporation, a leading American fabricator of Quebec asbestos, sought bankruptcy protection after it was served with nearly 20,000 health-related lawsuits. The European Union banned the use of asbestos in 2005. Russia is now the world's leading asbestos producer, followed by Kazakhstan and Brazil, with Canada accounting for only about 10 percent of the world's production. The Quebec operations continue, almost exclusively to supply the export market. Proponents maintain that asbestos is safe if properly handled, but the government faces strong pressure from groups at home and around the world to ban its production.

The Beauce

One of the few parts of Quebec outside the St. Lawrence Lowland that saw early European settlement was the Rivière Chaudiere valley, on the south side of the St. Lawrence south of Quebec City. This region, known as "the Beauce," is often described in favorable comparison with one of the major wheat-raising districts in the Paris Basin of France. Quebec's Beauce has not been a significant wheat producer since the 19th century, but its gently rolling landscape of neat farms and small villages harkens more to the European past perhaps than most other areas that the French settled in Canada.

With its prosperous agriculture and diversified small-city economies, the Beauce region also stands in sharp contrast with the landscape of northern Maine, which it adjoins at the international border. Farms on the Quebec side end in a solid line of forest on the American side of the border (fig. 2.4). There are few legal points of entry and not a single paved highway for nearly 150 miles north from Jackman, Maine, to the St. John River Valley, where Quebec, Maine, and New Brunswick meet. Wilderness on the American side gives way to a settled landscape of farms in Quebec, a difference that comes more from how the land was viewed from the two sides of the border than from any differences in physical environment.

Fig. 2.4.
The barn in the foreground overlooks the Maine–Quebec border. Northern Maine's vast industrial forest lies to the south.

Gaspé

When the northern Appalachian Mountains were formed more than 400 million years ago, ocean sediments at the edge of the continent were compacted by the convergence of land masses. The Gaspé Peninsula was formed as a range of mountains thrust upward between the colliding continents. Geologically speaking, Gaspé is more closely related to the northern Appalachians than it is to the rest of Quebec. Except for several peaks over 3,000 feet in elevation near the St. Lawrence River, however, most of Gaspé consists of gently rolling uplands that are creased by the valleys of fast-flowing streams. The coastal lowland is only a few miles wide along the St. Lawrence, where villages are crowded into a narrow strip of arable land between river and mountain.

Gaspésians traditionally looked to the sea more than to the land. Some Native groups lived relatively undisturbed in the peninsula's interior well into the 20th century. Paved roads did not reach around the peninsula until the 1960s. Gaspé's remote fishing villages date from the end of the period of French control, when British and American settlers took over the seigneuries and established a commercial fishery in the Gulf of St. Lawrence. A credit system was imposed, similar to that in Newfoundland, whereby merchants equipped fishermen with provisions in exchange for their annual catch of cod. Gaspé's merchants sold their product in European markets, creating stronger economic ties with London than with the rest of Quebec.

Francophone migration from the St. Lawrence Lowland to Gaspé reversed the population trend that had begun with British and American settlement, and

by the 1930s Gaspé was overwhelmingly French once more. Attention turned inland, toward the spruce and fir forests, which were cut for wood-pulp manufacture. Although Gaspé's forest industry is small by Quebec standards, the combination of logging and subsistence farming in cleared woodlands supports thousands of families. During the 1930s the Quebec government and the church created new, inland communities of Gaspé's farming–forestry frontier, but most were short-lived, and the population thereby retained was small in comparison to the flow of migrants out of the region.

Overfishing in the Gulf of St. Lawrence and economic problems in the fishing industry eventually led to population loss in coastal areas as still more people left the region in search of work. The peninsula's long, rugged coastline, dotted with fishing villages and small farming communities, no longer sees the kind of economic production that once characterized Gaspé, but tourism based on those very attractions has become an important growth industry.

Saguenay River–Lac St.-Jean

Most of Quebec is either too cold or its soils are too poor to allow agricultural development. Of these two limits, climate is actually the less important. Even though the growing season may be too brief for grain crops to mature, summer days are long and are warm enough to produce good hay fodder for dairy cows. But if the soil is too thin, too rocky, or too acidic, then even hay crops are not possible. Such soils are typical of the Canadian Shield, the massive core of ancient granitic rocks that forms the heart of the North American continent and which is exposed at the surface over most of Quebec. The Shield meets the St. Lawrence River near Quebec City and rises abruptly at the edge of the St. Lawrence Lowland just north of Montreal. Within the Shield only small areas (often, glacial lake margins) have a cover of glacial sediments thick enough for the development of agricultural soils.

One such area is the margin of Lac St.-Jean and the adjacent broad plain fringing the upper Saguenay River. Although Lac St.-Jean lies one hundred miles north of the edge of settled territory at Quebec City, agricultural settlers began moving up the Saguenay Valley in the 1860s, making farms out of forest clearings in an area where soils were known to be comparatively fertile. The hard labor required to clear forested land was provided by the large families typical of rural Quebec. New farms were made for sons who married and moved on north in a continuing cycle of settlement expansion. Farming communities on the forest fringe were promoted by the church as part of its program of rural colonization and French cultural expansion within Quebec.

The lower Saguenay River is a fjord, a former river valley overdeepened by the seaward movement of glacial ice, which allows ocean vessels to pass inland more than sixty miles from the St. Lawrence River. British-owned companies sent shiploads of Saguenay Valley timber to Great Britain during the 19th century. As the local population grew, lumber interests built sawmills which, in turn, became the nuclei of some of the region's first urban centers. One example is Chicoutimi, now the focus of a metropolitan area whose population exceeds 150,000. Lumber and paper mills support thousands of jobs in the Saguenay region today.

A large generation of hydroelectric power takes place at waterfalls on the Saguenay and Péribonka Rivers, both of which are major streams feeding Lac St.-Jean. Because the smelting and refining of aluminum require enormous amounts of electricity, the industry has been drawn to locations like the Saguenay River even though deposits of bauxite, the raw material from which aluminum is refined, are located thousands of miles away. Aluminum production began in what is now the city of Jonquiere, Quebec, in the 1920s. Ocean ships were able to navigate inland on the Saguenay's deep waters and unload cargoes of bauxite mined in Guyana or Jamaica.

American- and Canadian-owned aluminum companies have expanded their production facilities here over time, closing older mills but opening new ones to produce aluminum for aircraft production, automobile engines, and a variety of other industrial uses. In most years Canada ranks among the world's top-four aluminum producers and more than 90 percent of the production takes place in Quebec. Much of Quebec's aluminum output goes to markets in the United States.

Mauricie

Paper products are to the Mauricie region what aluminum is to Lac St.-Jean–Saguenay. Mauricie is a regional term referring to the drainage area of the St. Maurice River north of Trois-Rivières. The region became specialized in forest products, especially paper, beginning in the 1930s. Some 85 percent of the land area in Mauricie is forested, and more than four-fifths of the forest is publicly owned. Black spruce and balsam fir, the two most desirable species of long-fiber softwoods used to manufacture paper, are the dominant trees over an area extending more than two hundred miles north into the Canadian Shield. "Improvements" were made to the St. Maurice River in order to expedite log driving from the upstream forests to pulp mills located at downstream rapids, where logs are ponded and power is generated for the mills. Probably

no region of the world is better suited to specialize in paper production, especially newsprint.

Adoption after 1900 of the Fourdrinier method of continuous paper formation increased efficiency and led to a marked increase in paper production. Eighty percent of Quebec's newsprint was sold to newspapers in the United States, a market that also was served by Ontario. In the early years of pulp and paper manufacture, however, American firms preferred to purchase Canadian pulp but manufacture their own newsprint in the United States. Seeking to establish greater newsprint production in Canada, between 1900 and 1910 the governments of Ontario and Quebec placed an embargo on exports of pulp made from trees cut on Crown (public) lands. The United States countered with a high tariff on Quebec and Ontario paper, but pressure from American newspaper publishers led to the removal of the tariff in 1913. One effect of the trade skirmish was to quintuple the size of Quebec's newsprint industry. From the 1920s onward, Quebec has exported more than 90 percent of its paper production to the United States.

Another of Quebec's industrial developments began in 1898 when a hydroelectric power dam was constructed on a 135-foot falls on the St. Maurice River. Shawinigan Falls became the focus of an industrial complex that included pulp and paper mills, chemical plants, and an aluminum smelter. In the early decades of the 20th century, the Quebec government built new hydroelectric dams that would flood new reservoirs for (usually) American-owned pulp mills. The Canadian government financed a new railway in the St. Maurice Valley to expand the zone of development. All of these efforts were part of a deliberate policy to attract foreign investment.

Mergers in the paper industry during the past two decades have reduced both the number of companies and the number of operating mills but have expanded ownership worldwide. Quebec still accounts for nearly one-fourth of the world's newsprint exports, but a reduction in demand for newsprint—attributed to the increased use of electronic media—has led to a corresponding reduction in manufacturing. At present, about three-fourths of the newsprint produced in Quebec goes to the United States.

The Quiet Revolution and its aftermath

The role played by foreign capital in the pulp and paper industry illustrates the pronounced shift in Quebec's political economy that took place in the first half of the 20th century. British economic influence was perceived by Quebec's

Francophone majority as a threat to their cultural survival, but American direct investment was invited because it carried no taint of the past and was regarded as the means by which Quebec could acquire a modern industrial economy. Natural resources were given outright to American corporations that would develop them, an arrangement that became increasingly difficult to justify in later years. In 1949, a five-month strike by Johns-Manville miners at Asbestos, Quebec, in which provincial police intervened on the company's behalf, showed how closely the Quebec government was linked to American business. More strikes fed a growing concern over the state's role in promoting and protecting foreign investment.

The 1960s period in Quebec history, known as the Quiet Revolution, was characterized by a rise in popular dissatisfaction with established institutions such as foreign corporations and by a general opening of society to include new ideas (fig. 2.5). Although dissent had begun to emerge in the 1930s, it emerged more forcefully in the 1960s in the writings of Catholic intellectuals like Pierre Trudeau, who attacked the privileged role of the church in Quebec and argued for a revitalization of public life. The church's influence declined in the 1960s as the provincial government expanded its programs of education, health, and social welfare for all of Quebec's people—activities that the church had controlled for many years. The high birth rates once typical of rural Quebec declined as family planning became accepted.

Another aspect of *la révolution tranquille* was an increased resistance to the role played by the Anglophone business elite of Montreal. Quebec's classical col-

Fig. 2.5.
Habitat, designed by Canadian–Israeli architect Moshe Safdie for the 1967 Montreal World's Fair, is associated with the era of political and social change in Quebec.