

SOCIETY, TERRITORY AND ECOLOGY
IN QUÉBEC :
A HISTORIOGRAPHIC REVIEW¹

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“Environmental history,” “history of the environment” and “historical ecology” are all terms used to refer to a field of research that some people claim to be innovative or even

1. The author would like to thank Matthew D. Evenden, René Hardy, Michel Lacroix and Jean-Claude Robert for their comments and suggestions.

revolutionary. While the scope of the field varies with historical practices, scholars generally agree that “environmental history” designates the study, over time, of the material, political and intellectual dimensions of the interaction between society and the environment; they emphasize that such study must cover the evolution of each element of that pair, as well as the transformation of their relations.² Thus defined, this field of research prompts us to question the discourse on the nature of the actors studied and to attribute a

2. This definition is based on J. R. McNEILL, “Observations on the Nature and Culture of Environmental History,” *History and Theory*, vol. 42, no. 1, 2003, pp. 5-43. For an overview of the different possible definitions, see one of the founding debates in the field in William CRONON, “Modes of Prophecy and Production : Placing Nature in History,” *Journal of American History*, vol. 76, no. 4, 1990, pp. 1122-1131 ; Carolyn MERCHANT, “Gender and Environmental History,” *Journal of American History*, vol. 76, no. 4, 1990, pp. 1117-1121 ; Donald WORSTER, “Transformation of the Earth. Toward an Agroecological Perspective in History,” *Journal of American History*, vol. 76, no. 4, 1990, pp. 1087-1106.

certain dynamic to the environment, which is often reduced to an inert, passive backdrop for the social changes, political struggles and heroic lives that historians usually examine. This requires showing how nature, in both its material forms and representations, is a power issue and place of conflict, how space and its non-human actors limit the human action that shapes them, and how the resources fundamental to economic exchange remain malleable to an extent determined by institutions and nature itself. This also requires acknowledging that the environment – as well as its biotic and abiotic elements – has its own history, rhythm and cycles.

We have provided a broad and overarching definition of environmental history because we consider that the field – like its object of study – is open, dynamic, complex and chaotic. We seek a broad perspective that will enable us to understand how research in Québec studies can contribute to the environmental history of Québec.

It may seem ambitious and premature to attempt a survey of works dealing with Québec's environmental history, particularly since the historians who have focused on Québec society do not necessarily consider their contributions part of environmental history. A brief look at the United States and Europe will, however, show the relevance of this approach.

In the past few decades, environmental history in the United States has acquired all the signs of a distinct historiographic field : a society that publishes a journal³ and holds annual meetings, university positions and endowed chairs, handbooks and readers, university press series, specialized colloquia,

3. Presently titled *Environmental History*, the journal of the American Society for Environmental History and the Forest History Society was created in 1996 through the merger of *Environmental History Review* (originally *Environmental Review*, 1976-1989) and *Forest & Conservation History* (*Forest History*, 1958-1974 and the *Journal of Forest History*, 1974-1989).

and collective works. The visibility of environmental history has legitimized the pioneering work of seasoned solitary scholars and opened up new careers for young researchers. Prestigious historical journals have published special issues on environmental history. Historiographic surveys have increased in number, reflecting both the maturity of the field and its ability to integrate numerous fields of historical study.⁴

A similar movement was initiated in Europe, where an international association was established and an international journal⁵ was founded.⁶ One of the reasons Europeans

4. See the theme-based issues of the following journals : *History and Theory*, vol. 2, no. 1, pp. 5-43 ; *Journal of American History* vol. 76, no. 4, 1990, pp. 1122-1131 ; *Journal of Urban History*, vol. 20, no. 2, 1994, pp. 299-434 ; *Journal of Historical Geography*, vol. 20, no. 1, 1994, pp. 1-56 ; *Business History Review*, vol. 73, no. 4, 1999 ; *Journal of the History of Biology*, vol. 31, no. 1, 1998, pp. 1-83.

5. *Environment and History*, founded in 1994.

6. Verena WINIWARTER [ED.], "Environmental History in Europe from 1994 to 2004. Enthusiasm and Consolidation," *Environment and History*, vol. 10, no. 1, 2004, pp. 501-530.

may have been able to jump on the environmental history bandwagon so quickly is that they have strong traditions in historical geography, urban history and historical anthropology, which share similarities with environmental history as it is practiced in the United States. Climate, animals, landscape, forests, urban infrastructure, and the “idea of nature” are a few of the topics in environmental history on which European researchers from all disciplines have focused in recent decades.⁷ These researchers have taken

7. Even if we limit ourselves to the case of the French, we can appreciate the diversity of the approaches and topics of European environmental history. See Emmanuel LEROY LADURIE, *Histoire du climat depuis l'an mil*, Paris, Flammarion, 1967 ; Jean-Paul DELÉAGE, *Histoire de l'écologie, une science de l'homme et de la nature*, Paris, La Découverte, 1991 ; Jean-Robert PITTE, *Histoire du paysage français*, Paris, Tallandier, 1983 ; Robert DELORT, *Les animaux ont une histoire*, Paris, Seuil, 1984 ; Andrée CORVOL, *L'homme aux bois. Histoire des relations de l'homme et de la forêt XVII^e-XX^e siècles*, Paris, Fayard, 1987 ; Xavier de PLANHOL, *Le paysage animal. L'homme et la grande faune. Une zoogéographie historique*,

an interest in this new field and developed extensive networks for collaboration and comparison. Furthermore, the specific character of European environmental history must be noted, as it bears the mark of natural scientists who have produced exemplary studies on the energy and material flow of societies in the context of agricultural, industrial and urban revolutions.⁸

I make this detour because I think that the situation of Québec studies is not so different

Paris, Fayard, 2004 ; André GUILLERME, *Les temps de l'eau. La cité, l'eau et les techniques*, Seyssel, Champs Vallon, 1983 ; Jean-Claude DEBEIR, Jean-Paul DELÉAGE et Daniel HEMERY, *Les servitudes de la puissance. Une histoire de l'énergie*, Paris, Flammarion, 1986.

8. Rolf-Peter SIEFERLE, *The Subterranean Forest. Energy Systems and the Industrial Revolution*, Cambridge, White Horse Press, 2001. This mark can be seen from the first publications of a self-conscious environmental history in Europe. Christian PFISTER and Peter BRIMBLECOMBE, [eds.], *The Silent Countdown : Essays in European Environmental History*, Berlin, Springer-Verlag, 1990.

from that prevailing in Europe.⁹ The work produced by historical geographers, social and economic historians, as well as researchers in urban studies and material culture provides historical and historiographic knowledge relevant to environmental history. Anyone venturing into this field will be able to draw valuable information from various research efforts carried out in Québec studies. Thus, positioning Québec in world environmental history requires first that we assess the contribution Québec studies have made to analyses on the interaction between society and the environment in the 19th and 20th centuries. To this end, we will survey the scientific work on space and territory, the economics of natu-

9. The same is true of the situation of Canada and Australia. See Graeme WYNN and Matthew D. EVENDEN, "Is There, Was There, Should There Be a Canadian Environmental History," a presentation given at the annual conference of the Canadian Historical Association held in London, Ontario in June 2004, and Libby ROBIN and Tom GRIFFITHS, "Environmental History in Australasia," *Environment and History*, vol. 10, no. 1, 2004, pp. 439-474.

ral resources, the urban environment, and the biogeophysical environment.

In this survey, which is by no means exhaustive, we will identify which “environment” the authors discussed and on which interactions between society and the environment they focused.¹⁰ The reader will not find here a historiographic survey of Québec environmental history or a compendium of the precursors of the field. Few of the authors surveyed would consider themselves as such and many would distance themselves from what they would call fashion, post-modern adventure or disguised activism. We will take into

10. As a result of space limitations, we are unable to include fields such as Native Studies and Nordic Studies, which illustrate the significant contribution of anthropology to our understanding of the links between society and nature. The reader can nonetheless refer to the article by Denys DELAGE, “Microbes, animaux et eaux en Nouvelle-France,” *Globe*, vol. 9, no. 1, 2006, pp. 113-140, and that by Caroline DESBIENS, “Un nouveau chemin vers les rapides. Chisasibi/La Grande et les relations nord-sud au Québec,” *Globe*, vol. 9, no. 1, 2006, pp. 177-210.

account the context in which they produced their work and the type of relations with nature they highlight in their analyses. We will certainly emphasize the contribution of those who do identify with this new field, being sure to indicate their perception of the contribution of their precursors so that one can grasp the specificity of their questioning. Finally, we will underline the main issues and challenges involved in the diachronic study of social and environmental changes in Québec.

HISTORICAL GEOGRAPHY :
SETTLEMENT AND EXPLOITATION
OF THE LAND

We have alluded already to the relationship between geography and environmental history.¹¹ We should not be surprised to see

11. For more on this link, see in particular the essay by Michael WILLIAMS, "The Relations of Environmental History and Historical Geography," *Journal of Historical Geography*, vol. 20, no. 1, 1994, pp. 3-21 and the contributions in

geography among the fields that have contributed to our historical knowledge of the interaction between society and the environment. The authors of recent reviews see the distant origins of Canadian environmental history in the geographic considerations of the first professional Canadian historians, even though they are careful to point out the shortcomings.¹² While the history of staples indicates how the availability of natural resources and their geographic distribution moulded the historical and economic development of Canada, it provides few answers about the role of human activity in shaping the environment. The environment discussed

Marie-Claire ROBIC, *Du milieu à l'environnement. Pratiques et représentations du rapport homme/nature depuis la Renaissance*, Paris, Économica, 1992.

12. Neil S. FORKEY, *Shaping the Upper Canadian Frontier : Environment, Society and Culture in Trent Valley*, Calgary, University of Calgary Press, 2003, pp. 6-13 ; Matthew D. EVENDEN, *Fish versus Power : An Environmental History of the Fraser River*, Cambridge, Cambridge University Press, 2004, pp. 10-11.

in these works seems impervious to the activity of a society that owed its growth and economic success to it. This approach does not account for the *interaction* between society and the environment.

It is precisely a relational approach that is found in historical geography, as practised for the past two decades in Québec.¹³ The settlement and development of the land have been the primary focus of historical geography in Québec; the Laurentian axis has constituted one of the main projects in the field.¹⁴ The purpose of the project, directed by Serge Courville, Normand Séguin and Jean-

13. For an overview of historical geography in Québec, see Claude BELLAVANCE and Marc SAINT-HILAIRE, "Le temps et l'espace comme catégories d'analyse chez les historiens et les géographes québécois (1984-2002)," *Annales de Bretagne et des Pays de l'Ouest*, vol. 10, no. 4, 2003, pp. 13-53.

14. A general presentation of the project and initial findings are provided in Serge COURVILLE, Jean-Claude ROBERT and Normand SÉGUIN, *Le pays laurentien au XIX^e siècle, les morphologies de base*, Sainte-Foy, Les Presses de l'Université Laval, "Atlas historique du Québec," 1995.

Claude Robert, was to spatially explore the socio-economic development of the major population locus of Québec – that along the shores of the St. Lawrence River between Québec City and Montréal, a territory endowed with natural resources but shaped by human activity. This research focused on logging and farming, which formed the basis of industrial activity around which settlements developed, thus structuring the landscape, population movement and economy of the province.

Initiated in the wake of the historiographic controversy surrounding the agricultural crisis during the second third of the 19th century,¹⁵ this project provides considerable information on the conditions under which the ecumene expanded and, in so doing, contributes to undermining the arguments of proponents of the overpopulation of the

15. On this controversy, see Serge COURVILLE, “La crise agricole du Bas-Canada. Éléments d’une réflexion géographique. Première partie,” *Cahiers de géographie du Québec*, vol. 24, no. 62, 1980, pp. 193-224.

St. Lawrence Lowlands. The studies conducted as part of this project reveal, for example, changes in the conditions of Québec agriculture, which became specialized in the mid-19th century : grain production moved to the fringes of the back country, making way for food and feed production and thus providing for the development of commercial single-crop farming and livestock production. The studies also show the dynamic of the concentration and migration of logging as well as the progression of clearing. They provide a picture of the action society took on the territory over time, clearing forests, cultivating the land, creating transportation routes and harnessing rivers for industrial purposes.

By describing the commercial exchanges between frontier settlements, towns and cities in Québec and the United States, these studies pinpoint the processes underlying the integration of local economies. They discuss the centres of socio-economic development in their relationship with the hinterland that vitalized

them.¹⁶ They portray the conditions of shifting borders underlying the expansion of the exchange network and enabling commercial farmers to meet the regional, continental and international needs of an increasingly urbanized world. They provide a view of the city and country coming together in a system of two-way trade in which material circulated. The ecological costs and conditions of this material flow, however, would require thorough study.

Whether the work produced in this project can be labelled environmental history is not of concern. That issue was not on the agenda of these historical geographers. What is relevant is how their methods, approaches and answers elucidate the development and transformation of the landscape. Because the project brought together a large number of

16. Those familiar with the literature in environmental history will see a close link with the flagship work of William CRONON, *Nature's Metropolis. Chicago and the Great West*, New York, Norton, 1991.

researchers, it prompted numerous studies on the landscape and its representation, resources and their exploitation, population shifts in relation to the land, and exchange networks between urban areas and rural communities. Ultimately, elements of the environment were shown in their relationship with society instead of simply being presented as a backdrop for social and economic change.

The architects of this project produced a group of studies which appeared in two collections of Les Presses de l'Université Laval : *Atlas historique du Québec* and *Géographie historique*. Two of the studies appearing in *Géographie historique* warrant specific attention. The natural overlapping of historical geography and environmental history is most clearly and deliberately expressed in *Marshlands* by Matthew Hatvany.¹⁷ Focusing on the

17. Matthew HATVANY, *Marshlands : Four Centuries of Environmental Change on the Shores of the St. Lawrence*, Sainte-Foy, Les Presses de l'Université Laval, "Géographie historique," 2003.

construction of *aboiteaux* in the St. Lawrence estuary, Hatvany examines the dynamic of the relationship between settlers of the *Côte-du-Sud* and the land, as well as the ecological issues, potential and tensions created by the diking of the Kamouraska salt marshes. Emphasizing the contribution of local knowledge to an understanding of ecosystems and their transformation, his study concentrates on the material dimension of society's relationship with nature and the shaping of representations of the environment.

In addition to providing information on the settlement and improvement of Québec lands, historical geography strives to take representations of the land into account and to clarify the meaning of the relationship between social actors and space over time.¹⁸ In her work *Paysage, mythe et territorialité*, Linda

18. Linda VILLENEUVE, *Paysage, mythe et territorialité. Charlevoix au XIX^e siècle. Pour une nouvelle approche du paysage*, Sainte-Foy, Les Presses de l'Université Laval, "Géographie historique," 1999.

Villeneuve examines the effects an identity-based representation – resulting from the projection of imported ideologies – on the landscape. Her analysis of the changes in the Charlevoix landscape during the 19th century reveals a close association between the material forms and representations of the landscape, and the actual links between humans and the land. The wild and romantic nature of the landscape, people’s healthy and virtuous way of life, their religious fervour and their simplicity constitute the typical values and cultural features of French Canadians living in Charlevoix, as portrayed by nationalistic mythology. This work shows the discrepancy between the functions etched in the landscape and the material world that representations conceal, whether deliberately or not, and how the environment is thus infused ideologically in its material dimension.¹⁹

19. From a cultural history perspective, the study of the transformation of the landscape by Colin Coates is both

BUSINESS AND LABOUR HISTORY :
THE SOCIO-ECONOMICS
OF NATURAL RESOURCES

Just as Canadian historians have concentrated on staples, Québec historians have focused on the exploitation of natural resources. In fact, many refuse to grant any originality to environmental history because Québec historical works have dealt so intrinsically with this topic. While the preceding section indicates that natural resources were central to the inhabited and improved territory, this section will discuss studies in which geography is secondary to social and economic history

stimulating and relevant to environmental history (Colin COATES, *The Metamorphoses of Landscape and Community in early Quebec*, Montreal and Kingston, McGill-Queen's University Press, 2000). In this work, Coates examines the recreation of life and landscapes from England in the area around the Batiscan and Sainte-Anne rivers by the British immigrant population. The landscape is both an ecological region and the cultural moulding of a physical space.

studies, which highlight the world of enterprises and workers.²⁰

Forests constitute an excellent starting point, since they are at the root of the conservation movement in North America and are the subject of several works in environmental history.²¹ A striking fact in the history of Québec forests is the simultaneous transition from white pine harvesting and the lumber industry to spruce harvesting and the pulp and paper industry. Self-professed environmental historians – scholars like Peter Gillis, Thomas Roach and Michel Girard – based a portion of their work on institutions which, in Québec, oversaw this transition between the

20. The atlas *Le territoire* includes chapters on each of the natural resources discussed here. Each chapter ends with environmental considerations as yet to be treated historically (Claude BOUDREAU, Serge COURVILLE and Normand SÉGUIN [eds.], *Le territoire*, Sainte-Foy, Les Presses de l'Université Laval, "Atlas historique du Québec," 1997.)

21. To name only one and the first of its kind, Samuel P. HAYS, *Conservation and the Gospel of Efficiency*, Cambridge, Harvard University Press, 1959.

end of the 19th century and the middle of the 20th century.²² Picking up on and sometimes challenging the theses of Samuel P. Hays on the conservation movement and the central role of government expertise in its development, these historians placed little importance on the material basis of discourse on the depletion of wood resources.²³ Curiously enough, it was social historians who, without necessarily claiming to analyze the evolution of the interaction between society and the environment, explored the form and content of the forest and not only its discursive enactment. These historians include René Hardy

22. R. Peter GILLIS and Thomas R. ROACH, *Lost Initiatives. Canada's Forest Industries, Forest Policy and Forest Conservation*, New York, Greenwood Press, 1986 ; Michel F. GIRARD, *La forêt dénaturée. Les discours sur la conservation de la forêt québécoise au tournant du XX^e siècle*, Master's thesis, Department of History, University of Ottawa, 1988.

23. Michel GIRARD, "Conservation and the Gospel of Efficiency : un modèle de gestion de l'environnement venu d'Europe," *Histoire sociale/Social History*, vol. 33, no. 45, 1990, pp. 63-79.

and Normand Séguin, who questioned the repercussions of this transition on the development of forestry potential and on the vegetation cover, particularly with respect to the incidence of forest fires and insect infestations.²⁴ Hardy further developed this line of thinking in an article on representations of the forest in relation to the transformation of the vegetation cover. His acknowledgement of the economic, symbolic and ecological dimensions of the forest sets his contribution apart from those of recognized Canadian environmental historians.²⁵

Forest history also includes a social component, which historians have examined, taking a particular interest in workers and their exploitation. The above-mentioned

24. René HARDY and Normand SÉGUIN, *Forêt et société en Mauricie. La formation de la région de Trois-Rivières 1830-1930*, Montreal, Boréal, 1984, pp. 72-87.

25. René HARDY, "Exploitation forestière et environnement au Québec, 1850-1920," *Zeitschrift für Kanada-Studien*, vol. 27, no. 15, 1995, pp. 63-79.

study by Hardy and Séguin indicates that the development of the forest industry was the work of the conquering bourgeoisie. An economic resource, forests were also a lever for conquering society and space, including the rural Mauricie area.²⁶ The exploitation of natural resources and the use of human resources fundamental to forestry activities attracted the interest of an education historian, Jean-Pierre Charland, who worked specifically on technological changes affecting the production of pulp and paper.²⁷ These changes had a considerable impact on the extraction of raw materials, while being guided by the calculation of forestry potential. Charland mentions the environmental consequences of paper production. However, he

26. Jack Little provides similar data for part of the Eastern Townships on a related issue (Jack LITTLE, *Colonialism, Nationalism and Capitalism. The Upper St. Francis*, Montreal and Kingston, McGill-Queen's University Press, 1988).

27. Jean-Pierre CHARLAND, *Les pâtes et papiers au Québec 1880-1980. Technologies, travail et travailleurs*, Québec, Institut québécois de recherche sur la culture, 1990.

confines his study to the immediate plant area and does not discuss the impact of technological innovation on forestry potential, depletion of the resource or the transformation of the vegetation cover over time. Without expressing environmental history concerns *per se*, Guy Gaudreau recognizes the consequences of resource depletion on workers, forced to find and move to new sites around which hamlets develop.²⁸ It should be noted that Gaudreau produced very thorough studies of the data provided by scalers and published by the State.²⁹ Anyone interested in preparing forest profiles using official data should show equal methodological acumen.

Mining is important in the history of Québec because it opened frontiers in the

28. Guy GAUDREAU, "Exploitation des forêts publiques au Québec (1874-1905). Transition et nouvel essor," *Revue d'histoire de l'Amérique française*, vol. 42, no. 1, 1988, pp. 3-26.

29. Guy GAUDREAU, "L'État, le mesurage du bois et la promotion de l'industrie papetière," *Revue d'histoire de l'Amérique française*, vol. 43, no. 3, 1989, pp. 203-219.

northwest during the interwar period and on the North Shore after World War II ; it gave rise to a new socio-political elite during the ecclesiastical-political domination immediately following World War II. Labour historians have shown an interest in miners' struggles, their working conditions underground and their living conditions in the towns created to accommodate and mould new communities.³⁰ The considerable capital required for the extraction and primary processing of ore attracted the attention of business historians, who concentrated on a specific ore – particularly asbestos – or an entire sector in its relations with government.³¹ Despite adequate

30. For example, Guy BÉLANGER, "La grève de Murdochville (1957)," *Labour/Le Travailleur*, vol. 8-9, 1981, pp. 103-135 ; J. Charles ALLARD, Jean-Paul GOUPIL, O. J. CORMIER and Roland ALLARD, "Murdochville. Naissance d'une ville," *Gaspésie*, vol. 31, no. 2, 1993, pp. 6-21 ; Guy GAUDREAU, *L'histoire des mineurs du Nord ontarien et québécois*, Sillery, Septentrion, 2004.

31. Marc VALLIÈRES, *Des mines et des hommes. Histoire de l'industrie minière québécoise. Des origines au début des*

coverage of the social, economic and political dimensions of mining, history remains silent about the ways in which the industry has radically transformed the landscape, creating craters and mountains as well as toxic waste runoff and emanations from smelters.³² This impact on the environment is often accompanied by harmful effects on the health of workers and, to a lesser but real degree, on that of residents living near extraction and processing sites. These consequences, manifested over variable time scales, must be explored. Finally, there is the study on the Saint-Maurice iron works carried out by Parks Canada historians and René Hardy, who

années 1980, Québec, Publications du Québec, 1988 ; Pierre PAQUETTE, *Les mines du Québec 1867-1975. Une évaluation critique du mode historique d'industrialisation nationale*, Outremont, Carte Blanche, 2000 ; Robert ARMSTRONG, "The Asbestos Industry in Quebec 1878-1929," PhD thesis, Université Laval, 1978.

32. Richard V. FRANCAVIGLIA, *Hard Places. Reading the Landscape of America's Historic Mining Districts*, Iowa City, University of Iowa Press, 1991.

examined the variety of habitat types and the conditions of workers and craftspeople.³³ Although historians have taken a greater interest in the socio-cultural landscape than the environment, they have shown a definite awareness of the material dimension of the land and resources and their imprinting on the regional imaginary.

Hydroelectric power generation, like mining, is approached from the standpoint of government policy and its effect on the economic development of Québec and outlying areas.³⁴ The ecological dimensions of this major symbol of economic and social change in Québec are virtually unknown from a

33. René HARDY, *La sidérurgie dans le monde rural. Les hauts fourneaux du Québec au XIX^e siècle*, Québec, Les Presses de l'Université Laval, "Géographie historique," 1995.

34. In addition to the works cited above, see Clarence HOGUE, André BOLDUC and Daniel LAROCHE, *Québec, un siècle d'électricité*, Montreal, Libre Expression, 1979 ; Yves BÉLANGER and Robert COMEAU [eds.], *Hydro-Québec, autres temps, autres défis*, Québec, Presses de l'Université du Québec, 1995.

historical perspective. The studies by Claude Bellavance and David Massell on the Shawinigan Water and Power Corporation and the Quebec Development Company focus on businesses whose importance is assessed, to some degree, by the transformation of the territories they served.³⁵ Although very interested in the appropriation and exploitation of river water resources in Québec, these studies do not talk about the impact of hydroelectric projects on the ecosystems and organization of the territory. While they do discuss the conflicts regarding the allocation of resources and multiple use of waterways, they provide no information about the impact of new waterway flow regimes on neighbouring populations or about the transformation of watershed catchment basins and their integra-

35. David MASSELL, *Amassing Power. J. B. Duke and the Saguenay River 1897-1927*, Montreal and Kingston, McGill-Queen's University Press, 2000 ; Claude BELLAVANCE, *Shawinigan Water and Power 1898-1963. Formation et déclin d'un groupe industriel au Québec*, Montreal, Boréal, 1994.

tion with production facilities. The industrialization of rivers and the consequences thereof thus require study. An article by Bellavance does refer to the role of the conservation movement in establishing the Québec Streams Commission and a provincial policy targeting the rational use of water resources. It indicates how hydrological knowledge and the re-evaluation of power potential has led to a new mode of resource appropriation, and shows the ways in which the territory can be transformed through the construction of reservoirs and the regulation of streams.³⁶

36. Claude BELLAVANCE, "L'État, la "houille blanche" et le grand capital. L'aliénation des ressources hydrauliques du domaine public québécois au début du XX^e siècle," *Revue d'histoire de l'Amérique française*, vol. 51, no. 1, 1998, pp. 1-32. On a similar subject, see Jacinthe PLAMONDON, "Élaboration d'une perspective environnementale dans le secteur de l'hydroélectricité au Québec, 1890-1939," Master's thesis, Université du Québec à Trois-Rivières, 2000. See also Claude BELLAVANCE, "La puissance de l'eau," Claude BOUDREAU, Serge COURVILLE and Normand SÉGUIN [eds.], *Le territoire, op. cit.*, pp. 85-93 ; and "Réseaux, territoires et électricité. La

It is probably the history of agriculture that, strangely, provides us with the least information on the evolution of the relationship between society and nature, especially given the detailed attention that Québec rural history and the development of modern agriculture have received. This is doubly so when one considers the relationship between humans and the environment seems to be a very close one in agriculture, given the manipulation of soil, plants and animals, to the point where nature and culture merge. Historical works, long focused on the political and agricultural crisis of the 1830s, dwell on the intensity and efficiency of grain production, and the transition to dairy farming, with little consideration for any other farming activity. Once rural histories show that French

dynamique spatiale du processus d'électrification du Québec méridional," Serge COURVILLE and Normand SÉGUIN [eds.], *Espace et culture/Space and Culture*, Sainte-Foy, Les Presses de l'Université Laval, "Géographie historique," 1995, pp. 393-404.

Canadian farmers were neither better nor worse than their English Canadian counterparts,³⁷ being guided by the same economic rationality, they attempt to illustrate the modernity and efficiency of Québec agriculture.³⁸ While we now know a considerable amount about the ideology and business-mindedness of the socio-spatial class responsible for the growth of dairy farming, we remain unaware of the ecological conditions and consequences of that “great transformation,” be it on the composition of herds or the sanitary conditions of agro-food production in rural areas. As ridiculous as it might seem, cows are simply absent from the history of the dairy industry!³⁹ History is similarly silent

37. John McCALLUM, *Unequal Beginnings : Agricultural and Economic Development in Quebec and Ontario until 1870*, Toronto, University of Toronto Press, 1980.

38. See the collective work edited by Normand SÉGUIN [ed.], *Agriculture et colonisation au Québec. Aspects historiques*, Montreal, Boréal, 1980.

39. To be convinced, see Normand PERRON, “Genèse des activités laitières,” Normand SÉGUIN [ed.], *Agriculture et*

about the agricultural elements that were not in line with government policies accelerating the change.⁴⁰ It should, however, be mentioned that ethno-historian Paul-Louis Martin gave fruits a pivotal role in his recent historical study of agriculture ; his research deals with Euro-Canadians' adaptation of American fruit and the invasion of European species in America.⁴¹

Historians have also dealt with game resources, focusing on the social relations

colonisation au Québec. Aspects historiques, Montreal, Boréal Express, 1980, pp. 113-140. In a recent thesis published in the "Géographie historique," Perron provides information on these aspects of the change in agriculture in Québec (Normand PERRON, *L'État et le changement agricole dans Charlevoix, 1850-1950*, Sainte-Foy, Les Presses de l'Université Laval, "Géographie historique," 2003).

40. Similarly, although farming and logging serve as a paradigm for a major part of rural history, the maintenance of wood lots on farms is an economic and aesthetic phenomenon oddly unknown to us.

41. Paul-Louis MARTIN, *Les fruits du Québec*, Sillery, Septentrion, 2002.

underlying the exploitation of wildlife and humans. Their studies in this respect point up the privileges of the urban Anglo-Saxon affluent classes who exercised a territorial and cultural monopoly on game resources in outlying areas, primarily through their hunting and fishing clubs, sanctioned by government authorities who considered them a guarantee of conservation.⁴² While the historiography clearly portrays the unequal access to hunting grounds and fishing rivers, Paul-Louis Martin distinguishes himself again through his approach.⁴³ He brings the evolution of fauna and flora into the transformation of hunting practices and the changing meanings that hunters attribute to species over time. His work parallels that of environmental

42. Donald GUAY, *Introduction à l'histoire des sports au Québec*, Montreal, VLB éditeur, 1987. See also Sylvain GINGRAS, *A Century of Sport. Hunting and Fishing in Québec*, St-Raymond, Éditions Rapides blancs, 1994.

43. Paul-Louis MARTIN, *La chasse au Québec*, Montreal, Boréal, 1990.

historians in Canada and the United States, whose studies on natural parks discuss the appropriation of ecological elements but deliberately exclude people, be they Aborigines, rural dwellers or immigrants.⁴⁴ These studies, which also touch on ecotourism (hunting parties certainly being one of the oldest forms), enumerate acts of resistance and “weapons of the weak” such as arson, poaching, illegal cutting and squatting.⁴⁵

Confronted with foreign capital intended to deprive them of their resources, economically disadvantaged social actors are victims

44. Mark SPENCE, *Dispossessing the Wilderness. Indian Removal and the Making of the National Parks*, New York, Oxford University Press, 1999 ; Karl JACOBY, *Crimes Against Nature. Squatters, Poachers, and the Hidden History of American Conservation*, Los Angeles, University of California Press, 2001 ; Alan MACEACHERN, *Natural Selections : National Parks in Atlantic Canada, 1935-1970*, Montreal and Kingston, McGill-Queen's University Press, 2001.

45. Based on James C. SCOTT, *Weapons of the Weak. Everyday Forms of Peasant Resistance*, New Haven/London, Yale University Press, 1985.

of environmental injustice on two levels : they are dispossessed both of the fruits of their labour and the wealth of their land. Although focused on the exploitation or preservation of the environment, studies of the socio-economics of natural resources nonetheless reveal inequalities and struggles that have an impact on the transformation of the environment and its characteristics.

URBAN STUDIES : PUBLIC HEALTH AND
THE BUILT ENVIRONMENT OF THE CITY

The urban environment has long been the poor relative of environmental history, which is spontaneously associated with the wilderness. Technology historians were the first ones to emphasize the relevance of their work concerning urban infrastructures ; some of them picked up on topics stressed by environmentalists such as industrial pollution, waste management, and water and atmospheric

contamination.⁴⁶ These issues go back to the struggle of progressives and reformers for a healthy environment and their fight against the ills of a corrupt, industrial world plagued by rampant capitalism. Urban historians then came to emphasize the specificity of their subject as being the built environment. When we add to that the energy and land issues posed by the sprawl of cities and the growth of the suburbs, we have all the ingredients to make urban studies one of the most stimulating points of convergence in environmental history.

Approached from this perspective, the Québec urban environment has been the subject of studies that provide insight into the

46. Joel TARR, *Search for the Ultimate Sink. Urban Pollution in Historical Perspective*, Akron, University of Akron Press, 1996 ; Martin MELOSI, *The Sanitary City. Urban Infrastructure in America from Colonial Times to the Present*, Baltimore, Johns Hopkins University Press, 2000 and "The Place of the City in Environmental History," *Environmental History Review*, vol. 17, no. 1, 1993, pp. 1-23.

relationship between city dwellers and their environment.⁴⁷ Research on infrastructures has gotten off to a particularly good start and offers information on the shaping of the urban environment and on public health – in the case of infrastructures such as water and sewer systems – as a telling sign of the environment of city dwellers and their socio-economic conditions.

Building Canada : A History of Public Works, edited by Norman Ball, provides a comprehensive picture of infrastructure works from the standpoint of the history of technology.⁴⁸ It examines public works and the materials used, and takes into account land appropriation in the urban environment for the purpose of increasing economic efficiency. These facilities, it should be mentioned,

47. Claire Poitras, "L'histoire urbaine environnementale au Québec. Un domaine de recherche en emergence," *Globe*, vol. 9, no. 1 (2006), p. 93-111.

48. Norman BALL [ed.], *Building Canada : A History of Public Works*, Montreal, Boréal, 1988.

partially determine the future organization of cities and their economic activity. Specific studies on electricity, public transportation and telephone service have been published recently; they include aesthetic considerations on the transformation of the urban environment with respect to the architecture of the buildings that house the infrastructures.⁴⁹

The studies carried out on the “conquest of water” provide particularly relevant information for the analysis of the changing rela-

49. Claire POITRAS, *La cité au bout du fil*, Montreal, Presses de l'Université de Montréal, 2000 ; Denis VEILLEUX, “Buses, Tramways, and Monopolies. The Introduction of Motor Vehicles into Montreal's Public Transportation Network,” *Michigan Historical Review*, vol. 22, 1996, pp. 103-126 ; Claude BELLAVANCE and Paul-André LINTEAU, “La diffusion de l'électricité à Montréal au début du XX^e siècle,” Horacio CAPEL and Paul-André LINTEAU [eds.], *Barcelona-Montréal. Desarrollo urbano comparado/Développement urbain comparé*, Barcelone, Publications de la Universitat de Barcelona, 1998, pp. 238-258 ; Christopher ARMSTRONG et H.V. NELLES, *Monopoly's Moment. The Organization and Regulation of Canadian Utilities, 1830-1930*, Toronto, University of Toronto Press, 1986.

tions between society and the environment. They show how the control of water was necessary to the free circulation of individuals and goods, and somewhat determined the routes of exchange in the developing city, ultimately structuring the relationship between city dwellers and their built environment (including roads, water systems and buildings).⁵⁰ These studies also provide insight into the coexistence between humans and microbes, as well as the constant efforts of the former to eliminate the latter or keep them at a distance. The link between environmental history and the history of health evolved around epidemics, approached from an angle other than the microbial invasion of America by European carriers.⁵¹ In the case of cities undergoing urbanization and industrialization,

50. Dany FOUGERES, *Du privé au public. L'approvisionnement en eau à Montréal*, Sillery, Septentrion, 2004.

51. Alfred CROSBY, *Ecological Imperialism. The Biological Expansion of Europe 900-1900*, Cambridge, Cambridge University Press, 1986.

with poor or non-existent infrastructures, the control of water distribution, consumption and disposal was crucial to public health. The implementation of the water and sewer systems (and food cleaning and inspection services) became a turning point in the interaction between society and the city environment. The management of health conditions by the medical elite and political authorities thus provides us with information on the transformation of the urban environment spurred by microbial proliferation; it also reveals which conditions for urban environmental change result from the efforts of elites and governments to control the spread of epidemics and to prevent their outbreak.⁵²

52. Denis GOULET, "Des bureaux d'hygiène municipaux aux unités sanitaires. Le Conseil d'hygiène de la province de Québec et la structuration d'un système de santé publique, 1886-1926," *Revue d'histoire de l'Amérique française*, vol. 49, no. 4, Spring 1996, pp. 496-520; François GUÉRARD, "La santé publique dans deux villes du Québec de 1887 à 1939 :

While urban history, the history of health and environmental history converge in this study of infrastructures to reveal the technological and ecological dimensions of epidemics, other works enable us to understand the causes of “inequalities in the face of death,” where exposure to urban living conditions conducive to illness and death depend on class and race. This is the case of working and immigrant families whose sanitary conditions are studied in historical demographics by people like Sherry Olson and Patricia Thornton, as well as François Guérard.⁵³ Rooted in

Trois-Rivières et Shawinigan,” doctoral thesis, Université du Québec à Montréal, 1993 ; Claudine DESCHÊNES, “Santé publique et organisation de la profession médicale au Québec 1870-1918,” *Revue d’histoire de l’Amérique française* vol. 35 no. 3, December 1981, pp. 355-375 ; Martin TÊTREAU, “Les maladies de la misère. Aspects de la santé publique à Montréal 1880-1994,” *Revue d’histoire de l’Amérique française*, vol. 36, no. 4, 1983, pp. 507-526.

53. François GUÉRARD, “L’hygiène publique et le recul de la mortalité infantile. Trois-Rivières de 1895 à 1939,” *Cahiers québécois de démographie*, vol. 30, no. 2, 2001, pp. 231-259 ;

adverse socio-economic conditions, these environmental inequalities have several causes which need to be differentiated ; apart from the negligence of public authorities to provide adequate infrastructures, the role of industrial facilities must be examined in the environmental contamination of working class neighbours.⁵⁴ A study of inequalities also offers a perspective for broaching the questions of urban sprawl and of suburbs located in areas at risk.⁵⁵

The experience of nature in the city must also be considered in this survey of urban

Patricia THORNTON and Sherry OLSON, "A Deadly Discrimination among Montreal Infants, 1860-1900," *Continuity and Change*, vol. 16, no. 1, 2001, pp. 95-135.

54. Andrew HURLEY, *Environmental Inequalities. Class, Race and Industrial Pollution in Gary, Indiana, 1945-1980*, Chapel Hill, University of North Carolina Press, 1999 ; Martin MELOSI, "Equity, Eco-racism and Environmental History," *Environmental History Review*, vol., 19 no. 3, Fall 1995, pp. 1-16.

55. On the dangers in marginal areas, see Ted STEINBERG, *Acts of God. The Unnatural History of Natural Disaster in America*, New York, Oxford University Press, 2000.

studies. Parks and the recreational activities of residents appear at the crossroads of municipal infrastructures and public health. Parks are usually green spaces whose symbolic value is intended to compensate for nature removed from the urban environment, while recreational activities are often conceived by medical health officers to improve the health of people subjected to an environment polluted by industry and dominated by concrete. Research on bathhouses and suburban resorts reveal links between nature and the body.⁵⁶ The study of the suburbs, havens of peace marred by pesticide-soaked lawns, the destruction

56. Michèle DAGENAIS, "Fuir la ville. Villégiature et villégiateurs dans la région de Montréal, 1890-1940," *Revue d'histoire de l'Amérique française*, vol. 58, no. 3, 2005, pp. 315-346. See also Diane SAINT-LAURENT, "Approches biogéographiques de la nature en ville. Parcs, espaces verts et friches," *Cahiers de géographie du Québec*, vol. 45, no. 122, 2000, pp. 147-166 ; Gilles SÉNÉCAL and Diane SAINT-LAURENT, "Espaces libres et enjeux écologiques. Deux récits du développement urbain à Montréal," *Recherches sociographiques*, vol. 40, no. 1, 1999, pp. 33-54.

of agricultural lands and wetlands, and stressful, polluting highways, point out the paradoxes of nature far removed from the wilderness and of an environment as artificial as that of the city.⁵⁷

ENVIRONMENTAL SCIENCES :
AN ECOLOGICAL HISTORY OF QUÉBEC

Well before the advent of evolutionary biology, the natural sciences took a diachronic look at their subject, identifying changes in structures and suggesting mechanisms to explain them. In its early days, scientific ecology adopted a similar viewpoint to explain successions in vegetation communities. Ecological change over time was thus a

57. Jean-Pierre COLLIN and Claire POITRAS, "La fabrication d'un espace suburbain. La Rive-Sud de Montréal," *Recherches sociographiques*, vol. 43, no. 2, 2002, pp. 275-310. On suburban sprawl in the United States, see Adams ROME, *The Bulldozer in the Countryside. Suburban Sprawl and the Rise of American Environmentalism*, Cambridge, Cambridge University Press, 2001.

component of scientific studies, which provided a non-narrative history of the environment and its human and non-human actors. Specialties such as palynology and dendrochronology and subjects like paleo-floods and paleo-fires have grown in number in the past few decades and form part of a new type of historicization of nature. Natural scientists contribute to research in environmental history, as mentioned earlier in this article with reference to Europeans. Many of them are interested specifically in the man-induced causes of changes in the ecosystem, even when such causes are supposedly natural, such as climatic events. They go so far as to consult archives, a method generally associated with the work of historians. It thus seems appropriate to complete this survey by calling particular attention to the contribution of forest ecologists, earth scientists and limnologists.

Reconstructions of two major forest ecosystem disruptions – fires and insect infestations – are of particular interest because such

natural phenomena are often directly or indirectly caused by human action. While ecologists strive to determine where responsibilities lie, the multifactorial and diachronic analyses they conduct of these events are of primary importance. The history of fires in Abitibi, in northwestern Québec, is the subject of several studies in which researchers attempt to describe the natural fire regime so that they can develop forest management scenarios based on the natural disturbance regime.⁵⁸

58. Daniel J. GRENIER *et al.*, "Fire Frequency for the Transitional Mixedwood Forest of Timiskaming, Quebec, Canada," *Canadian Journal of Forestry Research*, vol. 35, 2005, pp. 656-666 ; Daniel LESIEUR *et al.*, "Fire Frequency and Vegetation Dynamics for the South-central Boreal Forest of Quebec, Canada," *Canadian Journal of Forestry Research*, vol. 32, 2002, pp. 1996-2009 ; Daniel LESIEUR, "Reconstitution historique des feux et de la dynamique forestière dans le secteur du réservoir Gouin, Québec," Master's thesis, Université du Québec à Montréal, 2000 ; Hubert MORIN, "Dynamics of Balsam Fir Forests in Relation to Spruce Budworm Outbreaks in the Boreal Zone, Québec," *Canadian Journal of Forestry Research*, vol. 24, no. 4, April 1994, pp. 730-741 ; Y. BERGERON and S. ARCHAMBAULT, "Decreasing Frequency of Forest

They reconstruct the history of human occupation to establish the effects of colonization and climate change throughout the cycles and to assess the impact of man-induced disruptions (including forest fire control) on the fire regime and regional forest vegetation. While these studies do not provide us with information on the perception of the phenomena studied,⁵⁹ they do indicate their frequency and extent ; they also discuss the role of weather conditions in the outbreak of fires and pave the way for an analysis of the relations between the material and intellectual dimensions of nature.

Insect infestations constitute another major disturbance of forests which entomologists

Fires in the Southern Boreal Zone of Québec and its Relation to Global Warming since the End of the "Little Ice Age," *The Holocene*, vol. 3, 1993, pp. 255-259.

59. As Stephen J. PYNE does in his works (see *Fire in America. A Cultural History of Wildland and Rural Fire*, Princeton, Princeton University Press, 1982 ; *World Fire. The Culture of Fire on Earth*, Seattle, University of Washington Press, 1995).

reconstruct over time. Establishing infestation zones and studying the spread of harmful insect populations have been facilitated since the introduction of the Canadian Forest Insect and Disease Survey in 1939. Entomologists use this tool to predict infestations and carry out analyses in population ecology, particularly with respect to the extent of infestations, predispositions of forests and climatic factors triggering infestation. Insects that have the most serious economic impact are the subjects of such reconstructions. The spruce budworm is a case in point ; its movement has been mapped in Québec in minute detail.⁶⁰ Entomologists began studying the

60. J. R. BLAIS, "Trends in the Frequency, Extent and Severity of Spruce Budworm Outbreaks in Eastern Canada," *Canadian Journal of Forestry Research*, vol. 13, no. 4, August 1983, pp. 539-547 ; Hubert MORIN, Danielle MORIN and Yves BERGERON, "Chronology of Spruce Budworm Outbreaks in the Lake Duparquet Region, Abitibi, Quebec," *Canadian Journal of Forestry Research*, vol. 23, no. 8, August 1993, pp. 1497-1506 ; Yan BOULANGER and Dominique ARSENAULT, "Spruce Budworm Outbreaks in Eastern Quebec over the

infestation cycle to detect the role of human factors likely to cause such outbreaks, because of their impact on forest conditions. Researchers have established, through dendrochronology, the infestation cycles of the spruce budworm since the late 18th century, striving to see how the change in the composition of the vegetation cover caused by successive forest industries has accelerated and intensified the destructive cycles of the insect.

Québec waterways have also been the subject of historical reconstructions. The St. Lawrence River in particular gave rise to a major interdisciplinary research initiative.⁶¹ Environment Canada researchers – a historian and geologist specializing respectively in land-use planning and fluvial modelling – reconstructed the bed of the St. Lawrence River using maps prepared by 19th century hydrographers

Last 450 Years,” *Canadian Journal of Forest Research*, vol. 34, 2004, pp. 1035-1043.

61. Richard CARIGNAN, “Le Lac Saint-Pierre en péril,” *Québec Science*, May 2004, pp. 20-27.

and contracts detailing dredging sites and volumes removed.⁶² The shallowness of Lac Saint-Pierre, upstream of Trois-Rivières, prevented vessels from reaching Montréal, unless craft capable of navigating shallow waters were used. The British undertook dredging work in the first half of the 19th century. Successive waves of dredging work, in 1844, 1865, 1882, 1888 and 1907, continually widened the channel to meet technological changes in St. Lawrence River shipping and the demands of merchants and ship owners. This reconstruction provides a picture of the changes in the hydrodynamics and ecological functions not only of the river, but also of its tributaries, their shores and their deltas. The channel would explain, for example, the origin of a species of fish on the south shore

62. Jean MORIN and Jean-Philippe CÔTÉ, "Modifications anthropiques sur 150 ans au Lac Saint-Pierre. Une fenêtre sur les transformations de l'écosystème du Saint-Laurent," *Vertig-O. La revue des sciences de l'environnement*, vol. 4, no. 3, 2003, pp. 1-10.

related to a similar species on the north shore, but unable to reproduce with it. The fluvial modelling prepared on the basis of this research will be used to oversee the restoration of the main ecological functions of the St. Lawrence.

In these chronological reconstructions of environments and natural phenomena, environmental disturbances are often a sign of human activity. Present discussions on climate change will certainly encourage scientists to use historical methods in striving to understand the role of natural and man-induced factors in shaping the environment.⁶³

63. A geographer is already working on a study of floods in the Saint-François river basin. Diane SAINT-LAURENT *et al.*, "Chronological Reconstitution of Floods of the Saint-François Drainage Basin, Québec, Canada," *3rd Canadian Conference on Geotechniques and Natural Hazard*, 2003, pp. 89-93.

TWO PROPOSALS
AND ONE COMMENT FOR THINKING
ABOUT THE ENVIRONMENTAL HISTORY
OF QUÉBEC

In light of this survey, can it be affirmed that an environmental history of Québec actually exists ? When we consider the adversity of the host environment and the biotic submission of indigenous populations, both human and non-human ; the participation of the French colony in the triangle of primary resource exchange and the continental socio-economic integration of Québec ; the epidemics that have struck indigenous communities and the unhealthiness of cities undergoing industrialization and urbanization, we can affirm that the geographic condition of Québec and the involvement of its society in the great transformations of the modern world have effectively contributed to positioning the nation and its territory in world environmental history.

While Québec studies have regularly dealt with the history of Québec's environment, our answer to the question is qualified. The works surveyed here from various disciplines did not systematically set out to study the relationship between society and the environment, so it would be dishonest to view them in a light other than that of the specific problematics explored. What we have wanted to call attention to is the historiography of Québec environmental history. The knowledge available for a history of the interaction between society and the environment is rich – rich in material, sources, methods and questions to be examined in greater depth. This richness certainly stems from the involvement of researchers from different disciplines and fields of study who have all worked on Québec, its territory and its peoples. While taking into account the approaches and findings of their research, we must acknowledge the interdisciplinary nature of it. These studies, which benefit from a combination of disciplinary

approaches – in history, geography, urban studies and demographics, for example – offer a meeting ground for the integration of knowledge on ecological processes and the shaping of new subjects for an environment history of Québec. More importantly, environmental history can contribute to this richness, and I would like to wind up by discussing a few of areas of world environmental history and suggesting avenues for research for understanding the evolution of the interaction between society and the environment in Québec.

The first area involves the **relationship between the body and the environment.**⁶⁴

64. Gregg MITMANN, Michelle MURPHY and Christopher SELLERS [eds.], "Landscapes of Exposure. Knowledge and Illness in Modern Environments," *Osiris*, no. 19, Chicago, University of Chicago Press, 2004 ; Christine MEISNER ROSEN and Christopher C. SELLERS, "The Nature of the Firm. Towards an Ecocultural History of Business," *Business History Review*, vol. 73, no. 4, 1999, pp. 577-600. It would also be interesting to see concurrent representations of health and the environment by individuals, as in Conevery Bolton VALENCIUS, *The*

Consider the premise of the book by Rachel Carson, *Silent Spring*,⁶⁵ and its impact on the rise of contemporary environmentalism : by comparing the health of the planet with that of the human being, and discussing the impact of toxic substances on the metabolic patterns of ecological disturbances resulting from the presence of such substances in the environment, *Silent Spring* was a major catalyst in raising environmental awareness in the United States.⁶⁶ Environmental historians can not only expose unthought-of sources of power through their study of nature, but they can also reveal relationships of domination –

Health of the Country. How American Settlers Understood Themselves and their Land, New York, Basic Books, 2002.

65. Rachel CARSON, *Silent Spring*, Boston, Houghton Mifflin, 1962.

66. Paolo PALLADINO, "On "environmentalism". The Origins of the Debates over Policy for Pest-Control Research in America, 1960-1975," Michael SHORTLAND [ed.], *Science and Nature. Essays in the History of the Environmental Sciences*, Stratford-in-the-Vale, British Society for the History of Science, 1994, pp. 181-212.

just as crucial as those stemming from the ownership of means of production – by investigating the actions and reaction of the human body to environmental changes. We have mentioned instances of environmental inequalities to which certain fringes of the population are subjected. While some people are denied access to resources or territories, it is the ones deprived of healthy living conditions that are of interest to us, be they in the work environment, at home or in the vicinity of extraction, production or consumption sites. It is hoped that this research topic will be pursued beyond the realm of urban studies. The study of the relationship between the body and the environment would provide an approach for the history of enterprises and of workers exposed to polluting processes at or in the vicinity of plants generating pollution and environmental inequalities.

This area of research leads us to consider the most intimate relationships between humans and their environment, and follow

Alain Corbin's lead in his history of the senses.⁶⁷ Smell, hearing, taste and touch would be studied in addition to sight – ordinarily emphasized by historians – in reconstructing the phenomenological experience of actors in their environment.⁶⁸ The body has a history, and the study of that history would

67. Alain CORBIN, *Le miasme et la jonquille. L'odorat et l'imaginaire social, XVIII^e-XIX^e siècles*, Paris, Aubier, 1982 ; *Les cloches de la terre. Paysage sonore et culture sensible dans les campagnes au XIX^e siècle*, Paris, Albin Michel, 1994 ; "Pour une histoire de la sensibilité au temps qu'il fait," *Le ciel et la mer*, Paris, Bayard, 2005, pp. 1-46 ; and Alain CORBIN *et al.* [[eds.]], *Histoire du corps*, Paris, Seuil, 2005-2006, 3 volumes.

68. Georges VIGARELLO, *Le propre et le sale. L'hygiène du corps depuis le Moyen Âge*, Paris, Seuil, 1985 ; Robert DULAU and Jean-Robert PITTE, *Géographie des odeurs*, Paris/Montreal, L'Harmattan, 1998 ; Christopher SELLERS, "Thoreau's Body. Towards an Embodied Environmental History," *Environmental History* vol. 4, October 1999, pp. 486-515 ; Mark M. SMITH, "Making sense of social history," *Journal of Social History* vol. 37, Fall 2003, pp. 165-179 ; Joy PARR, "Smells like. Sources of Uncertainty in the History of the Great Lakes Environment," *Environmental History*, vol. 11, April 2006, pp. 269-299.

reveal relations with the environment – particularly pleasure and stress – other than those quantified by the natural and biomedical sciences. Take, for example, the olfactory experience of the lawyer from the Eastern Townships who was so disturbed by the putrid smells emanating from a Windsor Mills paper plant that he issued an injunction, shutting down the plant in the middle of an economic crisis.⁶⁹ The sense experience of the body, so significantly captured by anthropologists, remains an area neglected by historians.⁷⁰ Yet its study would give rise to insight on the meanings societies attribute to the quality of their environment, their perception of risk and their uncertainties about environmental changes which often accompany social chan-

69. *Canada Paper Company c. Brown*, (1922) 63 R.C.S. 243.

70. As Joy PARR, among others, emphasizes in “Notes for a More Sensuous History of Twentieth Century Canada. The Timely, the Tacit and the Material Body,” *Canadian Historical Review*, vol. 82, 2001, pp. 720-745.

ges.⁷¹ It would also provide avenues for examining the increasingly pervasive nature of pollution – from the perception and representation of stressors, and the rise in environmental concerns and intolerance among local communities, to attempts by health, economic and political authorities to manage such perceptions.⁷²

Consumption is a second area to be examined, as it would unite the topics treated in the studies surveyed here, such as the links between extraction and processing of resources, industrialization and urbanization, production and pollution, as well as rural areas and urban centres.⁷³ More specifically, it

71. Estelle BARET-BOURGOIN, *La ville industrielle et ses poisons. Les mutations des sensibilités aux nuisances et pollutions industrielles à Grenoble 1810-1914*, Grenoble, Presses universitaires de Grenoble, 2005.

72. This is in reference to the societal odour-control initiative of the elites studied by CORBIN in *Le miasme et la jonquille*.

73. Matthew W. KINGLE, "Spaces of Consumption in Environmental History," *History and Theory*, vol. 42, no. 1, 2003, pp. 94-110.

would include the networks of exchange that are formed and their ecological footprints. A series of works in urban environmental history have borrowed the concept of metabolism from scientific ecology (which borrowed it from physiology) to study the city and delineate its material and energy flow in understanding the ecological relations between city dwellers and their land.⁷⁴ These relations are created through the importing of foodstuffs in particular, but also the goods

74. The concept was probably first mentioned by A. WOLMAN in "The Metabolism of Cities," *Scientific American*, vol. 213, no. 3, 1965, pp. 179-190. One of the first allusions to it in urban environmental history can be found in the article by Joel TARR, "The Metabolism of the Industrial City. The Case of Pittsburgh," *Journal of Urban History*, vol. 28, 2002, pp. 511-545. Sabine BARLES provides a thoughtful application of the concept in *L'invention des déchets urbains. France 1790-1970*, Seyssel, Champs Vallon, 2005. See also Verena WINIWARTER, "Where Did All the Waters Go ? The Introduction of Sewage Systems in Urban Settlements," Christoph BERNHARDT [[ed.]], *Environmental Problems in European Cities in the 19th and 20th Century*, Münster/New York, Waxmann, 2000, pp. 106-120.

that supply factories in the city, and the domestic and industrial waste – “excreta” as Sabine Barles calls it in her study of urban waste in France – used to fertilize farmers’ fields; they are also created through the circulation of a population that migrates and transmigrates. These exchanges transform the landscape, visibly facilitating the transportation of goods and subtly accelerating the circulation of elements, such as carbon and nitrogen, and components such as water, thus altering the soil, water system and atmosphere that the city and country share. Finally, this metabolism, understood here in terms of exchange, undergoes radical mutations with the intensification of industrialization, the transformation of industrial processes and the introduction of synthetic components that contaminate the “excreta,” preventing it from being integrated into the exchange cycles.⁷⁵

75. Sabine BARLES, “A Metabolic Approach to the City. Nineteenth and Twentieth Century Paris,” Dieter SCHOTT,

The study of consumption from the angle of urban metabolism provides us with tools to examine not only the phenomenon of pollution – its manifestations and transformations in the context of industrial revolutions – but also the ecological dimensions of urbanization and industrialization processes: the study of class struggles during industrial revolutions should not overlook the fact that the social conflicts surrounding the control and exploitation of nature were also crucial to the emergence of industrial capitalism.

There is another area in which the environmental history of consumption would shed valuable light – that of Quebec's continental socio-economic integration. While we understand the effects of American investment – and the integration of agroforest production into the main North American

Bill LUCKIN and Geneviève MASSARD-GUILBAUD [eds.], *Resources of the City. Contributions to an Environmental History of Modern Europe*, Aldershot, Ashgate, 2005, pp. 28-47.

markets – on the economic development of Québec, our knowledge of the environmental impact of continental integration is decidedly incomplete. This area includes issues that are all the more important to elucidate because the introduction of agriculture, forest and other products in international markets has created a distance between production and consumption, thus making the ecological costs of economic activity invisible.⁷⁶ On the one hand, investment in the mining, forest and energy industries has accelerated the penetration of territories and the extraction of natural resources, with little consideration for the ability of resources to regenerate. On the other hand, access to local and foreign

76. William CRONON, *Nature's Metropolis* ; Ted STEINBERG, *Down to Earth. Nature's Role in American History*, Oxford, Oxford University Press, 2002 ; Richard TUCKER, *Insatiable Appetite. The United States and the Ecological Degradation of the Tropical World*, Berkeley, University of California Press, 2000.

markets has encouraged the specialization of agriculture and silviculture, which has been accompanied by insect infestations, disease and soil depletion. In both cases, consumers have become increasingly distant from resource extraction and processing sites and from the ecological consequences of those practices on the environment. How, during the 20th century is this distance overcome to bring production and consumption closer together and make the ecological effects of economic activities visible? What mechanisms are involved in getting local ecological problems – from debates on the protection of migratory birds and the invasion of harmful foreign insects in the 19th century to controversy concerning cross-border atmospheric pollution in the late 20th century – on the international agenda? Have the frequency and extent of environmental changes increased at the same time as continental integration? Answering these questions will shed light on the ecological consequences of North

American economic integration and identify the processes underlying the globalization of environmental problems.

My final comments stem from the two research areas mentioned above. From bodily sensibility to social body, from networks of exchange between city and country to the continental socio-economic integration of Québec, **questions of scale** constitute a methodological issue on which our thinking about the environmental history of Québec can be based. Of course, Québec studies seem to have an object that is clearly defined and delimited by borders ; localized case studies enable researchers to avoid venturing beyond Québec's borders, unless they embark on comparative studies. Two trends in environmental history – reminiscent of the essential tension between the particular and the universal in science – nonetheless require us to rethink the natural character of this object.

The first trend stems from criticism of the nation scale and the limitations the nation-

state imposes on historians.⁷⁷ Those who are part of this trend allude to the cross-border nature of ecological phenomena such as pollution in laying claim to a transnational history, without realizing that they are thus espousing an ideology – that of globalization – which is as valid as that of the nation-state, the shortcomings of which they readily denounce. In so doing, they risk forgetting the institutional, cultural and socio-economic foundations of the biogeophysical environment. Think of the role of government agencies – unquestionably national in nature – in defining and regulating means of exploitation of natural resources and the resultant shaping of the landscape. It is not appropriate to select

77. Richard WHITE, "The Nationalization of Nature," *Journal of American History*, vol. 86, no. 3, 1999, pp. 976-986; I. G. SIMMONS, "The World Scale," *Environment and History*, vol. 10, no. 1, 2004, pp. 531-536; Shepard KRECH III, J. R. MCNEILL and Carolyn MERCHANT, "Introduction," *The Encyclopedia of World Environmental History*, vol. 1, New York, Routledge, 2003, p. IX.

national borders automatically since, as we have shown elsewhere, nature is also involved in the founding discourses of the nation and the identity of its population and its territory.⁷⁸ We should also be leery of those who strive to show the inescapable character therein of relying specifically on environmental attributes that would reflect the natural character of the nation. That being said, it is not appropriate to make the global scale a methodological *a priori* and eliminate all critical reflection on the spatial dimension of the interaction between society and the environment. The planet is no more a natural scale for the work of historians than the nation.

78. Stéphane CASTONGUAY, "Naturalizing Federalism. Insect Outbreaks and the Centralization of Entomological Research in Canada, 1885-1914," *Canadian Historical Review*, vol. 75, no. 1, 2004, pp. 1-34 and "Sortir l'histoire des sciences et des techniques de leur contexte national : limites et défis du comparatisme," *Scientia Canadiensis*, vol. 28, 2005, pp. 39-50.

The second trend involves basing studies in environmental history on the bioregion.⁷⁹ While such an approach seems appealing – it is a scale largely used in the study of ecological phenomena – we must question the relevance of adopting this concept and its application without recognizing that the bioregion is not a given and that its delimitation is both cultural and natural. It, too, must be subject to critical analysis in order to determine how it stems in some cases from its biogeophysical elements, in others from its socio-economic elements and in yet others, from its socio-cultural representations. The selection of scale requires conscious delimitation of the space under study : Canada with its plant inspection policies and inclusion in international trade networks for agricultural commodities is probably a more natural environment than part of eastern North America, chosen as a

79. Neil S. FORKEY, *op. cit.*; Dan FLORES, “Place. An Argument for Bioregional History,” *Environmental History Review*, vol. 18, no. 4, 1994, pp. 1-19.

scale supposedly on the basis of its bioregional character. The human activity that has etched the biogeophysical characteristics into a territory forming a bioregion must be determined and indicated. Otherwise, the “bio” in “bioregion” will only bear the stamp of scientists who have studied the soil, fauna, flora and any other abiotic element.

These two scales involve questioning the area of analysis preferred by area studies. As part of this field in the social sciences, Québec studies cannot be indifferent to these debates which fuel environmental history. In the same way that the global scale must be subject to critical evaluation – at least the ideological basis for its deployment in the scientific field – the bioregional scale does not constitute a given. Granting ontological status to the bioregion, nation or world would be to overlook how these scales result from the action of human beings in the face of environmental constraints and potential, and how the interaction between the environment and

society shape them. Overall, the relevant scale will be part of the problematic that shapes the object of research.

