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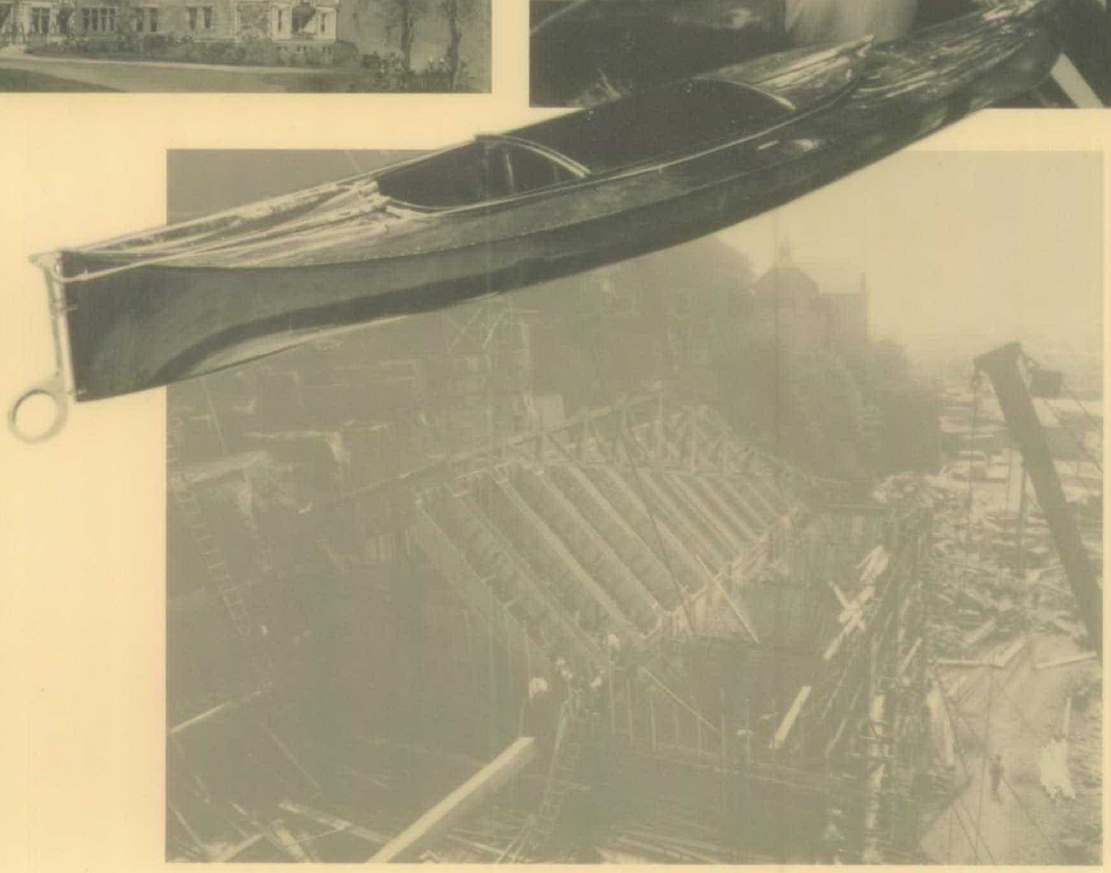
Material History Review

FALL 1994 / AUTOMNE 1994

Revue d'histoire de la culture matérielle



NATIONAL MUSEUM OF SCIENCE AND TECHNOLOGY

MUSÉE NATIONAL DES SCIENCES ET DE LA TECHNOLOGIE

NATIONAL MUSEUM OF SCIENCE & TECHNOLOGY
MUSÉE NATIONAL SCIENCES & TECHNOLOGIE

ISSN 1183-1073

Editorial Board / Comité de rédaction

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Editorial

Éditorial

Among the many offerings in the last issue of the *Material History Review (MHR* 39), I found a few threads that, on inspection, all lead me back to a common point of reflection. First there was the editorial addressing the role of the curator in producing or fostering material history research; as a curator, this is a subject close to my heart. Next, Adrienne Hood's review of the 1993 Winterthur Annual Conference, "Material Culture, the Shape of the Field," brought focus to some of my own perceptions of that important meeting. And, finally, the Art Gallery of Ontario's exhibit on William Morris, *The Earthly Paradise,* reviewed for us by Michael Large, provided a case in point, which further amplified my ideas about what material culture research can bring to museums today.

Robin Inglis' argument that history curators need to serve more effectively as facilitators of material history research has much to recommend it, not least the very important point that curators, whatever their distractions, are often the sole keeper of the intellectual keys to important collections. Moreover, the value of convincing scholars from a broad range of academic disciplines that they may find answers to their questions in artifacts is reinforced by the established traditions of art history and anthropology. Access and methodology, however, represent only part of the challenge faced by anyone wishing to pursue and promote material history research. Equally important, though less examined, is the question of how the results of this discipline find expression in, and have an influence upon, museums and the society they serve.

This challenge was addressed by Cary Carson in the lead paper of the 1993 Winterthur conference, a paper entitled "Material Culture History: The Scholarship Nobody Knows." The paper was meant as a follow-up on an address Carson had given to the Winterthur conference 18 years ago. At that time, he had suggested that, unless material culture scholars established a clearly defined place and function for their

Parmi les nombreux articles publiés dans le dernier numéro de la *Revue d'histoire de la culture matérielle (RHCM* 39), j'ai retrouvé quelques notions qui m'ont amené à réfléchir à une seule et même question. D'abord, l'éditorial traitait du rôle des conservateurs dans la promotion de la recherche en histoire de la culture matérielle. En tant que conservateur, ce sujet me tient à cœur. Ensuite, Adrienne Hood passait en revue la conférence annuelle de 1991 sur la culture matérielle à Winterthur, dans un article qui rejoignait certaines de mes idées sur cette importante réunion. Enfin, l'exposition des œuvres de William Morris au Musée des beaux-arts de l'Ontario, « The Earthly Paradise », dont Michael Large rendait compte, a fourni un cas d'espèce qui est venu renforcer mes idées sur la recherche en culture matérielle et ce qu'elle peut apporter aux musées aujourd'hui.

L'opinion de Robin Inglis, à l'effet que les conservateurs d'histoire devraient faciliter davantage les recherches en histoire de la culture matérielle, vaut la peine d'être rappelée, surtout qu'il dit que les conservateurs, quelles que soient leurs préoccupations, sont souvent les seuls gardiens de l'accès intellectuel à d'importantes collections. Et la valeur de convaincre les spécialistes travaillant dans une vaste gamme de disciplines qu'ils peuvent trouver les réponses à leurs questions dans des objets de collection est renforcée par les grandes traditions de l'histoire de l'art et de l'anthropologie. Mais l'accès et la méthodologie ne sont qu'une partie du défi que doit relever toute personne désirant poursuivre et promouvoir la recherche en histoire matérielle. Il y a en effet un aspect tout aussi important de cette question qui n'a pas été examiné d'aussi près, et c'est de savoir comment les résultats de cette discipline trouvent leur expression et leur influence dans les musées et dans la société.

Cette question a été abordée par Cary Carson dans la première communication présentée à la conférence de 1993 à Winterthur et qui portait sur l'histoire de la culture matérielle,

research within modern scholarship, their subject would continue to be viewed with indifference by the academy. Though material culture studies now enjoy better accommodation at the university than before, much of the indifference remains. Indeed, Carson's observations about the development of the field since 1975 are very aptly summarized by his assertion that "material culture studies have evolved from a misunderstood discipline on the fringe of mainstream scholarship, to a misunderstood discipline in its own right."

As Carson noted, scholars of material culture have drawn much energy from their democratic aspirations, that is, their claim to serve a broader constituency than that represented by traditional academic history. Artifacts, it is argued, serve as important testimony to the lives of history's unlettered masses and as a check and counterpoint to the deception and delusion that written evidence sometimes contains. Moreover, today, as never before, there is growing interest in society's marginal and minority groups which, in theory, should mean an increase in opportunity and exposure for students of material culture. Unfortunately, in practice, the underlying connoisseurship of many curators and material culture scholars – the seduction of enjoying artifacts *for their own sake* – has led to a type of research that is every bit as exclusive as that of traditional history. The result, Carson argued, is a kind of neo-antiquarianism. Alternatively, when material culture scholars do venture into the realm of social analysis and commentary, too often they are only proving or repeating arguments that have already been well established on the basis of textual analysis.

While Carson was implicitly concerned with the impact of material culture on society in general, his immediate, explicit concern was with the academy. This is not surprising since many of the speakers and most of the audience at Winterthur consisted of academics; that is, university scholars, or academically trained researchers associated with a museum or comparable institution. Consequently, the common, unspoken assumption throughout the proceedings of the conference was always that the ultimate expression of material culture research is the academic article or book. However, as important as these media obviously are – and this journal exists as a reflection of that value – surely they are no more important as an expression of the

une discipline inconnue. Cette communication se voulait la suite d'une conférence que Carson avait donnée à Winterthur dix-huit ans plus tôt. À l'époque, il avait fait valoir qu'à moins que les chercheurs en culture matérielle ne forgent une place et une fonction clairement définies pour leurs recherches en histoire moderne, leurs efforts continueraient d'être reçus avec indifférence par les universitaires. Même si les études en culture matérielle sont maintenant mieux reconnues à l'université qu'auparavant, l'indifférence subsiste. En fait, les observations de Carson concernant l'évolution dans ce domaine depuis 1975 sont très bien résumées lorqu'il dit que les études en culture matérielle se sont « métamorphosées » : elle ont cessé d'être une discipline mal comprise en marge des études en général pour devenir une discipline à part entière mal comprise.

Comme le dit Carson, les chercheurs en culture matérielle ont puisé leur souffle dans leurs aspirations démocratiques, c'est-à-dire leur prétention d'atteindre l'auditoire plus large de l'histoire traditionnelle. Les objets de collection, soutient-on, sont d'importants témoignages de la vie de populations peu instruites et la contrepartie des témoignages écrits parfois illusoires. Il y a aussi le fait qu'aujourd'hui plus que jamais, l'intérêt pour les groupes marginaux et minoritaires de la société va croissant, ce qui, en théorie, devrait vouloir dire un intérêt plus grand pour les études en culture matérielle. Malheureusement, dans la pratique, la mentalité de connaisseurs de plusieurs conservateurs et chercheurs en culture matérielle et la séduction des objets de collection eux-mêmes ont abouti à un type de recherches toutes aussi exclusives que les études en histoire traditionnelle. Le résultat, soutient Carson, est le développement d'une discipline axée davantage sur le « néocollectionnement ». Par ailleurs, lorsque les chercheurs en culture matérielle osent s'aventurer dans l'analyse et les jugements à caractère social, trop souvent il ne font que répéter des arguments déjà avancés dans des textes.

Bien que Carson ait été implicitement préoccupé par les répercussions de la culture matérielle sur la société en général, sa préoccupation explicite et immédiate était le monde universitaire. Ce n'est pas étonnant, puisque de nombreux conférenciers et la plupart des membres de l'auditoire à Winterthur étaient des universitaires, c'est-à-dire des savants ou des cher-

ideas and insights derived from material culture research than the public exhibit.

In fact, I would argue that the intellectual and imaginative challenge of turning good material history scholarship into effective museum exhibits is at least as great as the process of studying objects as reflections of culture; the former involves interpreting objects *to* society, the latter concerns understanding the role of objects *in* society. Nevertheless, at the 1993 Winterthur "Shape of the Field" conference, only two speakers addressed the very difficult business of interpreting material culture through exhibits, one of whom pointedly reminded everyone that the potential audience for even a medium-sized exhibit is many, many times greater than that of the average academic article or book. This is an important issue which underscores the potential (and potential is the operative word here) for exhibits to satisfy the democratic aspirations of the discipline in a way seldom achieved by published research. Thus, in reflecting on Carson's observations, I am tempted to conclude that the lack of recognition and relevance afflicting material culture scholarship might well be remedied by an increased dedication – if not a radical shift – to the medium that most rightfully belongs to the museum: the exhibit.

This brings me to the implications of the AGO's production of *The Earthly Paradise*. During its four-month term at the National Gallery of Canada, I visited this exhibit on many occasions, in part because of the aesthetic appeal of the artifacts on display, but also because I was vaguely troubled by the exhibit, and each visit served as a chance to understand better the source of my consternation. My conclusion was, sadly, that this exhibit provides a striking example of the impoverished, marginal status of material culture studies in Canada. Even allowing that this was a show dealing with the decorative arts and originating in an art gallery (and so arising from the art-historical tradition of interpretation), I could not escape the irony that, whatever else William Morris might be, he is surely as close to the ideal subject for material culture studies as one might ever hope to find.

Like modern scholars of material culture, Morris was deeply concerned with the relationship between society and the material objects it produced and consumed. Furthermore, Morris was concerned with process as much as he was with product. In his writings

cheurs universitaires de formation associés à un musée ou un autre établissement de même nature, qui supposaient tacitement que l'expression ultime de la recherche en culture matérielle était l'article ou l'ouvrage savant. Cependant, aussi important que soit l'écrit – et l'existence de notre revue reflète cette conviction –, il ne l'est pas plus que les idées et les observations véhiculées par les expositions publiques.

En fait, on pourrait dire que l'effort d'intelligence et d'imagination nécessaire pour transformer le savoir en histoire matérielle en bonnes expositions dans les musées est au moins aussi important que celui qu'exige l'étude des objets des collections comme reflet de la culture : le premier concerne l'interprétation des objets *pour* la société et le second, la compréhension du rôle des objets *dans* la société. Il n'en reste pas moins qu'à la conférence « Shape of the Field » de 1993 à Winterthur, seulement deux conférenciers ont parlé de la très difficile question de l'interprétation de la culture matérielle par la voie des expositions, et l'un d'eux a rappelé à juste titre que le public éventuel d'une exposition, même de taille moyenne, est bien des fois plus nombreux que les lecteurs d'un article ou d'un ouvrage savant moyen. La question est importante, car elle souligne le fait que les expositions ont la possibilité (et je dis bien possibilité) de satisfaire les aspirations démocratiques d'une discipline dans une mesure rarement atteinte par les ouvrages publiés. En réfléchissant aux observations de Carson, je suis tenté de conclure que l'on pourrait compenser le manque de reconnaissance du savoir en culture matérielle par une détermination accrue – sinon une volonté de changement radical – de communiquer ce savoir par un médium qui appartient à juste titre aux musées, l'exposition.

Ceci m'amène aux implications de l'exposition du Musée des beaux-arts de l'Ontario, « The Earthly Paradise ». Au cours des quatre mois durant lesquels cette exposition a été présentée au Musée des beaux-arts du Canada, je l'ai visitée en de nombreuses occasions, en partie à cause de l'attrait esthétique des objets exposés, mais aussi parce qu'elle me troublait vaguement et que chaque visite me donnait la chance de comprendre un peu mieux la source de ma consternation. J'en suis en effet arrivé à la triste conclusion que cette exposition est un exemple flagrant de la marginalité des études en culture matérielle au Canada. Même en tenant

one finds the profound conviction that the artifacts associated with a particular society are a reflection of its values. He also believed and asserted that society is shaped by the images and ideas inherent in its built environment. By its very nature, the subject of Morris and his life's work suggests the importance of these kinds of issues, issues that are central to the study of material culture. Thus, if ever an opportunity existed for the application of a material culture approach, *The Earthly Paradise* exhibit was that opportunity. And yet, somehow, these matters were kept at a distance, relegated to a single dedicated attempt to deal seriously with process (the wallpaper matchpiece and video), a bank of phones providing recorded narratives explaining Morris' ideas and, of course, for those who could afford it, the catalogue. Why it was deemed unnecessary or inappropriate to provide a contrasting view of mainstream Victorian industrial production (again, both process and product) remains a mystery. Yet, surely to understand (interpret) this is to understand (interpret) the context that ultimately gives Morris' life's work meaning and inspired his political stance. Visitors to the exhibit were reminded that Morris himself became painfully aware of the contradictions inherent in the fact that only the well-to-do could afford his beautiful designs. Much to his chagrin, the greater part of society remained untouched by his work. Why, then, does this exhibit compound the contradiction by displaying these objects in splendid isolation, as though the beauty of their design was the only relevant end? In light of the interpretation provided, it is tempting to conclude that the show's producers do not, ultimately, believe in Morris' stated objectives, but rather have concluded that it was only the aesthetics that really mattered, after all.

If a Canadian exhibit dealing with a subject which so obviously invites (and could so easily accommodate) a material culture approach remains so strikingly innocent of such concepts, what hope is there for finding material culture research reflected in other Canadian museum exhibits? The prospects, I admit, seem bleak, but this is the nature of the challenge our discipline faces. On the other hand, I believe a concerted attempt to bring material culture studies to the forefront of museology will prove worthy of the effort. By promoting the exhibit as a means of curatorial expression, the central

compte du fait que cette exposition traitait d'arts décoratifs et avait vu le jour dans un musée d'art (et était donc issue de la tradition historique de l'interprétation de l'art), je ne pouvais m'empêcher d'en constater l'ironie, car William Morris, quelle que soit sa vocation, est certainement l'artiste qui s'est le plus rapproché du sujet idéal des études en culture matérielle que l'on pourra jamais espérer trouver.

Comme bien des chercheurs modernes de la culture matérielle, Morris s'intéressait vivement au rapport entre la société et les objets matériels qu'elle produisait et consommait. De plus, il s'intéressait autant au processus qu'au produit. Ses écrits révèlent la conviction profonde que les objets liés à une société en particulier sont le reflet des valeurs de cette société. Morris croyait également et faisait valoir que la société était façonnée par les images et les idées inhérentes à son environnement. Les sujets des œuvres de Morris, par leur nature même, semblent indiquer l'importance des questions qui sont au cœur même des études en culture matérielle. L'exposition « The Earthly Paradise » était donc certainement l'occasion de mettre en application une approche fondée sur la culture matérielle. Et pourtant, ces questions ont été refoulées, réduites à un simple effort d'examiner le processus (ainsi, celui du papier peint, avec matrice d'impression et vidéo), à des téléphones donnant une explication enregistrée des idées de Morris, et bien sûr, pour ceux qui en avaient les moyens, au catalogue. Pourquoi a-t-on jugé inutile et peu approprié d'offrir le point de vue contrastant de l'industrie victorienne de l'époque (encore une fois, processus et produit)? Personne ne le sait. Pourtant, comprendre ou interpréter ceci, c'est comprendre ou interpréter le contexte qui a ultimement donné vie et signification à l'œuvre de Morris et inspiré ses idées politiques. L'exposition faisait vite comprendre aux visiteurs que Morris lui-même était péniblement conscient des contradictions inhérentes au fait que seuls les gens à l'aise avaient les moyens d'acheter ses belles créations. À son grand chagrin, une partie importante de la société est demeurée intouchée par son œuvre. Pourquoi alors cette exposition accumule-t-elle les contradictions en exposant ces objets dans un splendide isolement, comme si leur beauté était la seule fin à retenir? Compte tenu de cette interprétation, il est tentant de conclure que les producteurs de l'exposition ne croient pas eux-mêmes aux objectifs de Morris,

tenets of material culture research can ultimately reach a much wider public than that which is currently served through publication alone. In doing so, the various professional groups that now regularly participate in exhibit development (designers, educators, writers, conservators and managers) will also come to view objects as more than merely elaborate forms of illustration or decoration. This will go a long way toward erasing the persistent and essentially false working distinction between "artifacts" and "ideas," a distinction that all too often deadens the interpretation of collections and the production of history exhibits.

If curators are to be true facilitators of material culture research, as Robin Inglis would like us to be, I believe we must rethink our priorities in both our selection of media and our choice of audience. Material culture, as an attitude to objects, must first extend its influence *within* the museum community, before it can ever hope to expand effectively beyond it. To this end, the exhibit medium provides both a valuable context for building the strength of the discipline *within* our institutions, as well as an effective – perhaps the most effective – means by which to express our ideas and, ultimately, to satisfy our aspirations as public scholars.

Garth Wilson,
English Language Review Editor

mais estiment que c'est seulement l'aspect esthétique qui compte vraiment, en définitive.

Lorsqu'une exposition canadienne traitant d'un sujet qui invite de façon aussi évidente une approche fondée sur la culture matérielle (et peut si facilement s'en accommoder) demeure aussi innocemment éloignée de ce concept, quel espoir avons-nous de voir enfin la recherche en culture matérielle reflétée dans d'autres expositions de nos musées? Les perspectives ont l'air bien sombres, je l'admets, mais c'est là la nature du défi que notre discipline doit relever. D'un autre côté, je crois que si l'on fait une tentative concertée pour amener les études en culture matérielle au premier plan de la muséologie, cette tentative sera récompensée. Si nous faisons valoir que les expositions sont un des moyens d'exprimer l'esprit de la conservation, les principaux tenants de la recherche en culture matérielle pourront ultimement atteindre un public beaucoup plus large que celui qui est actuellement desservi par les publications seules. Ainsi, les divers groupes professionnels qui participent maintenant régulièrement à l'élaboration des expositions (concepteurs, éducateurs, rédacteurs, conservateurs et gestionnaires) en viendront également à regarder les objets de collection comme étant plus que des formes compliquées d'illustrations ou de décorations. Ils réussiront éventuellement à faire disparaître la distinction persistante et essentiellement fausse entre « objets de collection » et « idées », une distinction qui fait trop souvent échec à l'interprétation des collections et à la production d'expositions historiques.

Si les conservateurs veulent être de véritables animateurs de la recherche en culture matérielle, comme Robin Inglis voudrait que nous le soyons, je crois que nous devons revoir nos priorités en fait de sélection tant de médias que de publics. La culture matérielle, en tant qu'attitude envers les objets, doit d'abord étendre son influence dans le milieu des musées, avant d'espérer pouvoir effectivement la dépasser. La formule de l'exposition fournit donc à la fois un contexte utile pour donner à la discipline sa juste place dans nos établissements de même qu'un moyen efficace, peut-être le plus efficace, d'exprimer nos idées et, ultimement, satisfaire nos aspirations de chercheurs au service du public.

Le responsable des comptes rendus en anglais,
Garth Wilson

Toward a Material History of Watercraft

JOHN SUMMERS

Abstract

This article explores the application of material culture theory and methodology to the study of historic small craft. Following a literature review of selected works of watercraft history and the fundamental characteristics of a material culture approach, two examples are given. Both are drawn from the late nineteenth century, a time when recreational boating began to be a major social and economic phenomenon in North America. The growth in popularity of the canoe as a vehicle of leisure instead of work took place within this context. Theoretical categories of workmanship are first applied to the development of Canadian canoe building techniques. Following this, two sailing canoes, designed and constructed some 30 years apart, are analysed in detail to show how they are differing responses to the same abstract design question of how to fit a canoe to sail. Finally, the meaning of recreational boats as objects of social consumption and production is considered.

Résumé

Cet article examine la théorie et la méthodologie de la culture matérielle appliquées à l'étude de petites embarcations historiques. Après avoir fait un examen de documents choisis sur l'histoire des embarcations et les caractéristiques fondamentales d'une approche inspirée de la culture matérielle, l'auteur donne deux exemples, tous deux tirés de la fin du XIX^e siècle, une époque à laquelle la navigation de plaisance est devenue un phénomène social et économique important en Amérique du Nord. La popularité croissante du canot comme objet de loisir plutôt que de travail s'inscrivait dans ce contexte. L'auteur explique d'abord les théories sous-jacentes des techniques de construction du canot canadien. Ensuite, il analyse en détail deux canots à voile, conçus et construits à quelque trente ans d'intervalle, pour montrer comment ils rejoignent par des chemins différents la notion de la voile fixée à un canot. Enfin, l'auteur étudie la signification des embarcations de plaisance en tant qu'objets de consommation et de production sociales.

In a recent article in *The William and Mary Quarterly* entitled "Beyond Jack Tar," historian Daniel Vickers made several pertinent observations about the writing of maritime history. There is, he said, a gap between popular maritime history and the work of academic historians; maritime history lacks a "well-defined body of ... theory around which research and debate might be organized;" and finally, some of the seminal works of maritime history "were fundamentally celebrations and not analyses."[1]

Each of these comments is telling, and worthy of extended debate on its own. However, it is the second of these, regarding the role of theory in maritime history, that I would like to address in this article by exploring the application of material culture theory and method to the study of historic watercraft.

One of the fundamental texts for the student of historic watercraft in North America is Howard I. Chapelle's *American Small Sailing Craft.*[2] First published in 1951, Chapelle's work was the result, the author said, of a "self-educational project to explore the 'art' of small boat design." His purpose in writing the book was distinctly practical. Dismayed at the trend that yacht design was taking, he sought to reintroduce to the boat-using and boat-building public a number of historic watercraft that he felt were worthy of serious consideration.

Traditional working craft, he maintained, were often highly evolved for particular con-

ditions, while at the same time retaining an inherent wholesomeness and simplicity of construction. As such, they made good choices for those looking for practical, relatively low-cost, able pleasure craft.

Following an initial historical chapter on colonial and early American boats, the book is organized typologically. Chapelle grouped watercraft according to hull types, such as flat or V-bottomed, or according to families of similar, related designs, such as shallops, or sloops and catboats. Each type was illustrated by measured drawings of several examples. These were often the results of extensive primary fieldwork, including interviews with builders and users, and lines and measurements taken from extant hulls and models. With his connoisseur's eye, Chapelle did not hesitate to designate certain models of each form as degenerate or unduly influenced by racing, which he felt invariably diluted the qualities of the workboat origins. His purpose, after all, was to provide people with wholesome, usable boats.

A similar, though much elaborated, classification of boat types had been earlier created by James Hornell, whose *Water Transport: Origins and Early Evolutions* was published in 1946. Hailed by the *Times* of London on his death in 1949 as "probably the greatest living authority on the evolution of water transport," Hornell's approach was Darwinian in its scope. He attempted nothing less than a systematic survey which included virtually every form of watercraft in the world, both ancient and modern.[3]

Though he made his living as a marine biologist, Hornell's approach was typical of that taken by anthropologists, with a strong emphasis on recording, listing and describing variations in form and construction. Like Chapelle, his research was based on extensive fieldwork and on-site documentation. He even classified the tools and equipment of boats, including in his book a two-page aside on bailers. Like Chapelle, though on a global scale, he too was concerned with the diffusion of influences and forms, and with establishing lines of descent through common watercraft families that could link, at some ancestral level, all known forms of boats.

In the completeness of its cataloguing, Hornell's book has yet to be exceeded, and likely never will, since many of the forms that he surveyed in the 1920s and 1930s are now extinct. However, as maritime historian and curator Basil Greenhill pointed out in his introduction to the reprinted 1970 edition, certain aspects of scholarship have evolved since the book was first published, and so the same historical material could still be made to yield new insights.

Douglas Phillips-Birt's *The Building of Boats* picks up where Hornell left off.[4] Phillips-Birt's perspective is also global on the subject of the history of boatbuilding. Focussing on construction methods as an aid to classifying boat forms, he elaborates on a distinction not given its due in Hornell: that between shell-first and skeleton-first construction. For Phillips-Birt, this is the fundamental, orienting division between watercraft types, and all others have flowed from it. While distinguishing an overall evolutionary progression beginning with the earliest floating devices, he nonetheless also demonstrates how particular construction techniques, far from succeeding one another in the orderly fashion so beloved of chronology or timeline makers, often persisted side by side well into modern times.

No less important a work of watercraft history is Kenneth and Helen Durant's *The Adirondack Guideboat*.[5] Utterly different from the global perspectives of Hornell and Phillips-Birt or the national focus of Chapelle, Durant's book is a detailed and intimate portrait of a distinctive regional watercraft type. Given the long association of Kenneth Durant's family with the Adirondacks, he might be said literally to have had guideboats in his blood.

The book is organized into two main sections, concerning first the origins and context of the guideboat's unique design, and second its construction and use. Much attention is paid to possible origins of the boat's hull form and structure, and to its frame-first, bevelled-lap building method. Extensive lineages of particular guideboat models and their builders are given, together with a lesson in how to use one on the water. One guideboat-builder's shop, that of the Grant family, is inventoried in detail. The ultimate example of the almost obsessive focus on a particular boat is a count of the number of tacks and screws used in a typical Grant guideboat.

Each of these four books is a fundamental text for the student of North American watercraft history. None of them was written by someone who would have been considered a historian in the academic sense of the word, though certainly the authors were of substantial

reputation and some standing in their fields. The Durant and Chapelle books exemplify a strain of writing which proceeds from deep personal knowledge and experience of the subject matter: the Adirondack guideboat for the Durants, and American sailing workboats for Chapelle. Though it may be going too far to level at these volumes Vickers' charge that they celebrate where they should analyse, they are, for the most part, works of straightforward narrative history, without an explicit research methodology, and not products of a particular school of historical understanding. They are books written by expert practitioners who also happened to be writers.

Phillips-Birt and Hornell, regardless of the extent to which they explicitly acknowledge it, are more scientific in their approach. Their global, systematizing, categorizing studies have their methodological roots in enlightenment-era theories of taxonomy and classification that were first applied to the natural world. They endeavour to erect a theoretical framework that can encompass the diversity of examples that they study, and their works at least make a gesture at the closure of an explanatory system. However, in their books, as with the other two, the question of *how* the boat might be studied is largely subsumed in the simple fact that it *should* be studied. The topic is so self-evident, and its attraction so great, that the authors get right down to business and begin with histories that are fundamentally narrative and descriptive, rather than analytical.

This limited literature review should not give the impression that no one is applying material culture methodology to watercraft, however. A notable disciplinary exception is underwater archaeology, particularly in the studies by George Bass. Research has also been carried out, primarily on working craft, by Basil Greenhill, David Taylor and Janet Gilmore.[6]

Only one of the works above, the Durants' guideboat monograph, deals with recreational as opposed to working watercraft. Chapelle's avowed intention was to bring to the reader's attention working watercraft that could also be used for recreation. He and other authors who have come after him have largely succeeded in doing this, re-integrating historic working small craft into the modern world in a practical way. The general level of knowledge about and appreciation of historic small craft has grown tremendously since the early 1970s. However, historic recreational watercraft themselves have to date not really been subjected to detailed studies of their context and evolution to the same extent as working craft.

Recreational boats should be a fruitful area for material culture study, since their consumption frequently represents discretionary spending relatively unhindered by necessity. They might, therefore, be assumed to be even more representative of the needs and desires of their consumers and users than working craft: a much-desired consumer good is an appropriate way to study how desires are satisfied through artifacts.

The Material Culture Method

All of these books have in common a focus on the boat as an object, and they seek in their various ways to understand its form and structure. It is, in essence, a material culture approach. Material culture has been called "a preoccupation with the direct evidence offered by the artifact ... and its meaning to particular humans as an expression of need and aspiration."[7] Another prominent material historian has written, "the underlying premise [of material culture] is that objects made or modified by man reflect, consciously or unconsciously, directly or indirectly, the beliefs of the individuals who made, commissioned, purchased or used them, and by extension the beliefs of the larger society to which they belonged."[8]

A material culture approach, by uniting heretofore separate studies of material and culture, has the potential to be a unifying force in watercraft history. For example, the evolution of fishing craft is often studied from a point of view based on naval architecture: Chapelle's famous examination of the evolution of the American fishing schooner considers speed, seaworthiness and carrying capacity as the primary determinants of vessel form.[9] A folklorist, by comparison, may be recording the songs and documenting the dress and houses of fishermen ashore.

The fishermen's boats, however, are nothing if not another element in the coherent and interconnected cultural system of their lives. Though considerations of naval architectural science played a strong part in vessel evolution, their ultimate form was also determined by what fishermen consciously and unconsciously wanted to say with them and through them about their livelihoods, their skills and their place in fishing

culture. An incisive examination by Bill Dunne of the dangerous role fashion and tradition have played in fishing vessel design has recently explored this issue in more detail.[10]

The history of yacht racing and design too shows clearly the need for interconnected examinations: that is, studies that consider both material and culture. The shape of a given racing yacht is a complex amalgam of the influences of rating rules, design theory, style and aesthetic prejudice and opinion. A consideration from any one of those viewpoints alone is insufficient to fully understand the artifact.

Another characteristic of a material culture approach is a tendency toward explicit, schematic research models, which constrain the researcher to take certain steps in a particular order in the encounter with the object of study. This overt methodology can clarify the issues at stake, and help to factor out the researcher's own preconceptions and guide the crucial fieldwork stage of research.[11] However, as the noted American material culture writer Thomas Schlereth has pointed out, it can also be constraining. Such a methodology might best be seen as only an intermediate point on the way to a "more rigorous, more systematic, more verifiable theory."[12]

A material culture analysis also requires a distinct body of data, containing more than one example of the artifact in question. For the material historian, meaning ultimately arises from an artifact considered not as a masterpiece work of art, in splendid isolation, but in relation to other similar artifacts. This is an echo of material culture's origin in linguistics and an indication of the prevalence of the linguistic metaphor. Since the work of Swiss linguist Ferdinand de Saussure, linguists have located meaning in language not primarily in words or sentences, but in *différence,* the play among words and sentences.[13]

Material historians will often utilize an abstract notion of a particular artifact, such as a chair, as a point of comparison with the real ones under study. This can yield information about: the persistence of certain forms over time; the degree of variation from a norm; the drift and change of style; the arrangement of artifacts into a series; and the interpretation of the results as evidence of cultural conditions or change.[14]

To do so inevitably raises the question of interpretation, however. Material historians have on occasion been criticized for focussing overmuch on how things changed and neglecting to speculate why, and thereby producing what a colleague recently called "object-oriented interpretive catalogues." Archaeological theorist Christopher Tilley refers to "the deadening verbal and visual catalogue of the empiricist ... text," and shows how, for early archaeologists, identification was synonymous with interpretation.[15] The same can be said of solely descriptive, first-order material culture studies. In order to avoid the charge that the material culture is simply a more sophisticated antiquarianism, it must be possible to use the carefully elaborated results of confrontations with objects as a way to understanding larger social meanings.

In pursuing this, material historians must confront for themselves issues common to other critical interpretive modes: Where are the structures really located that we claim to find in objects? Are stylistic evolutions of a beginning, middle and end, with the climax in the middle, impositions or interpretations? Is Chapelle, for instance, saying more about himself than the watercraft when he speaks of "degenerate" forms?

Archaeologist Ian Hodder, who has written persuasively on issues of material culture theory, maintains that literary forms are a fundamentally human mode of perception. Therefore, when we find beginnings, middles and ends in cultural sequences, it is both an "arbitrary fiction of the observer" and a recognition of inherent structure.[16] For Hodder, uninterpreted research is incomplete research, and he suggests strongly that material culture (and archaeology) must rise above list-making and descriptions of things. For him, the products of interpretation justify the risk of imposing meaning on artifacts.

A material culture approach may be characterized by the following: a recognition of the primacy of the artifact in historical understanding; a belief that artifacts reflect the societies that produced them; an analysis of both the material and culture of an artifact; an explicit research strategy wherein questions are initially addressed directly to artifacts; and a conclusion by the interpretation of data produced in a detailed examination of the artifacts.

In order to explore the application of these principles to watercraft history, I would like to examine a distinct period at the end of the nineteenth century: recreational canoeing, the first of the great popular crazes which were to seize North America at the end of the nineteenth century.

Fig. 1
Decked sailing canoes of the Toronto Canoe Club at Toronto Island, 1890s. John Colin Forbes's Sailing at Toronto Island. *(Courtesy Royal Ontario Museum)*

Recreational Canoeing

The range of canoe forms is stylistically and geographically vast. This study will consider only canoes made for recreational use by European construction techniques by British, American and Canadian canoeists during the last quarter of the nineteenth century. It will not address craft used primarily for work, such as the Chesapeake Bay log canoe, or aboriginal craft from the larger area of the Americas.

The canoe is an enduring icon of North American and particularly Canadian culture.[17] Long the watercraft of choice for wilderness travellers in the country's early days, its use had declined through the nineteenth century as roads, schooners and steamships made journeys easier. By the last quarter of the nineteenth century, however, the canoe was experiencing a rebirth. The stalwart companion of many a woodland journey had been transformed into a means of recreation and healthful exercise. The North American public was gripped by a great popular enthusiasm for canoes and canoeing. This foreshadowed their later fondness for bicycling.[18]

This rise of recreational canoeing from the mid-1860s was an extraordinary flowering of boating activity. Changing economic circumstances and new social attitudes produced a class of well-heeled sportsmen and adventurers who acted as patrons of high-quality boatbuilders. This demand for premium work attracted and fostered an extremely high calibre of boatbuilding, which drew upon rapid advances in technology and mechanization to accomplish its feats.

Two distinct strains emerged early in the development of this mid-nineteenth-century recreational canoe. Both were aboriginal in origin. Although it is too simple a distinction to explain the matter entirely, one can begin by distinguishing among the canoes by whether or not they had a deck. The undecked watercraft which was later to become known, somewhat misleadingly, as the "Canadian" (or "open") canoe had its origin in native birchbark and dugout craft. The main technical contribution of the canoeists and canoe-builders of the recreational era who worked with this model was in the construction techniques, and only secondarily in the designs, which remained relatively unchanged. Some commentators maintain, in fact, that such canoes approached perfection the more closely they adhered to their aboriginal roots.[19]

The other recreational canoe form popularized at this time was the decked canoe. Decked canoes as used for recreation in North America also evolved from native watercraft, but from a more northerly tradition, and by a roundabout

route. It was a retired British Army officer who, in 1865, first married the form of the decked, double-paddle skin canoes or kayaks which he had observed in northern cultures to the European lapstrake boatbuilding tradition.[20] A skilful self-promoter and an ardent writer and traveller, accounts of his cruises soon sparked imitators, and by the late 1860s a canoeing movement was underway in Britain. This was soon exported to the United States, where increased leisure time and wealth, coupled with highly romanticized notions of the beneficial effects of coming into contact with a rapidly-being-tamed wilderness, gave the sport added impetus.

At this time, the two canoe styles, the decked and the open, were subjected to further influences. Human nature asserted itself, and people began not only to paddle their new canoes, but to race them, and argue fiercely about their respective merits. The open, undecked type remained largely a Canadian phenomenon in the early years, while the decked-over British form diverged into paddling and sailing models. When organized canoeing, exemplified by the American-led American Canoe Association, came to Canada, they treated the open Canadian boats as strange and wonderful objects, particularly when the Canadians soundly beat them in several paddling races.

Along with the open vs. decked canoe debate were strongly-held opinions about paddle styles, once again traceable back to the original native sources for the respective designs. Open canoes had traditionally been used with single-blade paddles, and decked boats with double-blade ones. Early racers experimented back and forth with inconclusive results as far as absolute speed was concerned.

Often (and somewhat misleadingly) described as the "Poor Man's Yacht," the nineteenth-century decked sailing canoe might better be called the "Poor Yachtsman's Yacht," since it offered its adherents, through canoeing, a similar social structure to organized yachting, but at far lower (though still considerable) cost (Fig. 1). Canoe clubs grew rapidly in numbers through the 1870s and 1880s. Most had distinctive burgees, uniforms and sail emblems, which the canoeists called "totems" (Fig. 2). Their dominant ethos was rugged amateurism, an outgrowth of the "Corinthian" movement in yachting. Corinthian yachtsmen crewed and sailed their own craft, instead of employing paid hands. These canoeists frequently referred to themselves by ennobling sobriquets, such as "Knights of the Double Blade" (Fig. 3).

Fig. 2
Members of the Toronto Canoe Club at an American Canoe Association meet, 1880s. (Courtesy Toronto Historical Board)

Canoe Construction and Categories of Workmanship

In his article examining workmanship as evidence in eighteenth-century chairmaking, material historian Phillip Zimmerman distinguished three broad categories of workmanship employed by chairmakers: risk, certainty, and habit. The workmanship of risk is that in which the result is constantly at hazard during the process of making (for instance, with hand carving, where each piece is created anew). The workmanship of certainty is that in which quality is largely pre-determined through the use of moulds and patterns.

In the case of the third category, the workmanship of habit, the product is a relatively uniform object, but its production still requires a high degree of skill. The work is carried out by a mental, as opposed to a physical, template which guides a conditioned response on the part of the worker. For artifacts produced by this kind of workmanship, regional variations in style, technique and execution derive from the re-use of these mental templates by workers being trained in one area and then dispersing.

Workmanship of habit can be further linked to particular economic circumstances. Zimmerman shows how a scarcity of investment capital in eighteenth-century America meant that what limited amounts were available were usually tied up in land or buildings, and therefore could not be spent on expensive tools or

automation of work processes. The skills of the workers took the burden of ensuring the consistency of the finished product. As capital and machinery became available, patterns of workmanship moved away from habit and toward certainty, as more and more of the burden of production quality was borne by machinery.[21]

The applicability of this model to boatbuilding is obvious. As many people discovered to their chagrin during the first stages of the wooden boat revival in the late 1960s and early 1970s, nineteenth-century boatbuilders were not medieval artisans who entered into a spiritual communion with wood as they built their boats. That was the quick way to bankruptcy. What they did was to work on an almost assembly-line system, relying on task specialization and the patterning of parts to produce boats at a relatively rapid pace through handwork of machine-like quality and regularity.

Zimmerman's workmanship paradigms can easily be applied to changing techniques in recreational canoe construction in the last half of the nineteenth century. In the progression from bark and dugout canoes, to wide-board plank boats, to rib and batten, to cedar strip, to canvas-covered, can be seen the same gradual drift in workmanship methods from risk to certainty (Fig. 4). A dugout canoe, chronologically the earliest form, was produced by the workmanship of risk through a process of skilled attrition of the original log, the final form depending almost entirely on the experience and mental template of the worker wielding the adze. The same was true of the patternless bark canoe. Although it was a more complex structure, the mental template guiding the work was still regional and ancestral, and not drawn or otherwise recorded.

The early recreational canoes built in the mid-nineteenth century, whose forms imitated those of the much older bark and log boats, initially used wide boards of prime lumber, usually three to a side. The success of this kind of canoe hull depended very much on the fit between the planks and the quality of the lumber. Absolute skill in fitting became slightly less important with the rib and batten method, when half-round battens began to be fitted to back up seams for further watertightness. The battens still had to be carefully fitted between each rib, however.

A significant step toward the workmanship of certainty was taken with what Canadians historically termed a cedar-strip canoe (not to be confused with modern, home-built cedar strip canoes, where the pieces are roughly square in cross-section). Here, the time-consuming and exacting process of spiling planks, a vestige of the canoe's structure that had been retained from much larger craft, was eliminated. In its place was one master plank shape. This was a narrow strip of planking, widest in the middle and tapering equally toward each end that, with

Fig. 3
Toronto Canoe Club members, 1880s. Note both the paddles hanging up and the bicycles in the foreground. (Courtesy Toronto Historical Board)

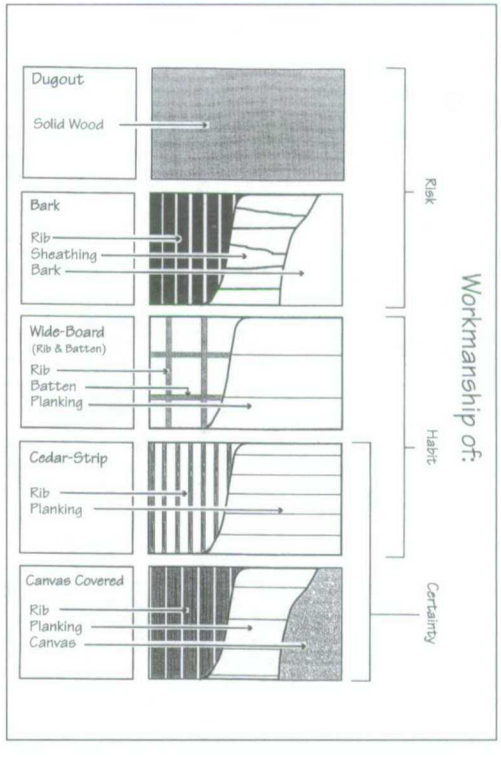

Fig. 4
Canoe construction methods and workmanship categories.

very few exceptions, could be used to plank the entire boat. Now, as well as simply accumulating wood, canoe-builders could prefabricate virtually finished planks, requiring only one master shape per design.

The transition from risk to certainty was completed with the advent of the canvas-covered canoe. Structurally, it looked back to the bark boats, wherein the planking's sole purpose was to support a waterproof skin, and it was therefore only a sheathing over the ribs. In terms of process, however, the loosely-fitted and roughly-sawn plank stock of the canvas-covered canoe, with its use of un-spiled, constant-width planks and many gores and stealers, required the least workmanship of all. No longer did canoe-builders need even the relatively good clear lumber of the cedar strip boats. Combined with the banded metal form, this eliminated two crucial and expensive skills from canoe production: planking could be quickly and roughly fitted, and the tacks which held it to the ribs no longer had to be turned and clinched by working at both sides of the hull. One worker could drive tacks from the outside of the hull, and their points would be turned by the metal bands on the mould. Ironically, some modern canoe-builders, catering to a misplaced enthusiasm for anything which looks "handmade," now produce this type of canvas-covered canoe without its painted canvas, but instead with a clear fibreglass covering. In terms of canoeing history, this is an a-historical joke, somewhat akin to living in a house with no exterior siding, since the planking of a canvas-covered canoe was only a sheathing, and was never meant to be seen from outside the boat.

Of course, none of these changes in workmanship happened in isolation. For the production of recreational canoes, which was so closely tied to the rise of new ideas of leisure and an increase in disposable income, economic pressure on producers was to become particularly acute by the 1890s. Relentless price competition all but ensured that even well-known builders such as the American J.H. Rushton, of Canton, New York, who formerly had made much in their advertising of the quality of their boats, emphasizing the highest grades in each model of canoe, eventually saw their canvas-covered boats, the cheapest to build, eclipse all others in sales.[22]

Sailing Canoe Design

As well as larger questions such as this, a material culture focus can also yield particular insights into the form and structure of artifacts themselves. Often this detailed analysis is a first step in a wider research project, but it can have its own rewards. There will always be a need for accurate, first-order descriptive studies to provide good data for material culture interpretation. To explore this further, I would like to show the results of subjecting two nineteenth-century canoes to a straightforward, first-order material culture analysis.

Between 1883 and 1889, the Ontario Canoe Company of Peterborough, Ontario, produced the decked sailing canoe shown in Fig. 5. Made by a patented process known as "cedar-rib" construction, it is a typical late nineteenth-century decked sailing canoe in all but its hull construction.[23] Early in 1892 the factory of the Ontario Canoe Company was destroyed by fire but later the same year the canoe building operation was re-instituted, this time in Peterborough itself and under the now-familiar name of the Peterborough Canoe Company. The Ontario Canoe Company is most significant for its purchase and use of John Stephenson's two canoe building patents as the basis for its business: one from 1879 for *Stephenson's Rib Boat,* which became popularly known as the "cedar rib" canoe, and the other from 1883 for *Stephenson's Longitudinal Rib Boat,* which may be seen as the technical precursor of what later became the national institution of the so-called cedar-strip canoe already referred to. Purchased from its original owner in the late 1940s, and subsequently owned and stored by members of one family, this canoe is virtually complete and in original condition, except for having been recently refinished.

The canoe in Fig. 6 was made by the Gilbert Motor Boat Company of Brockville, Ontario, sometime between 1910 and 1915. The Gilbert company produced a range of runabouts and autoboats for recreational use on the St. Lawrence River. Apparently one of a number of one-design hulls, the canoe was constructed to the order of the Gananoque Canoe Club to bolster its racing fleet. Designed to compete in the 16' × 30" class, it has a sliding seat, thwartships tiller and two, standing leg o'mutton sails.

In order to examine and compare these boats, I have made use of a familiar material culture research matrix first proposed by Bob Elliot in

Fig. 5
Ontario Canoe Company cedar-rib canoe with one hatch cover in place.

the mid-1980s. In a graduate seminar, a group led by Elliot assembled and evaluated various material culture methodologies, eventually arriving at a synthesis that incorporated the most useful features of several.[24] Their method takes the form of a grid: down the left-hand side are three categories of evidence: 1) observable data, determined through direct physical and sensory contact; 2) comparative data, resulting from comparisons with similar things of a similar time and/or construction; and 3) supplementary data, including written or printed sources, oral evidence, photographs, paintings, and drawings. These three classes of data move progressively further from the thing itself, beginning with a restricted view and gradually re-establishing the artifact in a broader context. The value of this material culture method derives mainly from the first two categories of evidence, which might otherwise be omitted if a researcher went straight to conventional sources. To gather these necessitates direct physical and personal contact with the artifact, and it precludes working only from a photograph, illustration or written description.

Along the top of the grid are five categories of questions to be directed at the artifact, each answered in turn through one of the three kinds of data: material, construction, provenance, function and value. If the method is to produce useful results, a certain rigour in the application of the categories is called for, together with a willingness to exclude supplementary and comparative data from the first phase of examination. What this grid produces is in essence field notes which can be refined and expanded later.

When these two canoes were assessed using this method, several useful points of comparison were brought out. The Ontario Canoe Company boat is a high-prestige, value-added artifact, a deliberate display of virtuoso crafts-manship. It is constructed of rabbetted cedar strips $1\,1/2$" wide, which run from gunwale to gunwale. For most of the boat, they are continuous, but near the stem and stern, where the hull becomes sharper, they terminate at the keel on each side. The only other interior structural members are four, light, longitudinal stringers and a keel, which also houses the folding centreboard. This canoe's shape, with the plumb stem and almost gothic peak to the sheer at the bow and stern, is taken from earlier dugout and bark boats in the Peterborough area, and is quite different from the more conventional recurve or tumblehome canoe stem.

There is no overriding structural reason for this cedar-rib building method: it is not particularly lightweight; it does not seem to be leak-proof, since it greatly multiplies the number of seams underwater; and it is no stronger, and possibly less so, than more conventional wide or

narrow board construction with the planks running longitudinally. The Ontario Canoe Company claimed, however, that it was less prone to leaks, perhaps because the rabbetted seams between the planks outweighed the increased number of seams. The principal reasons for cedar-rib construction are likely located elsewhere than in the interests of the advancement of naval architecture. This is a market-driven boat, emblematic of the class of customer to whom it was being sold. The construction method was utilized in part simply to prove that it could be done, and to provide a visually distinctive, premium product, for which a high price could be charged.

The Gilbert Motor Boat Company canoe is a different matter entirely. Its shape is a-historical in canoeing terms, formed mainly by function and bearing only an incidental relation to canoeing history, either aboriginal or European. It is also constructed of cedar, though in wide, thin planks. The hard chine hull is made with a sheer clamp, a chine log and a keel, and the bottom, side and deck planks are in one piece. The interior workmanship is quite delicate in its scantlings. Small frames are laid on the planking between sheer and chine, and between chine and keel. These are joined over the chine log with a notched knee. Over the keel, the frame heels are joined with a floor timber of the same siding as the chine knee. The frame heels are staggered so that one falls on the forward and one on the after face of each floor. It is, in fact, conventional V-bottomed runabout construction, though on a small and delicate scale, and reflects the fact that the canoe was built by a company whose primary business was motor boats.

The Ontario Canoe Company canoe is typical of boats used by members of the American Canoe Association and other groups for a range of activities, including racing, social sailing and extensive cruising. It is fitted with a folding, Radix-brand centreboard, a drop rudder, two break-apart double-blade paddles, and separate sailing and paddling backrests. As would be expected on a top-of-the-line boat such as this, the quality of the gear is high, including elaborate escutcheon plates around the mast tubes and four fitted wooden hatches which can be locked in place to cover the cockpit completely. If one were to quantify its uses, it might be divided into equal parts for cruising, day-sailing and racing. The deck-mounted tiller would allow for sailing from the side-deck, though rudder lines were also fitted for sailing below in the cruising position as well.

In front of the seatback is a shaped mahogany board that extends across the cockpit. Constructed from a single plank, it is slightly wider than the canoe's beam, with rounded ends and a relieved after side. At each end are vertical members with bevelled ends. I would interpret this to be a hiking board (as distinct from a sliding seat). It is unclear from the existing hardware marks on the boat whether it was permanently fixed in place or demountable. The relieved after side would have allowed the skipper to move from the belowdecks position to the hiking board and back again.

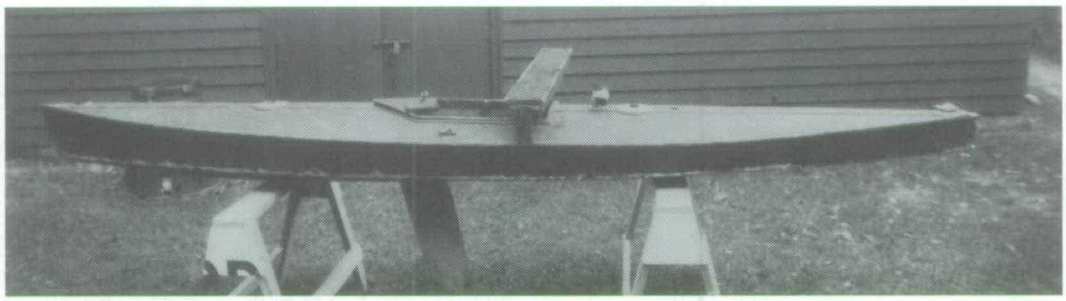

Fig. 6
Gilbert Motor Boat Company canoe, showing sliding seat and footwell. The bow is toward the left.

Its purpose, of course, is to gain additional leverage for the skipper's weight and, with it, additional sail-carrying power. In this simple wooden fitting is the beginning of a rapid, racing-driven evolutionary process that would culminate, in the first quarter of the twentieth century, in an entirely new form of sailing canoe.

The open canoeing tradition was to remain primarily a paddling one, though there were those who adapted the boats for sail. Decked canoes attracted the greatest attention from the sailing racing fraternity, however, and hence

were subjected to intense research and development pressure in the search for speed. An early distinction was evident between British and American decked sailing canoes: the British ones were more heavily built and ballasted, often more like small yachts than canoes, while the American boats were more lightly constructed and less burdensome. In part, this reflected their prevailing sailing conditions: British canoeists often sailed in the open ocean or such areas as the Baltic, while American canoeing was largely done on inland lakes and in bays and harbours.

The first sailing contest between racing canoeists of the two countries in 1886 resulted, not surprisingly, in a decisive victory for the lighter American boats, and design fashion swung in this direction. Rather than ballast the boat down and achieve stability and sail-carrying power through hull shape, the Americans instead utilized leverage, in the form of the crew's weight. Canoe sailors began by moving off the bottom of the boat and sitting on the cockpit edge. However, it was not long before someone hoisted himself even further to windward by means of a plank seat such as can be seen on the Ontario Canoe Company boat.

The effects of this search for leverage with live ballast can clearly be seen in the other canoe under consideration. If the OCC boat is designed in equal measures for racing, cruising and daysailing, the function of the Gilbert boat might be assessed, by comparison, as 80 per cent racing, 20 per cent daysailing and 0 per cent cruising. Features not needed for racing success have become vestigial or have disappeared altogether. The rig is a standing leg o'mutton, with no possibility of being reefed or lowered while underway. The cockpit has shrunk to a self-bailing footwell, and the only sailing position is on deck. The folding centreboard has been replaced with a daggerboard, interestingly similar to those found on windsurfers today, which can be adjusted fore and aft in its slot for trim. The short, fixed hiking board of the OCC boat has turned into a full-blown sliding seat, extending several feet beyond the gunwale. The short deck tiller has been changed to a thwartships model to accommodate the outboard sailing position.

Thus one boat is a market- and customer-driven premium product, designed to appeal to taste and a particular aesthetic of canoe design, having strong formal links to historic canoe forms. The other is a rational, minimalist and ahistorical exercise reflecting the forced evolution caused by racing and consequences of the sailing canoeist's perennial search for sail-carrying power through leverage. Both, however, have in common their origin in a single abstract idea: a canoe fitted to carry sail.

However logical an evolution this was, it was also ultimately to be one of the causes of the decline of canoeing as a popular sport. The use of the sliding seat caused a design transition from multi-purpose boats of wide popular appeal which could be raced, cruised or sailed for recreation, to those so highly refined that they almost would not remain upright when at rest without the counterbalancing of the wind and the skipper's weight. As has happened so often since, the pernicious effect of racing, with its intense evolutionary pressure and its propensity for rule-beating at the expense of form, refined the type almost out of existence, turning it from a useful watercraft to a sail-assisted torpedo. One dismayed canoeist, concerned at the direction his sport was taking, complained to the editor of the influential American sporting journal *Forest and Stream* in 1897 that these sliding seat boats had become "fearful and wonderful machines ... and of no use whatsoever except for a few days' racing at the meet."[25]

The forms of these turn-of-the-century canoes were ultimately shaped by both the social and technical needs of their users. Early multi-purpose cruising boats such as the Ontario Canoe Company canoe reflected the high social status of organized canoeing, and its closed and focussed structure of clubs, organizations and symbols. Exclusive by virtue of their price and the skills required to use them, the canoeists' boats also situated them in canoeing history, being modernized versions of their (noble) "savage" predecessors. These elegant and well-built wooden artifacts allowed for an outdoor experience which sent strong signals about their users' character and relationship to an idealized natural world.

It was not long before the uplifting influences that led to the formation of many canoeing clubs were affected by the racing impulse, however. Comments soon began to appear in canoeing publications about the "true" nature of the sport, the need for Corinthian sportsmanship, and the dangerous influence of racing. When a strict physical logic of leverage, weight and sail area was applied to sailing canoes within the arbitrary limits of racing classes, design evolution

occurred rapidly. Functions that were not highly valued, such as cruising, travelling and all-round use, quickly disappeared from canoe design.

The original multi-purpose style of boat diverged rapidly into two distinct forms: a stable open canoe that anyone could enjoy; and a decked racing boat that few had the skills or inclination to use. A single original design that had been positioned roughly in the middle of a design scale thus diverged into two opposed tendencies that occupied either end of a spectrum of uses. For other sports such as yacht racing, such a design polarization has historically been corrected by changing the applicable rating rules and formulae to start anew. For large-scale organized canoeing at the end of the nineteenth century, however, this split was fatal. Quickly losing its audience to bicycling, the two divergent forms of the recreational canoe were taken to either the cottage or the racecourse, and the middle, popular ground of multi-purpose boats upon which the American Canoe Association had been founded was largely abandoned.

As we move toward writing a material history of watercraft, several things will need to be done. Significant bodies of data need to be recorded to enable detailed descriptions and comparisons at the level of individual artifacts. More so than any other area of maritime history, an understanding of the development of watercraft is dependent upon consistent, high-quality boat documentation. Photographs, archival sources and written descriptions simply do not suffice. The more of this data that is assembled, the better the analytical structure that can later be erected upon it. The taxonomic, systematic natural science model is not an inappropriate place to look for guidance. In the present state of research, there is an acute need for more first-order, descriptive studies.

Though many museums may have only a few small craft in their collections, the aggregate of those holdings can be a powerful tool for understanding maritime history. We also require more histories of specific watercraft types to be written. Each significant regional or national type calls for its own Kenneth Durant to record its history. We also need more of the boat anthropologists, to keep the large view in mind. All of this activity should also be extended to contemporary collecting. Who, for instance, is now writing the anthropology of windsurfing and sailboard design and use, or "personal watercraft," and examining those watercraft forms as expressions of culture?

Glossary

Batten, rib and batten: A batten is a small piece of wood which backs up a seam in the planking on the inside. Rib and batten canoe construction used ribs and battens of the same size stock, with the battens interrupted by the ribs.

Burdensome: A hull of larger volume and hence heavier displacement.

Chine, chine log: The chine is the angle where the bottom of a boat meets the side. A chine log is a timber fitted at that intersection.

Daggerboard: A means of providing lateral plane. A daggerboard slides vertically in a trunk, unlike a centreboard, which pivots on a bolt.

Floor timber: Here, a short piece joining the heels of the boat's frames over the keel.

Gores, stealers: Short, angled pieces of planking fitted in the angles between longer planks.

Leg o'mutton: A triangular fore-and-aft sail, relatively long on the boom for its height.

Rabbett: A step-shaped channel cut along the edge of a piece of wood to match a similar edge cut on the adjoining one.

Scantlings: The dimensions of the parts which go into a boat's hull.

Shell-first, skeleton-first: The two principal methods of ship and boat construction. In shell-first construction, planks are first joined, and the internal framing added later. In skeleton-first, the frames are erected and then covered with planks.

Sheer, sheer clamp: The sheer is the top edge of a boat's hull when viewed from the side. A sheer clamp is a timber on the inside of the hull at this point.

Siding: A boatbuilder's term for the width of a piece. Moulding measures its depth.

Spiling: A method of taking measurements from a plank on the hull in order to fit the next one.

Stem: The foremost timber in a boat, to which the planking is fastened.

Thwartships: Across the beam of a boat, at right angles to its longitudinal axis.

Tumblehome: When a hull is viewed in cross-section, it is said to have tumblehome if the sides incline inward from the vertical at the top.

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La transition des colorants naturels aux colorants synthétiques et ses répercussions

LOUISE LALONGER

Résumé

Le XIX^e siècle vit l'avènement de l'électricité, de la machine à coudre et des colorants de synthèse qui eurent d'importantes répercussions sur l'industrie textile. Dans son étude, l'auteure désire évaluer l'impact de l'apparition des colorants synthétiques sur la production textile. Elle désire également vérifier jusqu'à quel point la tradition a été influencée par les nouvelles découvertes et comment la mode a été marquée par ces changements. Le phénomène ayant une dimension mondiale, l'auteure tentera d'établir des rapprochements entre les courants européens et nord-américains. Elle étayera son propos d'exemples régionaux.

Abstract

The nineteenth century saw the invention of electricity, the sewing machine and synthetic dyes, which had major repercussions for the textile industry. In her study, the author seeks to assess the impact of the appearance of synthetic dyes on textile production. She also attempts to determine to what extent tradition has been influenced by the new discoveries and how fashion has been marked by these changes. Since the phenomenon has a global dimension, the author attempts to draw parallels between European and North American trends. She backs up her remarks with regional examples.

Le XIX^e siècle fut le théâtre de nombreuses découvertes qui viendraient tout bouleverser. L'avènement de l'électricité, de la machine à coudre et des colorants de synthèse amenèrent plusieurs transformations dans les types de production. Ces changements notables se sont entre autres répercutés sur l'industrie textile.[1] C'est particulièrement les nouvelles découvertes dans le domaine de la teinture qui retiennent mon attention. Pour la présente étude, j'aimerais évaluer l'impact de l'apparition des nouveaux colorants synthétiques sur la production textile. Je veux vérifier jusqu'à quel point la tradition a subi l'influence de ces nouvelles découvertes et comment la mode a été influencée par ces changements.

Comme le phénomène a été mondial, j'aimerais aborder le sujet de façon générale sans cerner de région en particulier. Toutefois, j'apporterai quelques exemples régionaux pour illustrer mon propos et je tenterai d'établir des rapprochements entre les courants européens et nord-américains.

Cette réflexion se base sur un dépouillement bibliographique, sur l'analyse de données historiques des principales découvertes et sur des documents publicitaires des distributeurs de colorants, notamment les compagnies Diamant et Ampollina.

Je désignerai par « colorants naturels » les matières tinctoriales provenant de plantes, d'insectes et de coquillages. Le terme « colorant artificiel » s'applique aux teintures produites chimiquement à partir d'éléments naturels alors que les colorants synthétiques sont tirés de la houille de charbon ou de produits pétroliers.

Les progrès de la chimie

La chimie fait des pas de géant entre le XVIII^e et le XIX^e siècle. D'abord avec les recherches des Allemands au XVIII^e siècle, qui conduisent à la création de colorants artificiels. C'est un marchand de couleur berlinois, du nom de Diesbach, qui découvre par hasard, en 1710, comment fabriquer un bleu artificiel qu'on appellera « bleu de Prusse ». Ce composé résulte

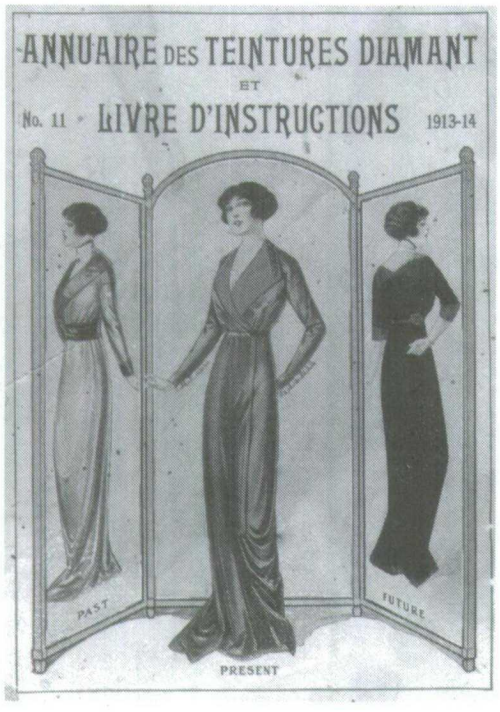

Fig. 1
Page couverture, Annuaire des teintures Diamant et livre d'instruction, *Wells & Richardson Co., 1913.*

d'une combinaison chimique de prussiate, de potasse et de sels ferreux. D'autres chercheurs allemands suivront la même piste de recherche pour créer quelques colorants artificiels.[2]

En 1826, la recherche prend un autre tournant grâce à l'allemand Otto Unverborden qui réussit à isoler une substance extraite de l'indigo, qu'on nommera « aniline », dérivé « d'anil », nom portugais de l'indigo.[3]

Mais c'est seulement en 1856 qu'un étudiant en chimie de 18 ans, William Perkin, arrivera à une découverte capitale, soit la synthèse de l'aniline à partir de goudron de charbon. Le jeune Anglais s'aperçoit qu'il peut tirer une teinture bleue de cette substance, qu'on nommera « mauvéine ». Ce premier colorant synthétique marquera une évolution rapide dans le domaine et mettra fin à l'utilisation des teintures naturelles.[4]

À partir de cette découverte, on fabriquera de nombreux colorants dérivés de l'aniline. Les possibilités d'inventions chromatiques deviennent presque inépuisables. Dès le milieu du XIX^e siècle, l'Angleterre s'empressera de distribuer ces colorants, suivie de près par des firmes françaises, suisses et allemandes. Cette période fébrile verra s'accroître rapidement le nombre de nuances disponibles pour la teinture.[5]

Pendant près d'un siècle, soit de 1850 à 1950, les fabricants de colorants utilisent exclusivement des produits dérivés de la houille de charbon. À partir de 1950, ils utiliseront plutôt des dérivés du pétrole qui offriront de nouvelles possibilités.[6]

Changements apportés par la nouvelle découverte

A) La mode

En Angleterre, la découverte de Perkin provoque un grand engouement pour cette nouvelle couleur mauve. C'est la reine Victoria qui donne « le ton », en portant une robe mauve à l'exposition de 1862. Il ne s'agit pas uniquement d'une mode vestimentaire, puisque le pays édite des timbres-poste teints en mauve. On retrouve également cette couleur dans le langage populaire. Les policiers de Londres se plaisent à diriger la circulation en criant « *get a mauve on* ».[7]

Cet intérêt soudain pour les colorants de synthèse se généralise ensuite à toute l'Europe. Ce phénomène se retrouve sans doute au Québec et on peut croire qu'il a des répercussions sur la mode, dans la couleur. Jacqueline Beaudoin-Ross, conservatrice au Musée McCord, nous décrit la popularité de la couleur prune à Montréal entre les années 1870 et 1880. Elle nous présente une robe de mariée de cette époque et nous indique à ce sujet :

> *... la suprême élégance consistait à porter des couleurs prunes. Dans le numéro du 30 janvier 1877 du journal montréalais The Evening Star, J. Carroll and Co. annonce, sous l'en-tête « New Dress Goods » (Nouveautés en matière de robes), dix sortes de tissus, tous de couleur prune. Et dans le numéro du 31 août 1878 du « Montréal Daily Witness », S. Carsley, ... annonçait « un nouveau lot de toutes les teintes de prunes, la meilleure offre en magasin ».*[8]

Quoique l'auteur ne précise pas de quel type de colorant il s'agit, je me permets de croire que cette variété de tons était obtenue à partir de colorants synthétiques, tels le magenta (Natanson, 1856) et ses variantes, qui offrent plusieurs nuances de prune. J'attribue cette tendance à la variété de produits offerts sur le marché et à l'engouement que cela a provoqué. L'arrivée de ces nouvelles couleurs a sans doute influencé rapidement la mode et la production textile.

Quelques liens peuvent ainsi être établis entre les couleurs en vogue et l'apparition des

produits de synthèse. C'est en regroupant les principaux colorants découverts entre 1856 et 1902 que j'ai pu retracer et mieux comprendre les étapes importantes de leur évolution.[9] Ainsi, les couleurs mises au point entre 1856 et 1869 présentent principalement des tonalités variant du bleu au rouge en passant par les violets et les nuances de prune. On peut croire que ces premières découvertes sont étroitement reliées à des variantes de la mauvéine de Perkin, alors que la décennie suivante (1870 à 1879) voit naître de nombreux colorants dans les tons de jaune, d'oranger et de rouge. Cela est attribuable à la synthèse de l'alizarine (Graebe et Lieberman 1868, Perkin 1869), un produit identique chimiquement à celui que l'on retrouve dans la garance naturelle mais qui offre encore plus de possibilités chromatiques. Déjà la garance était la teinture naturelle qui donnait le plus de couleurs (rouge, orange, rose, chocolat, pourpre) mais l'alizarine de synthèse en procurera davantage.[10] Il semble que les années 1870 et 1880 sont très prolifiques en matière de nouvelles couleurs et que la gamme de produits offerts atteigne son apogée à la fin du siècle.

Si l'arrivée des colorants synthétiques nous apporte une gamme de couleurs beaucoup plus variée, avec des tons plus vifs, il semble que cela n'a pas que des effets heureux. D'après James Laver, la décennie de 1870 voit surgir des tons parfois « criards » et on se permet de juxtaposer différentes couleurs, en alternant les tissus unis et imprimés. C'est aux problèmes d'harmonie des tons qu'il attribue l'apparition de nombreux conseillers en matière de mode. Ceux-ci conseillent les clientes sur la façon de marier les couleurs selon leur teint ou leurs cheveux.[11]

On retrouve ces mêmes préoccupations d'harmonie des couleurs dans une publicité de la compagnie de colorants Diamant de 1913-1914.[12] Ici, le fabricant prévient sa clientèle de l'importance du choix des couleurs et de la façon de les marier avec d'autres. Il indique qu'il est de « bon goût » de placer ensemble les nuances claires en contact avec des nuances foncées de la même couleur. Il donne des exemples de tons qui s'harmonisent ensemble en indiquant les noms de ses produits.

Si de telles publicités incitent les femmes à l'élégance avec des notions « d'harmonie » et de « bon goût », elles incitent également à « suivre la mode ». Dans ce même document, on présente une soixantaine de nuances à réaliser avec les teintures Diamant en les qualifiant de « Nuances populaires pour la prochaine saison ».[13]

C'est par l'intermédiaire des colorants de synthèse que les consommatrices auront davantage accès aux couleurs en vogue et chercheront à suivre la mode. Elles se permettront de reteindre leurs vieux vêtements pour les mettre au goût du jour. D'ailleurs les publicités insistent beaucoup sur ces possibilités de recycler et nous montrent plusieurs exemples où des vêtements « passés de mode »[14] sont récupérés. Une illustration de cette époque est très explicite à ce sujet (voir fig. 1).[15] Ce triptyque nous montre trois variantes de la même robe renouvelée, avec les indications « passé », « présent » et « futur ».

B) Délaissement des teintures naturelles

Même si les produits à l'aniline ont rapidement suscité de l'intérêt, il y a eu une période de transition où l'on a continué d'utiliser simultanément les colorants naturels et les produits manufacturés. En France, par exemple, des analyses scientifiques faites sur des textiles bretons traditionnels ont permis d'identifier clairement cette tendance. Ces tests ont été faits sur une collection de même provenance et datant de la même période, soit avant 1880. Les résultats mettent en évidence l'utilisation de rouge et de vert de synthèse, et la présence de colorants naturels tels la gaude et le pastel pour le vert et le bleu.[16]

Un autre exemple nous révèle cette période de transition dans l'industrie textile des États-Unis. Par la consultation de documents d'archives, des chercheurs ont tenté d'observer comment dix manufactures ont délaissé la garance naturelle pour son équivalent chimique, l'alizarine. Ils ont pu retracer un changement progressif à partir du moment de la mise en marché mondiale de l'alizarine (1870) jusqu'à l'abandon total de la garance (1890). Entre temps, on a utilisé les deux produits à la fois.[17]

On peut facilement comprendre que les utilisateurs de colorants aient progressivement délaissé les produits naturels pour des produits chimiques. En fait, cette progression suit de près l'évolution de la recherche en ce domaine, la mise en marché de ces produits et l'adaptation aux nouvelles technologies. On peut donc croire que c'est à la fin du XIX^{e} siècle que la gamme de produits de synthèse envahit le marché pour se substituer aux colorants naturels. Jusque là, on s'était uniquement approvisionné dans la nature

pour teindre des peaux et des tissus. Il faut maintenant s'adapter à de nouvelles façons de travailler et développer de nouveaux marchés.

Les teinturiers professionnels et les manufacturiers se sont sans doute adaptés rapidement à cette nouvelle technologie qui leur offrait plus de facilité de standardisation, alors qu'on peut croire qu'on retrouve ces produits dans l'utilisation domestique avec un certain décalage. L'accessibilité aux colorants de synthèse et à l'information sur leur mode d'emploi constituent des variables déterminantes quant à leur apparition dans les foyers. En fait, cette accessibilité est dépendante d'un système organisé de production, d'importation et de distribution des produits, qui proviennent principalement de l'Allemagne. Au Québec, il semble que la compagnie Wells & Richardson, distributrice des colorants Diamant (ou Diamond), soit à Montréal dès la fin du XIX^{e} siècle[18], alors que la compagnie Baribeau et Fils de Lévis commence à distribuer les produits Ampollina en 1922 et ce, pour le Canada tout entier[19].

Que ce soit à des fins domestiques ou manufacturières, il y a une période de transition avant l'adoption définitive des colorants de synthèse, mais tous délaissent les colorants naturels. Cette préférence se justifie par de nombreux critères, notamment la stabilité chimique du produit, la résistance à la lumière et au lavage et la variété de la gamme de couleurs. Rappelons que la qualité tinctoriale des produits naturels est dépendante de plusieurs facteurs. Elle peut être affectée par les variations de température selon les saisons ou touchée par des impuretés de la matière première. Pour l'industrie textile, les produits à l'aniline permettent de réaliser des recettes commerciales avec des résultats prévisibles, alors que les colorants naturels demandent un ajustement constant. Comme les produits naturels sont difficiles à entreposer, leurs utilisateurs ne peuvent s'en servir qu'en saison, alors que les produits synthétiques sont accessibles toute l'année et à peu de frais.[20]

Le prix peu élevé des colorants de synthèse et son rapport avec la quantité de tissu à teindre le rend plus compétitif. Un exemple américain nous démontre que pour teindre cent livres de tissu, il faut cinquante livres de garance naturelle, alors que deux livres d'alizarine de synthèse suffisent aux mêmes besoins.[21] On peut comprendre que cela ait une influence directe sur le prix de revient et incite l'industrie textile à adopter ces nouveaux produits.

Quoique le prix de revient ait son importance dans la transition, les auteurs de l'époque (Peck et Earl, 1877, Sansone, 1887) soutiennent que ce changement est principalement dû à la grande variété de couleurs offertes. Ils sont appuyés par des auteurs modernes (Beer, 1959, Farrar, 1974) qui attribuent l'importance de la production des teintures à l'aniline à l'innovation qu'elles apportent dans les couleurs des colorants. [22]

C) Changements technologiques

L'arrivée des colorants synthétiques modifie considérablement les traditions reliées à la préparation des teintures. Ces changements se font sentir entre autres sur les modes d'acquisition. Cela met fin aux activités de cueillette et de culture de produits tinctoriaux qui étaient nécessaires auparavant. La cueillette est le premier mode d'acquisition de nombreuses plantes tinctoriales pour une utilisation domestique et s'exerce occasionnellement selon les besoins et les saisons, alors que les produits cultivés répondent à des besoins plus massifs en fonction d'un marché et de l'exportation.[23] C'est le cas de plantes comme l'indigo, par exemple, qui est cultivé massivement en Asie[24], ou la garance, dont la France et l'Allemagne sont alors de grands producteurs mondiaux.[25] Ces pratiques traditionnelles font place à un système organisé de distributeurs et de fournisseurs mis en place par l'industrie chimique. À des fins domestiques, on achète maintenant des produits prêts à employer au magasin général, chez le pharmacien ou dans les magasins à rayons.[26]

L'usage de ces colorants fait également disparaître des étapes de travail. Avec leur utilisation, fort simple, disparaissent les opérations de macération, de fermentation et de mordançage. En effet, les colorants naturels demandent une certaine préparation. Une fois séchées, les matières tinctoriales sont broyées, hachées ou concassées. On les fait ensuite macérer dans un peu d'eau pendant quelques heures, voire même quelques jours. Cette étape vise à permettre l'extraction des constituants solubles dans l'eau. C'est ensuite la décoction de cette solution qui permettra l'extraction optimale des principes tinctoriaux. On obtient ainsi la solution pour la teinture proprement dite.[27]

Certains colorants insolubles dans l'eau nécessitent une fermentation. Traditionnellement, par exemple, on faisait fermenter l'indigo dans de l'urine pendant une longue période de

temps avant de teindre. Robert-Lionel Séguin, qui a enquêté à ce sujet, a recueilli des renseignements différents auprès d'informatrices du comté de Charlevoix. La période de fermentation varie de une à trois semaines selon chacune d'elles.[28] Dominique Cardon nous apporte un exemple français sur le brou de noix qui est fermenté pendant plus d'un an avant utilisation. La Manufacture des Gobelins laisse fermenter le tout pendant plus de deux ans.[29] Quoi qu'il en soit, on comprend bien que cette technique d'extraction a fait place aux produits chimiques, évitant ainsi une longue préparation.

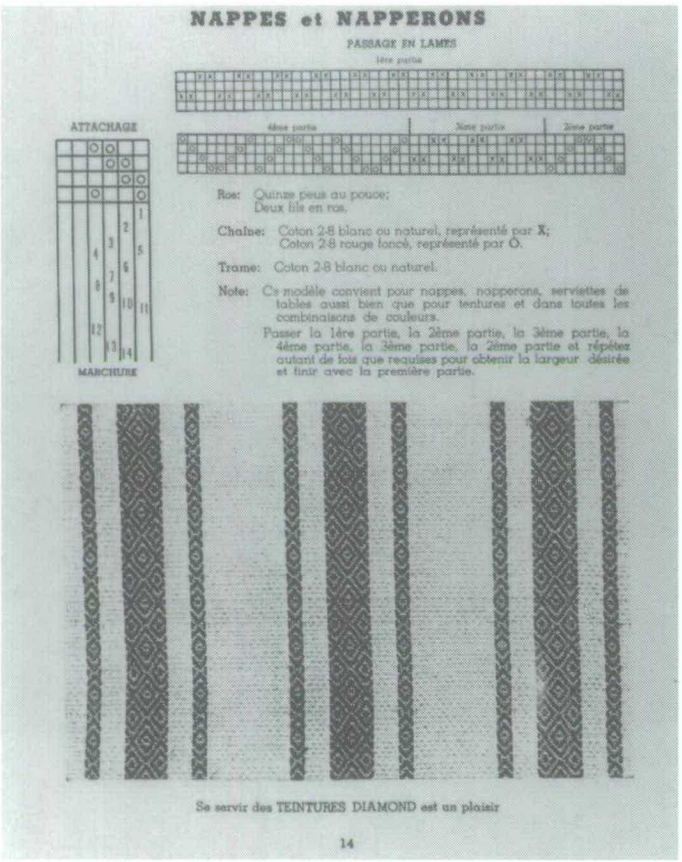

Fig. 2
Modèle de tissage offert en 1943 par la Wells & Richardson Co. dans La magie de la couleur dans les tissus domestiques.

Quant à l'étape du mordançage, elle s'applique aux teintures qui n'ont pas d'affinité chimique avec les fibres textiles. Elle joue un rôle d'intermédiaire entre les colorants et les substances à teindre. Le mordant est un sel métallique utilisé pour fixer la couleur, alors qu'on désigne du terme « altérant » les mordants qui serviront plutôt à varier les tonalités.[30] Cette étape peut se faire soit avant teinture, dans un bain séparé, soit par mordançage simultané, soit après teinture.[31] La réalisation varie selon la nature du colorant, de la fibre à teindre et de la nuance désirée. Avec les colorants synthétiques vendus commercialement, l'opération est simplifiée par l'ajout occasionnel de sel. Souvent ces produits sont vendus en fonction des fibres à teindre et teignent directement, sans intermédiaires. Les nuances s'obtiennent en établissant une proportion entre le poids du tissu et la quantité de teinture ou par le mélange de plusieurs colorants.[32]

L'avènement de cette nouvelle technologie modifie également les modes d'apprentissage tant chez les teinturiers professionnels que chez les utilisateurs domestiques. L'acquisition de connaissances transmises de génération en génération fait place à une formation donnée par l'industrie chimique. L'art de la teinturerie est remplacé par la science des teintures synthétiques utilisées par les chimistes.[33]

Auparavant, les teinturiers-artisans élaboraient leur propre expertise qu'ils transmettaient à leurs apprentis. Avec le développement de l'industrie chimique, particulièrement en Allemagne, les compagnies de colorants veulent s'approprier le marché et assurer la formation relative à ces nouvelles technologies. Ils publient alors des recettes qu'ils envoient aux manufactures pour les inciter à utiliser leurs produits. Cela se voit assez tôt, soit au tournant des années 1880, où sont créées des revues spécialisées pour faire connaître ces recettes, comme *Textile Colourist, Dyer and Calico Printer,* et *Wade's Fibre and Fabric.*[34]

L'industrie tente également de rejoindre par des réclames publicitaires les clients potentiels pour une utilisation domestique. C'est par ce moyen qu'elle réussit à atteindre les utilisateurs chez eux, tant en milieu rural qu'en milieu urbain. Ces documents diffusent des méthodes de travail et de petits « trucs » pour réussir parfaitement ses teintures. L'une de ces publicités fait valoir que :

> *Les résultats que vous obtiendrez seront aussi bons que ceux qu'un teinturier professionnel pourrait obtenir, les nuances seront aussi parfaites que celles d'un manufacturier.*[35]

Ces documents insistent beaucoup sur les possibilités de recycler des vêtements mais diffusent également des modèles pour fabriquer des tapis ou faire du tissage. Ces modèles s'inspirent directement de la tradition. Dans son livret *Diamond Dye Rug Book,* la compagnie Wells & Richardson présente des patrons de tapis

crochetés. Il en est de même pour la compagnie Baribeau et Fils de Lévis, qui distribue les teintures Ampollina et offre des patrons de tapis de 1930 à 1955 environ.[36] Dans les années quarante, les produits Diamant diffusent des modèles de tissage traditionnel (voir fig. 2).[37] Je crois que ces compagnies utilisent la tradition pour se rapprocher de leur clientèle et que leur publicité joue un grand rôle pour faire changer les façons de travailler.

Les retours aux colorants naturels

Même si les colorants naturels ne sont plus en usage au début du XX^e siècle, nous verrons quelques courants qui les feront réapparaître dans l'histoire.

Ainsi, pendant la Première Guerre mondiale, comme les teinturiers américains sont dépendants de produits allemands, ils ont des problèmes d'approvisionnement. Cela provoque un retour temporaire aux colorants naturels, mais sans succès. Pour l'industrie textile, ces teintures sont désuètes et ne peuvent fournir l'éventail de couleurs désirées.[38]

Puis, pendant les années trente, on voit naître un nouvel intérêt pour les techniques artisanales traditionnelles. On se met à expérimenter de vieilles méthodes disparues. Aux États-Unis, par exemple, ce mouvement va encourager les artisans à retourner aux teintures naturelles. Pendant cette période, les Indiens navajos remplacent les produits commerciaux par des colorants naturels. Aujourd'hui, ils sont revenus aux colorants chimiques. Leurs critères sont les mêmes qu'au XIX^e siècle, soient la variété des couleurs, la bonne solidité et l'application facile.[39]

Le Québec connaît ce même retour aux sources. La création de l'École des arts domestiques, de l'École des arts appliqués et de l'École du meuble succède à la redécouverte des métiers artisanaux. Le retour aux colorants naturels s'inscrit dans ce mouvement et s'observe par la publication de documents importants à ce sujet. Oscar Bériau ouvre la voie en publiant *La teinturerie domestique* en 1933. Plus tard, en 1941, Soeur Marie-Alphonse d'Avila, de l'École ménagère de Sainte-Martine, publie deux cents recettes dans *Teintures végétales : extraits des plantes de chez nous.* En Ontario, Douglas Leechman écrit également sur le sujet en 1943 dans *Vegetable Dyes : Make Your Own.* C'est avec le regain nationaliste que les auteurs de

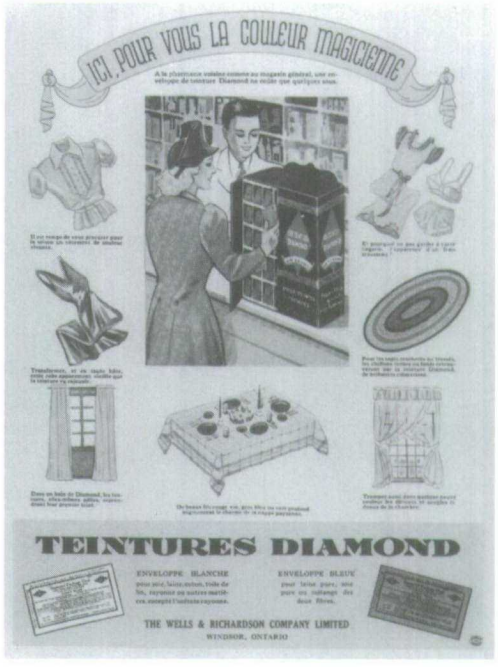

Fig. 3
Suggestions d'applications de la teinture données par la Wells & Richardson Co. dans La magie de la couleur dans les tissus domestiques, 1943.

l'époque recherchent nos particularités régionales. Avec nostalgie, ils veulent retrouver les méthodes de « nos ingénieuses grand'mères ».[40]

La mode des teintures végétales nous revient avec les années soixante-dix. Ce sont les artisans du textile qui s'y intéressent. Ils recherchent ces produits de la nature pour leur originalité. Le caractère unique des colorants naturels les séduit, contrairement à l'industrie textile qui recherche l'uniformité des produits de synthèse.

Indépendamment de ces retours périodiques aux colorants naturels, on voit le déclin d'une activité de teinture domestique dans les années cinquante et soixante avec l'arrivée des fibres synthétiques et les mélanges de fibres qui rendent les tissus plus difficiles à teindre. Les services professionnels de teinturiers disparaissent pour ces mêmes raisons.

Conclusion

L'arrivée des colorants synthétiques a un effet décisif sur les activités de teinture domestique, artisanale et manufacturière. Elle modifie des techniques traditionnelles de teinturerie. Les activités de cueillette, de culture et de préparation des colorants naturels disparaissent, laissant place à des produits commerciaux d'accès et d'utilisation faciles.

On voit naître la standardisation de la production textile à travers le monde. L'industrie

des colorants synthétiques distribue ces nouveaux produits tant pour les besoins domestiques que manufacturiers.

La gamme chromatique devient plus variée, grâce aux recherches chimiques sur les colorants. C'est d'abord la mode qui s'inspire de ces nouvelles découvertes. Puis ce sont les manufacturiers de textiles qui doivent s'adapter et relever le défi pour offrir plus de produits en fonction des besoins saisonniers.

Les consommatrices se voient offrir une plus grande variété de produits tinctoriaux d'utilisation domestique. Elles peuvent suivre la mode en modifiant leurs vêtements par la teinture et renouveler leur production artisanale de textiles en s'inspirant des nouveaux modèles apportés par la publicité.

Malgré quelques retours temporaires des colorants naturels, seules les teintures de synthèse demeurent. Elles sont toujours appréciées pour leur solidité, la variété de leurs tons et leur simplicité d'utilisation.

Tableau des premiers colorants synthétiques (1856-1902)

Nom commercial	*Découvreurs / Date*	*Couleur*	*Remarques*
Mauvéine	W. H. Perkin, 1856	Violet	
Martius Yellow	Ganahl, 1856, Martius, 1864	Jaune	
Magenta	Natanson, 1856, Verguin, 1858, Hoffman, 1858	Violet (pourpre)	Autre nom : Fuchsine
Water Blue In New	A. W. Hofman, 1858, Nicholson, 1862	Bleu	Autres noms : Lyon Blue et Alkali Blue
Safranine T	Greville Williams, 1859	Rouge	
Methyl Violet	Lauth, 1861	Violet	Autre nom : Violet de Paris Mise en marché : Poirrier et Chappat, 1866
Vesuvine BA	C. Martius, 1863	Brun	Autre nom : Bismark Brown
Nigrosine	Coupier, 1867	Noir	
Alizarine	Graebe, Liebermann, 1869	Rouge (foncé)	Brevet : 1871
Uranine A	Baeyer, 1871	Jaune	
Eosine A	H. Caro, 1871	Rouge (orangé)	
Chrysoidine	H. Caro, 1875, O. N. Witt, 1876	Orange	
Chrysoin	P. Griess, 1875	Orange	
Orange I	P. Griess, 1876, Z. Roussin, 1876	Orange	
Orange II	Z. Roussin, 1876	Orange	
Orange IV	O. N. Witt, 1876, Z. Roussin, 1877	Orange	
Erythrosine	Kussmaul, 1876	Rouge (rose)	
Methylene Blue	H. Caro, 1876, Hepp, 1882	Bleu	
Fast Red AV (BASF)	Caro, Roussin, 1877	Rouge	
Diamond Green B	O. Fischer, 1877	Vert	
Archil Red	Roussin, Poirrier, 1878	Rouge (rose)	
Naphthylamine Brown	H. Caro, 1878	Brun (roux)	
Croceine Orange G	P. Griess, 1878	Orange	
Fast Red E	H. Caro, 1878	Rouge (rose)	
Ponceau G	H. Baum, 1878	Orange	
Ponceau RR	H. Baum, 1878	Rouge	
Fast Red B	H. Baum, 1878	Rouge (foncé)	Autre nom : Bordeaux R
Amaranth	H. Baum, 1878	Rouge	
Orange GG	H. Baum, 1878	Orange	
Cochineal Red A	H. Baum, 1878	Rouge	

Nom commercial	*Découvreurs / Date*	*Couleur*	*Remarques*
Cloth Scarlet	R. Nietzki, 1878, Krügener, 1879, Köhter, 1880	Rouge (foncé)	Autre nom : Biebrich Scarlet Remplace la cochenille
Naphthol Yellow S	H. Caro, 1879	Jaune	
Metanil Yellow	C. Rumpff, 1879, Hepp, 1882	Jaune (orangé)	
Wool Red B	R. Krügener, 1879, Rumpff et Grässler, 1879	Rouge (foncé)	
Diamond Green G	Bindschedler, Busch, 1879	Vert	
Light Green SF Bluish	Köhler, 1879	Vert	
Synthetic Indigo	Baeyer, 1880	Bleu	Sur le marché en 1897
Azo Flavine 3R	E. Knecht, 1880, Charvolin, 1880, Ter Meer, 1881	Orange	
Ponceau 3RO	C. Rumpff, 1882	Rouge	
Ponceau 6R	L. Limpach, 1882	Rouge (rose)	
Cotton Scarlet	L. Limpach, 1882, Gans et Hoffmann, 1883	Rouge	
Quinoline Yellow	Jacobsen, 1882	Jaune	
Kristallponceau 6R	M. Hoffmann, 1883	Rouge	
Auramine	Kern, Caro, 1883	Jaune	
Crystal Violet	Kern, Caro, 1883	Violet	
Victoria Blue B	Kern, Caro, 1883	Bleu	
Tartrazine	H. Ziegler, 1884	Jaune	
Congo Red	P. Böttiger, 1884	Rouge (rose)	Premier colorant direct
Brillant Yellow	Bender, Schultz, 1886	Jaune	
Alizarine Red SS	M. L. B., 1886	Rouge (rose)	
Alizarine Yellow GGN	R. Nietzki, 1887	Jaune	
Rhodamine B	Cérésole, 1887, Homdka, Boedeker, 1888	Violet (rose)	
Patent Blue V	Herrmann, 1888	Bleu	
Amino Black 10 B	M. Hoffmann, 1891	Noir	
Flavazine L	C. Möllenhoff, 1892	Jaune	
Victoria Blue R	Nachtvogel, Reingruber, 1892	Bleu	
Rhodamine 6G	Bernthsen, 1892, Schmid et Rey, 1892	Rouge (rose)	
Indanthrene Blue RS	Bohn, 1901	Bleu	Premier colorant à cuve
Diamond Black	Vers 1901	Noir	Remplace le bois de campêche
Amido Naphthol Red G	M. L. B.*, 1902	Rouge	
Azo Fuchsine 6 B	M. L. B., 1902	Violet (rouge)	

* Abréviation de Meister, Lucius et Bruning Farbwerke.

Ce tableau a été compilé à partir des références suivantes :

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Notes

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2. *Ibid.*, p. 118.
3. *Ibid.*, p. 120.
4. *Idem.*
5. Martine Jaoul *et al.*, *Des teintes et des couleurs*, Dossiers ATP 2 (Paris, s.n., 1988), p. 60-61.
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7. Rita-J. Ardosko, *Natural Dyes in the United States* (Washington, Smithsonian Institution Press, 1968), p. 9-12.
8. Jacqueline Beaudoin-Ross, *Formes et modes : le costume à Montréal au XIX^e siècle* (Montréal, Musée McCord d'histoire canadienne, 1992), p. 38.
9. Voir tableau.
10. Judith Lopez et Jane Farrell-Beck, « What Colored the Transition from Mader to Alizarine ? », *Clothing and Textiles Research Journal* (vol. 10, n° 3, 1992), p. 42.
11. James Laver, *Histoire de la mode et du costume*, L'univers de l'art (Paris, Thames & Hudson, 1990), p. 188.
12. *Annuaire des teintures Diamant et livre d'instructions* (Montréal, The Wells & Richardson Co., n° 11, 1913-1914), p. 32.
13. *Ibid.*, p. 33.
14. *Ibid.*, p. 6.
15. Voir annexe, *Annuaire des teintures Diamant*, page couverture.
16. Jaoul, p. 91.
17. Lopez et Farrell-Beck, p. 36-43.
18. *Diamond Dye Rug Book* (Montréal, The Wells & Richardson Co., [vers 1900]).
19. Jocelyne Mathieu, *Faire ses tapis à la mode de l'Île d'Orléans* (Montréal, Éditions Jean Basile, 1980), p. 99.
20. Lopez et Farrell-Beck, p. 41.
21. *Ibid.*, p. 39.
22. *Ibid.*, p. 42.
23. Jaoul, p. 27.
24. Rufino, p. 11.
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26. Mathieu, p. 99.
27. Dominique Cardon, *Guide des teintures naturelles* (Paris, Delachaux et Niestlé, 1990), p. 24.
28. Robert-L. Séguin, « L'art de la teinturerie en pays de Charlevoix », *Ethnologie québécoise 1*, Cahiers du Québec (Montréal, Hurtubise, 1972), p. 192-193.
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30. Oscar-A. Bériau, *La teinturerie domestique*, nouv. éd. (Ottawa, s.n., 1980 [1933]), p. 9.
31. Cardon, p. 31.
32. *Annuaire des teintures Diamant*, p. 21-33.
33. Lopez et Farrell-Beck, p. 36.
34. *Ibid.*, p. 40.
35. *Annuaire des teintures Diamant*, p. 2.
36. Mathieu, p. 99.
37. *La magie de la couleur dans les tissus domestiques* (Montréal, s.n., 1943), 34 p.
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39. *Ibid.*
40. S^r Marie-Alphonse d'Avila, *Teintures végétales : extraits des plantes de chez nous* (Montréal, s.n., 1941), p. 3.

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Rooms of Their Own: The Nurses' Residences at Montreal's Royal Victoria Hospital[1]

ANNMARIE ADAMS

Abstract

In 1906, prominent Montreal architects Edward and William Sutherland Maxwell designed a new nurses' residence for the Royal Victoria Hospital. This paper offers an analysis of gender in a large, late nineteenth-century city hospital, the Royal Victoria, as well as an examination of the issues involved in designing a modern building type – the nurses' residence – in early twentieth-century Montreal. Precariously poised between private and public, the architecture of the nurses' residence clearly illuminates the equally controversial place of women professionals in Canada's evolving health-care system.

Résumé

En 1906, d'éminents architectes montréalais, Edward et William Sutherland Maxwell, ont conçu les plans d'une nouvelle résidence d'infirmières pour l'Hôpital Royal Victoria. Cet article fait l'analyse de l'effectif masculin et féminin dans un grand hôpital urbain de la fin du XIX^e siècle, le Royal Victoria, de même que l'examen des questions inhérentes à la conception d'un édifice moderne de ce genre – une résidence d'infirmières – au début du XX^e siècle à Montréal. Se situant précairement à mi-chemin entre le public et le privé, l'architecture de la résidence des infirmières illustre également la place controversée des femmes de profession libérale dans le système évolutif des soins de santé au Canada.

In May 1905 Professor Percy Nobbs of McGill University recommended the design of Edward and William Sutherland Maxwell as submitted in the limited competition held for the new nurses' residence at Royal Victoria Hospital (RVH) (Fig. 1).[2] Certainly his choice of architect for the project came as no surprise. The Maxwell brothers had designed many of the gracious mansions which hugged Mount Royal to the west of the hospital, inhabited by the wealthy families who supported the hospital and attempted to direct its future.[3]

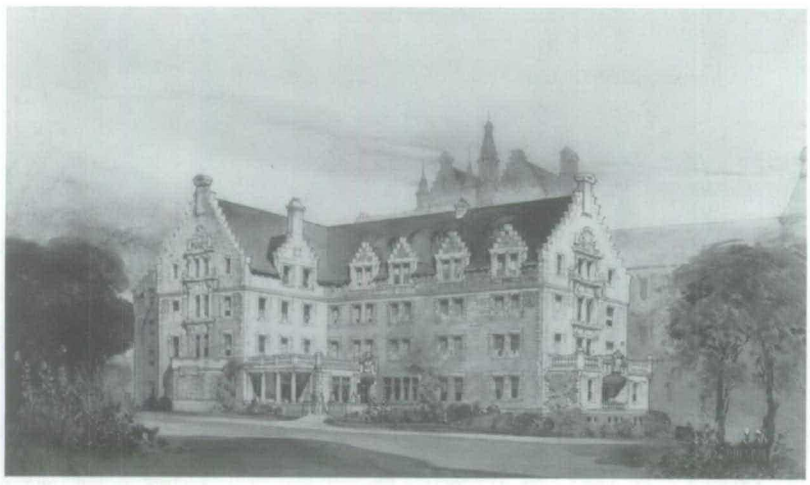


Fig. 1
Maxwell watercolour perspective of the nurses' residence. (Courtesy Canadian Architecture Collection, McGill University)

Other local architects, however, were commissioned to extend the building soon after its completion. In 1917, Hutchison and Wood, who had placed second in the 1905 competition, designed an addition to the north of the Maxwell building; the following year they added a kitchen.[4] In 1931–32, the building was expanded once again. Lawson and Little's new wing to the west of the original nurses' home provided 132 additional rooms, as well as a gymnasium, reference library, dietetic laboratory, and lecture and demonstration rooms, for the expanding population of student nurses at the RVH.[5]

Rather than focus on the choice of architects by the hospital administration, however, this paper examines another side of the institution's architectural history, the complex relation

between the architectures of the Royal Victoria Hospital and its expanding nurses' residence. Precariously poised between private and public, the building and its subsequent additions reveal the truly paradoxical relationship of domestic and institutional women's architecture in the early twentieth century. A real "room of one's own," at least for nurses, offered both autonomy and restraint at once.

The educational program for nurses based at the Royal Victoria Hospital did not begin with the realization of the Maxwells' new residence. Since the founding of the Training School in October 1894, nursing students at the RVH had lived amidst the large, open wards, exposed to the fetid air, contagious diseases, and never-ending duties of turn-of-the-century nursing.[6] In earlier plans of the Royal Victoria Hospital, the women who worked day and night, trained countless others, and cared for the city's "sick and injured persons of all races and creeds, without distinction," had few rooms of their own.[7]

Unsigned plans of the hospital dated 1905 (which were in the possession of the Maxwells) may show some of these spaces in the original hospital intended for nurses but never built: a large dining room in the western section of the administration block (on Level F) and a single space intended for the head nurse in the east tower (Level E).[8] The original drawings for the hospital, however, which also do not necessarily reflect what was constructed, show a series of small rooms and a waiting room for nurses in the central administration building, in addition to a tiny space "with inspecting windows, which command the entire wards."[9] There was also a special office on the principal floor in this early scheme assigned to the Lady Superintendent.[10] There is little evidence however, at this point, to ascertain where the first nurses at the RVH may have slept.[11]

The main building of the RVH was designed by British architect Henry Saxon Snell in 1889–93, who was well-known in England and Scotland as the designer of workhouses and hospitals, and as the author of two significant books, *Charitable and Parochial Establishments* (1881) and *Hospital Construction and Management* (1883). A central administration block and two long and narrow open wards form a U-shaped ensemble facing south, towards McGill University, with which the hospital is affiliated (Fig. 2). Influenced by the ideas of Florence Nightingale, Snell's building was a "pavilion hospital," in which the separation and isolation of both patients and diseases were thought to discourage the spread of infection.[12] Constructed of Montreal limestone, the hospital was also distinguished by romantic turrets framing generous sun porches at the corners of its imposing medical and surgical wards. Snell modelled the Montreal hospital on Edinburgh's Royal Infirmary, constructed by David Bryce in 1870. This "Scottish baronial style" pleased the hospital's upper-class patrons, whose families had emigrated from Scotland.[13]

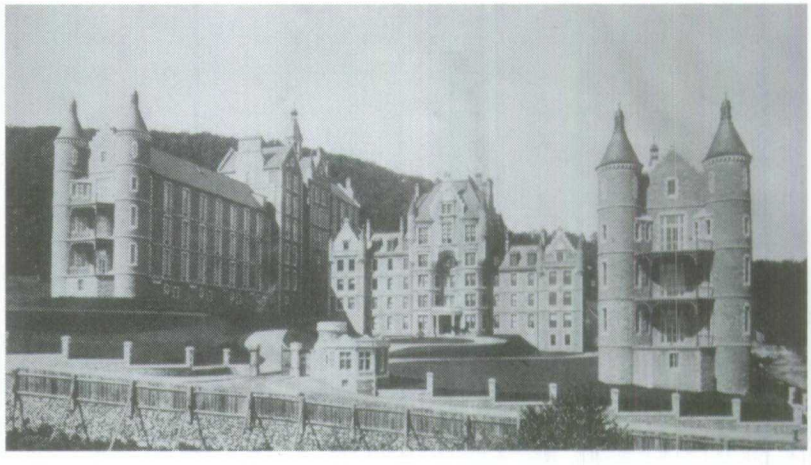


Fig. 2
Photograph by William Notman and Son of the Royal Victoria Hospital, designed by Henry Saxon Snell in 1889–93. This view shows Pine Avenue, its intersection with University Street, and the wooded slopes of Mount Royal. (Courtesy McCord Museum of Canadian History, Notman Photographic Archives)

The construction of the new residence was intended to improve the daily lives of the nurses at the busy urban hospital. Separate quarters were considered particularly imperative after a fire in 1905 damaged many of the nurses' bedrooms on the fourth floor of the Snell building, forcing them to sleep in the surgical wing for several months.[14] Adjoining the ventilation tower of Snell's west or surgical wing on the slopes of Mount Royal, the Maxwells' five-storey, fireproof residence gave the nurses private space within their sphere of work, and status and visibility in the community (Figs. 3 and 4). In its heavy masonry construction, stepped gables, and details intended to evoke a particularly Scottish medical tradition, the new building mimicked, to some extent, its older neighbour, to which it was directly connected through a passageway above the east entrance.

The RVH nurses' home also drew heavily on middle-class domestic architecture, offering its aspiring residents 114 bedrooms, ten sitting rooms in which to socialize in small groups, a grand dining room, and a sequence of elegant spaces on its west side, including a library, liv-

ing room, anteroom, and a large assembly hall with a stage. These spaces were deliberately home-like, intended to reflect the residential function of the new building and were given special emphasis in the massing and elevations of the building. The nurses' home as a building type, at this early stage of its development, knew nothing of the more institutional classrooms and demonstration labs characteristic of later nurses' homes.[15] The education of nurses at this time was largely conducted in the hospital itself.[16]

Even the siting of the building was romantic. Nestled among the trees and poised on the steep ground west of the Snell building, the original nurses' residence was only partially visible from Pine Avenue, the busy thoroughfare in front of the RVH. The winding pathways and obliquely-placed gateways of the growing hospital complex ensured that the residence was mostly seen in perspective views.

The agitated silhouette of the home's stepped gables, which were presumably inspired by Snell's extensive use of the Scottish feature on the hospital wards, ventilation towers, and administration block of the earlier building, added to the romantic perception of the building. So did the fact that the Maxwells' nurses' residence was the first major extension to the hospital to break the apparent symmetry of Snell's monumental courtyard.[17] This gesture expressed the newer building's non-institutional nature, which was further differentiated by the proliferation of dormers and stone railings on the Maxwell building. Indeed, the Maxwells' perspective view (Fig. 1) emphasizes their building's isolation from the Snell hospital, whose west tower and ward loom behind the new building in the drawing. The vantage point selected for the drawing and for many photographs (Fig. 5) of the building completely obscured the residence's connection to the

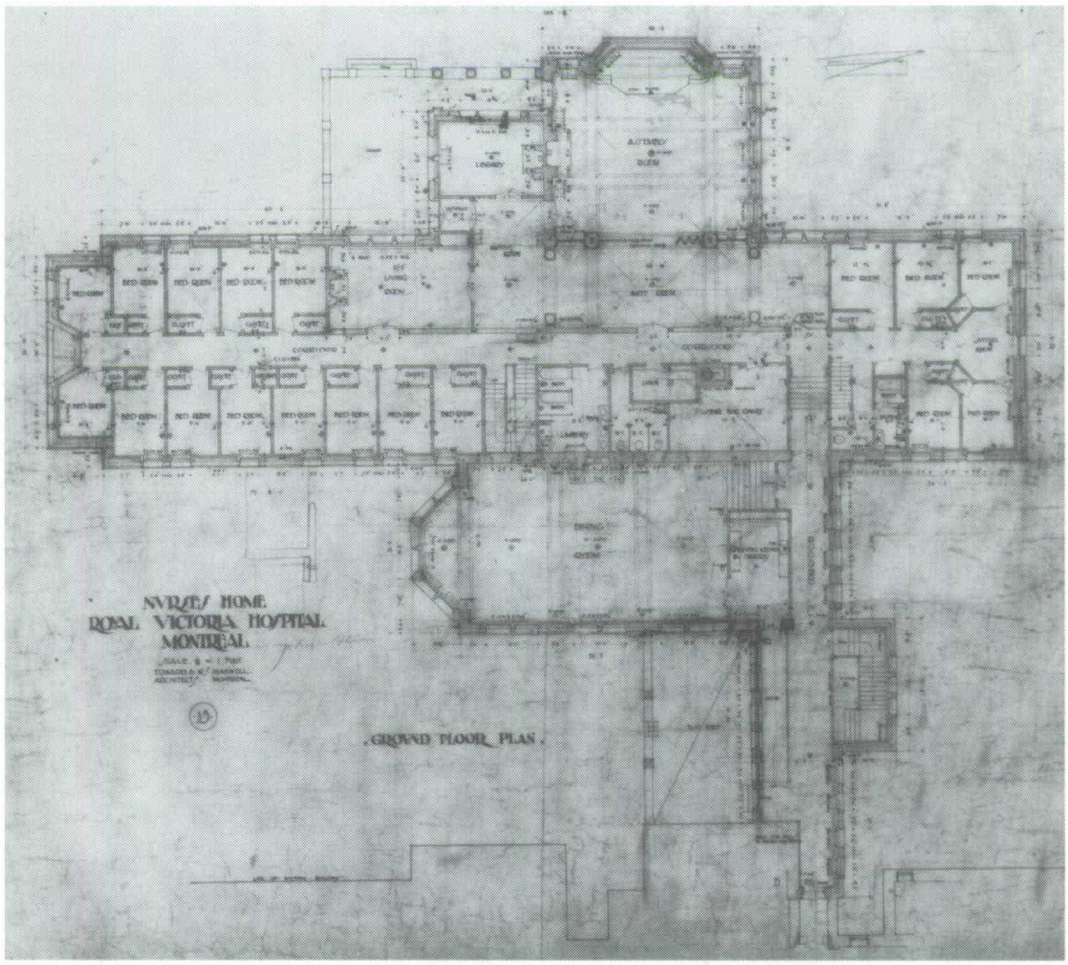
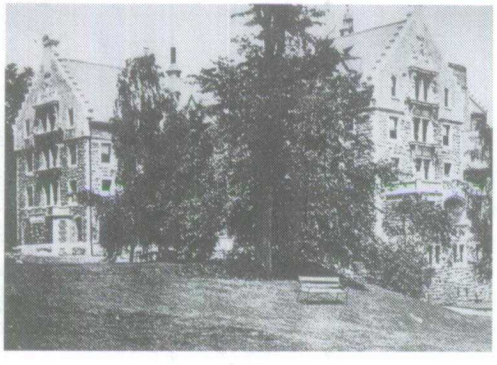


Fig. 3
Ground floor plan of the nurses' residence by Edward and W. S. Maxwell. The connection to the original hospital by Henry Saxon Snell is at the bottom of the drawing. (Courtesy Canadian Architecture Collection, McGill University)

hospital, making it appear, instead, as a free-standing, isolated (and therefore smaller), domestic structure.

This idea of a separate, seemingly domestic structure situated in a romantic landscape was essential to the experience of the first nurses' residence. In addition to the winding flagstone path, which, as one resident of 1933 described, "entices us to follow whither it doth lead; we yield and follow it to the door of the Home,"[18] the location of the nurses' residence to the west of the hospital ensured that it was seen against the backdrop of Mount Royal's wooded slopes (Fig. 6). The area above the original hospital was vacant at this time; Percy Nobbs' own Pathological Institute was constructed to the east in 1924, across University Street from the Snell building. As was the case with many late nineteenth-century institutions for women, particularly colleges, it is likely that the western site was considered more appropriate for the nurses' residence because of its more natural, "untouched" character.

This association of women and wilderness was central to the process of suburbanization in the nineteenth century, as well as in the location of the first colleges for women at universities, which were typically relegated to the periphery of the campuses or even cities. It stemmed from long-established conceptions of nature, understood in the late nineteenth century as healthier, safer, and more beautiful than the unpredictable, industrialized city.[19] In the cases



of both suburbs and early colleges, this widespread belief that women required protection from the dangers of urban life meant that they were removed or separated from centres of power, which tended to be located in more urban (less natural) locations.[20]

The eastern section of the large RVH site (both sides of University Street) has been perceived for a century as a more masculine, technology-oriented (urban) area. In addition to several prestigious medical buildings, it housed the power house/laundry building (1900) and ambulance garages (1911), while the western and northern edge of the roughly triangular site – the steep, rocky, wooded mountainside – was reserved for women (and wealthier patients).[21] This edge still today is marked by the Allan Memorial (a renovated mansion), the former nurses' residence, the Ross Pavilion (1915–16), and the maternity hospital (1925–26).[22] Just beyond lie the heavily wooded, rocky slopes of Mount Royal.

Despite the separateness of the building as expressed in the drawing and photographs, the actual connection of the nurses' residence to the hospital building proper was a blatant statement of the institution's expectation of total commitment on the part of its student nurses. The narrow passage, carefully detailed by the architects, expressed – maybe even ensured – the fact that the nurses' six-and-a-half-day work week left little time for any life outside the hospital.[23] The actual intersection of the hospital and nurses' residence was given elaborate architectural attention; the Maxwells' designed a special door for the juncture.[24] Its decorative ironwork must have warned unwelcome visitors of the more private, domestic quarters beyond.

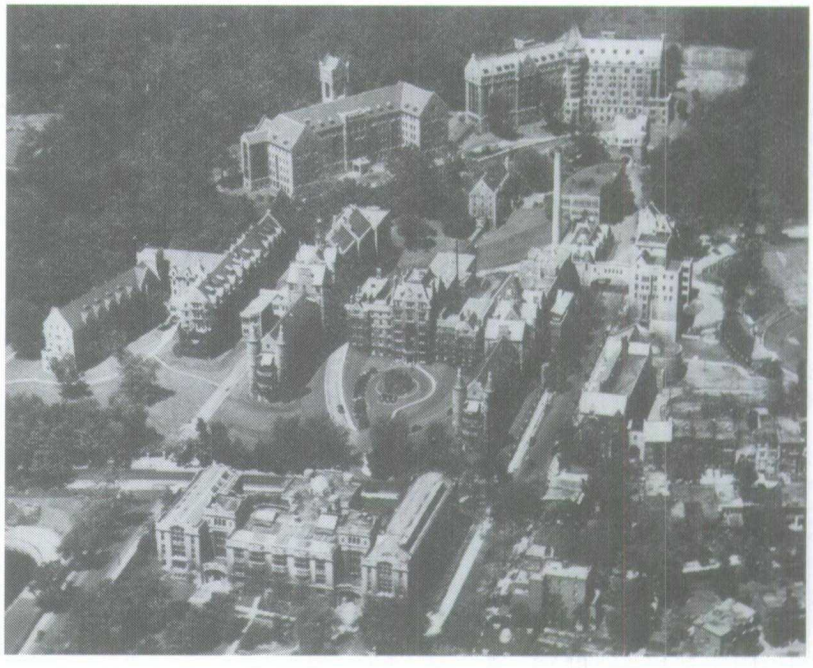


Fig. 4
Aerial photograph of the Royal Victoria Hospital, Montreal. (Courtesy Royal Victoria Hospital)

Fig. 5
Photograph taken in 1907 of the nurses' residence by Edward and W. S. Maxwell. The building nearly always appeared in drawings and photographs as a picturesque, free-standing house, rather than as an addition to an institution. (Courtesy McGill University Archives)

This close connection between hospital and nurses' residence was uncharacteristic of buildings constructed later in the century. Indeed, the influential *Survey of Nursing Education in Canada*, conducted by George Weir in 1932, recommended that nurses' residences be separated from hospitals, allowing "adequate opportunity for privacy, rest, quiet retirement for study and for cultural recreation."[25] By then the modernization of both the hospital and the profession of nursing (and women in general) meant that nurses could demand a certain degree of autonomy from the hospital. This autonomy was expressed in spatial terms by the physical distance separating their places of residence and work. Edward Stevens, an expert on hospital architecture and designer of two major buildings at the RVH, described the separation of residence and hospital in the 1920s as beneficial to the patients, taking the nurses' need for recreation for granted.

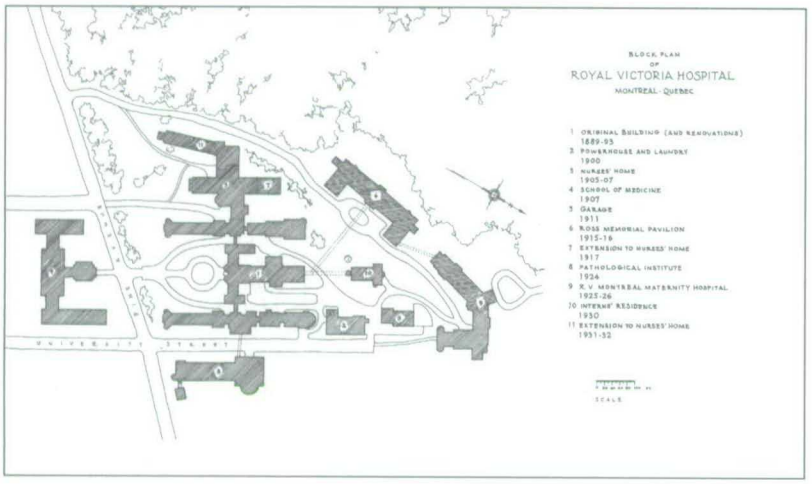


Fig. 6
Site plan of the Royal Victoria Hospital showing selected buildings. (Jennifer Beardsley)

> *Any hospital of considerable size should have its nurses' residence. This should be a separate building, not too remote from the hospital, but far enough away so that the noises of an entertainment, a dancing party or a romp will not disturb the patients.*[26]

Stevens also emphasized the need for nurses to "go out of the environment of the sick room, out of the sound of suffering, out of hospital smells, and in fact out of the hospital atmosphere."[27] In this earlier period of development, however, the need for nurses to escape their workplace was unacknowledged in spatial terms.

The building's interiors, too, were quite domestic in terms of their physical form, as well as their intended use. Photographs of the new wing added by Lawson and Little show the social spaces typically provided for nurses throughout the century. The new reference library, for example, replaced the earlier library by the Maxwells which was subsumed in the new wing's entrance, while a new gymnasium extended from the Maxwells' original reception room (Fig. 7).[28] These rooms were furnished with comfortable chairs and tables, typical of middle-class houses at the time. The furniture was arranged casually, loosely grouped around fireplaces and pianos, probably intended to simulate intimate, home-like gatherings.

The yearbook praises the domestic character of the new residence, remarking on the foyer's "soft lights," which, the author suggested, "invite us to linger." The reception room on the first floor, "tastefully and comfortably furnished," was the setting for bridge parties and teas. The library, shown here, also illustrated in the yearbook, was "luxuriously furnished with piano, chesterfields and occasional chairs."[29]

Martha Vicinus has pointed out how many early buildings for women – colleges, schools, settlement houses – looked like large houses. This domestic imagery was probably intended to smooth the transition for middle-class women to the world of paid work, while at the same time offering the promise of gentle protection in that realm. "The surroundings," says Vicinus of the first colleges for women in England, "bespoke permanence, seriousness of purpose, and the same solidity that marked the middle-class families from which the bulk of them came."[30] The house-like appearance of the RVH nurses' residence probably assured anxious parents, too, that their daughters would be looked after, protected, and separated from the hospital, the street, and the city beyond.

The class-conscious profession of nursing may also have presumed that the association of the residence with upper-middle-class houses would attract young women from wealthier families. Just as the nurses' uniforms made young graduates feel "dignified and poised," the new building may have been intended to impose middle-class values on working-class women, whose backgrounds were increasingly unacceptable to the profession in the decades following Nightingale's sweeping reforms.[31] Edward Stevens pointed to the domestic character of the architecture, expressing concerns over both class and performance:

The more attractive and homelike this building can be made and the more alluring it can be made to the young woman who is taking up nursing, the better will be the class of women who will come to it and, in the end, the better will be the care that the patient will receive.[32]

From this perspective, Nobbs had chosen the ideal architects; the Maxwells were masters of domestic design. Indeed, mansions designed by the brothers in the surrounding neighbourhood for prominent officers and benefactors of the hospital featured many of the same characteristics as the nurses' residence. Henry Vincent Meredith was president of the RVH from 1913 to 1929. His family's home, built in 1894, was probably the closest Maxwell house in terms of physical proximity to the hospital. It comprised elegant public rooms, expressed on the building's exterior, with private family spaces (Fig. 8).[33] Like the nurses' residence, it boasted fine wood panelling and gracious circulation sequences; like all upper-middle-class residences of its time, it saw the strict separation of family and servants, men and women, adults and children. Its rooms were highly specialized and elaborately decorated. It is an ironic twist of fate that this house (and several others designed by the Maxwells) became part of the institution when bequeathed to the hospital later in the century.[34]

Although there were no special apartment buildings for working women constructed in Montreal, as there were in both New York and London, the city had a well-established landscape of residences for women.[35] Montreal's many convents constitute an interesting example of extremely sophisticated (and large) residential blocks, which were often combined with enormous hospitals.[36] Like the RVH, the convents were typically H- or U-shaped ensembles of narrow greystone buildings. The Montreal convent was usually four or five storeys, capped by steep gable or hipped roofs with dormer windows. Convent elevations featured repetitive rows of uniform windows, with little indication of the variety of overlapping spaces within the building.

A closer neighbour to the Royal Victoria Hospital was the Royal Victoria College (RVC). The first residential college for women at McGill University, it was founded in 1896.[37] The original RVC, designed by the well-known American architect Bruce Price, was completed in 1899.[38] It comprised classrooms and a huge dining room on the ground floor, while the assembly hall, library, parlour, and more classrooms were on the first storey. The upper two floors of RVC had variously shaped bedrooms and shared sitting rooms, arranged along a straight corridor. The hospital and the residential college shared more than a concern for women; both were established through bequests by wealthy benefactor Donald A. Smith, or Lord Strathcona. It was he who approved the idea of a separate building as a home for nurses at the Royal Victoria Hospital.[39]

In spite of the traditional, domestic attributes of the nurses' residence, the building type became a trademark feature of the "modern" hospital throughout urban North America. An implicit assumption in the development of the type was that the more efficient the nurses' residence, the more efficient the hospital in general. This led to the gradual inclusion of educational spaces within the program of the nurses' home, a mark of both decreasing reliance on the hospital per se as the primary site of nursing education and of increased specialization within the nursing profession. "Modern" nurses' residences built after the 1920s included social spaces that tended to be multifunctional, accommodating complex changes in use, relative to the earlier near-replicas of traditional domestic spaces. An example of this is the transformation of the Maxwells' assembly room of 1905 into the expanded assembly room/gymnasium space of Lawson and Little in the 1930s. "It is a

Fig. 7
This photograph shows the Maxwells' reception room in the foreground and the Lawson and Little gymnasium in the background. (Courtesty Royal Victoria Hospital)

Fig. 8
Henry Vincent Meredith residence, designed by Edward and W. S. Maxwell in 1894. (Photograph by Brian Merrett)

convertible room appearing now as a ballroom, now a gymnasium and again as a lecture theatre, seating comfortably two hundred and fifty persons," boasted the 1933 yearbook. Despite this "modern," multifunctional conception of the room, social rooms in nurses' residences were typically furnished in an extremely conservative manner. The rooms at the RVH, for example, featured oriental rugs, upholstered armchairs and couches, Windsor chairs, and heavy draperies with sheers.

The basement level, reflecting the full integration of educational spaces into nurses' residences by this time, housed the classrooms and labs.[40] Although this "teaching unit" occupied an entire floor, these rooms received no special treatment in the massing or elevations of the extension. In terms of planning, however, the educational rooms were considered extremely up-to-date, planned as they were on "scientific" principles. The classroom, for example, had a sloping floor, allowing each student to view the blackboard in the front of the room; the demonstration room included beds, model trays, and mannequins, simulating the real hospital environment next door.[41]

At the same time as the building saw the introduction of these supposedly modern features, the nurses' residence was still an arena in which the private lives of nursing professionals could be closely supervised and controlled by the hospital administration. Student nurses could not marry; they kept strict curfews and their friendships were carefully monitored.[42] In the 1920s, nurses were required to wear hats when leaving the building and to return home by 10:00 p.m. Smoking, dating the so-called "housemen" (residents), or mentioning the issue of salary were strictly prohibited.[43]

Lawson and Little's monumental extension to the Maxwells' building in the early 1930s gave physical form to many of the restrictions imposed on nurses' lives. The new building continued the general massing of the earlier residence by extending the west end of the Maxwell project with a new entry sequence (through the former Maxwell library). This hallway led to the generous gymnasium behind the former stage of the Maxwell assembly room. A medieval-revival tower housed the elevator, another modern feature.

The tower also marked the crossing of this long hallway and the double-loaded corridor that commanded the more residential section of the new extension. Like the educational rooms in the basement, bedrooms in the new wing were considered extremely up-to-date, "artistically furnished in a green, rose or tangerine colour scheme."[44] Special bedroom furniture, like the multifunctional social spaces in the new wing, served several purposes at once. A single piece served as dresser, desk, and bookcase, for example.[45] The section of the building running from the elevator lobby in the tower, southwards, toward Pine Avenue, was known as "peacock alley," because of its bright colours and highly decorated appearance.[46]

The expansion of the residence so soon after its completion may have sprung from the hospital's desire to segregate nurses even more than the original home prescribed. Of great concern to the hospital administration, after all, was the fact that, even after the construction of the original residence, student nurses continued to have close contact with the male staff. In the early 1920s, for example, when the Maxwell building no longer accommodated the number of nurses working at the RVH, students whose names began with the letters A through J had been housed in part of the former Ward K, which had been converted into a temporary residence. The other half of the former ward was occupied by the "housemen" (residents), separated from the student nurses by only a particle-board partition. "In no time a direct communication system had been established," recounted Eileen Flanagan 50 years later, "by means of a clothes-

line stretched across the alleyway between the two wings. Many a note and batches of home-made candy were passed across."[47]

This notion of the necessary spatial confinement of nurses, no doubt stemming from their youthful, unmarried state and selfless commitment to helping others, was expressed in the Canadian architectural press throughout the twentieth century. Advertisements for building products in the *Journal of the Royal Architectural Institute of Canada,* for example, into the 1960s, frequently featured nurses with architectural components which emphasized hygiene, safety, and quiet (Fig. 9).[48] Nurses shown with locks and doors emphasized their roles as "guardians" of the all-important threshold. This pointed juxtaposition with doors and door hardware may also have been an explicit reference to nurses' purity and chastity; the thresholds depicted in the press, in this way, implied the containment of women in spaces controlled by men.

Fig. 9
Advertisement for Corbin locks from Architecture Canada (Jan. 1968): 8. This image is typical of the way nurses appeared in the Canadian architectural press juxtaposed with building products that emphasized the notion of "threshold."

Nurses' alleged endorsement of "quiet" materials, such as acoustic ceilings and flooring, may have reflected their supposedly passive qualities.[49] Nurses at the RVH were constantly threatened with expulsion and "never made to feel that we were in any way indispensable to the illustrious establishment." "Well, it will only take a car ticket to take you home," claimed Lady Superintendent of Nurses Mabel Hersey to new student Eileen Flanagan in 1920. A teacher and member of the first graduating class, Nellie Goodhue, apparently repeatedly told her probationers: "If any of you wishes to leave, it will cause no more effect than dipping a finger in a pail of water and pulling it out."[50]

This confinement and surveillance of student nurses in early twentieth-century hospitals was primarily the responsibility of the head nurse, or Lady Superintendent. Lawson and Little's plans of the early 1930s reflect the important place occupied by Miss Mabel Hersey, who was superintendent from 1908 to 1938 and figured centrally in the development of nursing education and the profession in Quebec.[51] While the inclusion of the classrooms, library, and gymnasium must have appeared as fairly progressive at the time – the institution's maintenance of the students' minds and bodies – the subtle renovations made to the Maxwell building by the later architects are extremely telling. Four bedrooms in the south end of the original building were transformed at the time of the new addition into a relatively luxurious four-room apartment for Hersey. Critical to its function in the growing complex, of course, was the new suite's strategic position overlooking the entrance area and stairs. Inside the building, Miss Hersey could easily survey the long corridor of the residence's main floor.

This form of direct surveillance was unknown in other residential sections of the hospital complex and may not have even occurred in the earlier nurses' residence of 1905, as the Medical Board had suggested that the Lady Superintendent's quarters should remain in the Administration Building, even after the construction of a separate Nurses' Home.[52] The (male) Superintendent of the entire hospital, for example, did not even live at the hospital, underlining again this important question of which employees were permitted to live apart from their place of work.

Medical interns, who did live at the hospital, moved freely throughout the institution and were seen as fundamental members of the hospital establishment. In 1930, the RVH constructed a special residence for interns, designed by Ross and Macdonald, on the foundations of Ward S, the old isolation pavilion and original hospital laundry building. The new four-storey,

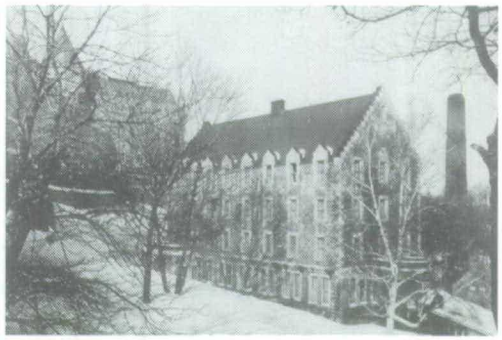


Fig. 10
Interns' building, designed by Ross and Macdonald, 1929. (Courtesy Royal Victoria Hospital)

fireproof home for 40 interns was located directly behind Snell's administration block, in a commanding position at the centre of the entire complex, between the historic building and the new, more "scientific" hospitals designed by Stevens and Lee, which had been constructed up the hill.[53] Like the nurses' residence, the interns' building was a long, narrow building with stepped gables at its ends (Fig. 10). Social spaces provided for the interns, however, were intended to encourage qualities associated with masculinity and power; the first floor billiards room was featured prominently in photographs of the hospital's resident interns.[54] Promotional photographs showing a typical day in the life of an intern featured him in active modes, often controlling new technology or performing medical procedures; nurses, on the other hand, were featured in the hospital's promotional material gathered around a piano, engaging in informal conversations, or watching television. Even in the enormous complex of the modern hospital, doctors-in-training were seen as men of science, while student nurses were pictured as women at home. The planning of the hospital, as we have seen, is material evidence of these gender roles.

Historian Judi Coburn has noted how nursing has been shaped by two powerful ideological forces: the "bourgeois ideology of femininity," which attempted to "contain women's work outside the home within the duties of homemaking," as well as the allure of professional status.[55] The architecture of the RVH nurses' residence reflects this duality of forces that shaped the profession. While the building's homelike character was intended to attract middle-class women to join the ranks of the growing profession, these same architectural features also served to limit women's participation in the world of health care.

But the buildings also served very positive roles in the shaping of the Canadian nursing profession. Residences gave nurses real space in which to live and work, in contrast to their prior "invisible" occupation of the hospital in general; the residences' clear connection to the hospital – in terms of both a real physical link and stylistic congruity – acknowledged the students' gruelling schedules and total commitment to nursing. Most significantly, the architecture of nurses' residences offered single women a place to live in the city, outside the traditional, middle-class (or working-class) home.

In addition, the history of this much-neglected building type should remind us, as architectural historians, of the pitfalls of isolated typological studies. The dynamic interplay between the architectures of the hospital and the homes of the surrounding neighbourhood is material evidence of the murky distinctions between domestic and institutional architecture at this time. The study of architecture designed for women underlines this danger, as it nearly always represents a carefully negotiated compromise of private and public space.

Today, the section of the Royal Victoria Hospital that once housed its student nurses is generally indistinguishable from the rest of the institution. Its finely crafted interiors have given way to the more anonymous, undecorated, "scientific" design of postwar hospital architecture. The only traces of its tenure as purpose-built architecture for women are in extant architectural drawings and photographs, preserved largely because the original building and its additions were designed by relatively well-known (male) architects. The mere footprint of the nurses' residences in the ensemble, nonetheless, is a potent reminder of both the presence and absence of women in the twentieth-century city.

Notes

1. The author gratefully acknowledges the support of the McGill Centre for Research and Teaching on Women and the insightful assistance of David Theodore. Many others also contributed to the effort, especially Suzelle Beaudoin, Linda Cohen, Peter Gossage, Rhona Kenneally, Karen Kingsley, Marie-Alice L'Heureux, Tania Martin, Debbie Miller, Rob Michel, Dianne Newell, Françoise

Roux, Conor Sampson, and Gordon Whiteside. Graduates of the RVH Training School for Nurses and the staff of the Royal Victoria Hospital generously shared their material and memories, particulary Lorine Besel, Pat Blanshay, Helen Belschner, Brenda Cornell, Linda de Forest, and Martin Entin.

2. The Maxwells were the winners of a limited competition held in 1905; the other invited participants were Hutchison and Wood, Taylor Hogle and Davis, Robert Findlay, Marchand and Haskell, and George A. Brown. Percy Nobbs chose the winning scheme. See House Committee, RVH, *Minute Book* 2 1903–1915. The most comprehensive study of the Maxwells' career is *The Architecture of Edward and W.S. Maxwell* (Montreal: Montreal Museum of Fine Arts, 1991). The Maxwell papers are held in the Canadian Architecture Collection (CAC), Blackader-Lauterman Library, McGill University; see Irena Murray, ed., *Edward and W.S. Maxwell: Guide to the Archive* (Montreal: CAC, 1986).
3. This area is commonly called Montreal's "golden square mile," due to the fact that, about 1900, 70 per cent of Canada's wealth was held by the 25 000 residents of the area. See Jean-Claude Marsan, *Montreal in Evolution* (McGill-Queen's University Press, 1981), 257. On its architecture, see Julia Gersovitz, "The Square Mile, Montreal 1860–1914," M. Sc. thesis, Columbia University, 1980; Donald MacKay, *The Square Mile: Merchant Princes of Montreal* (Vancouver: Douglas and McIntyre 1987); François Rémillard and Brian Merret, *Mansions of the Golden Square Mile: Montreal, 1850–1930* (Montreal: Meridian, 1987).
4. Hutchison and Wood had designed numerous extensions and alterations to the hospital from 1905 to 1912, including the repairs made to the administration building after the fire of 1905, the ambulance garage, and the workshops.
5. The drawings for the extension to the nurses' residence are in the Lawson and Little Archive, Collection of the Canadian Centre for Architecture. The drawing for their extension to the interns' residence in 1937–1938 and a proposed dining hall for nurses in 1944 are also at the CCA. See D. Sclater Lewis, *Royal Victoria Hospital 1887–1947* (Montreal: McGill University Press, 1969), 250.
6. The architecture of nursing has been little explored by historians; the most thorough studies are Karen Kingsley, "The Architecture of Nursing," in *Images of Nurses: Perspectives from History, Art and Literature*, ed. Anne Hudson Jones (Philadelphia: University of Pennsylvania Press, 1988), 63–94. Kingsley is currently exploring Nightingale's writings on the design and planning of spaces for nurse training, residence, and work. On the RVH Training School in particular, see *The Alumnae Association Incorporated of the Royal Victoria Hospital Training School for Nurses 1896–1972*, souvenir booklet prepared by Kathryn Catterill in 1972; and Marjorie Dobie Munroe, *The Training School for Nurses, Royal Victoria Hospital, 1894–1943* (Montreal: Gazette Printing, 1943). The school closed in 1972, although the association is still active today. A longer history of nursing education at the Montreal General Hospital, an English-speaking hospital which was founded in 1819, is offered in Hugh Macdermot, *History of the School of Nursing of the Montreal General Hospital* (Montreal: Alumnae Association, 1940). Alternatively, the histories of francophone nursing education offered at Montreal hospitals are found in Johanne Daigle, "Devenir infirmière : les systèmes d'apprentissage et la formation professionnelle à l'Hôtel-Dieu de Montréal, 1920-1970," Diss. Université du Québec à Montréal, 1990, and *L'École d'infirmières de l'Hôpital Notre-Dame, Montréal, 1898-1968* (Montréal: Association des infirmières diplômées de l'Hôpital Notre-Dame, 1968). On the history of training schools in Canada, see John Murray Gibbon and Mary S. Mathewson, *Three Centuries of Canadian Nursing* (Toronto: MacMillan, 1947), 143–65.
7. Excerpted from the RVH's act of incorporation, Charter of the Royal Victoria Hospital, reproduced in Lewis, 311–15. The main responsibilities of a new probationer at the hospital in 1894 are listed in Gibbon and Mathewson, 159.
8. A five-storey wing of the administration building was added to the original Snell complex in 1898–99, designed by Andrew Taylor. This included a nurses' dining room and extra bedrooms. This dining room, illustrated in Lewis's Fig. 10, was accessible from the hospital's main staircase. It became the doctors' dining room after construction of the Maxwells' residence for nurses and stood until the construction of the New Surgical Wing in 1953–1955. The plans in the Maxwells' possession, which show a dining room in the western end of the administration building, do not seem to reflect what was built. See Lewis, 128. The Royal Infirmary at Edinburgh, the model for the RVH, had a separate dining room for nurses as designed by David Bryce.
9. "On the Mountain's Breast," *The Gazette* (Montreal), 12 Nov. 1891, p. 2, cols. 1–2.
10. These drawings were produced by Snell's office; copies are now in the National Archives of Canada. An axonometric drawing of the complex,

also drawn by Snell, names portions of Block 7, 8, and 9 for nurses; it is likely, from scattered references, that the fourth floor of the administration block was largely occupied by the nurses (Block 8).

11. We do know, however, that nurses at the nearby Montreal General Hospital slept in "cubicles built into an old ward, and after a stormy night, their beds were ofter festooned with snow." This quotation is cited in Judy Coburn "'I See and am Silent': A Short History of Nursing in Ontario," in *Women at Work, Ontario 1850–1930* (Toronto: Women's Press, 1974) 136.
12. On the pavilion plan, see Anthony King, "Hospital Planning: Revised Thoughts on the Origin of the Pavilion Principle in England," *Medical History* 10 (1966): 360–73.
13. On the Royal Infirmary at Edinburgh, see *The Builder* 28, no. 1454 (Dec. 17, 1870): 1006–07, 1009. The Scottishness of the RVH was noted by many visitors at the time. A journalist in one Montreal newspaper, for example, said that "the whole structure has the appearance of one of the embattled fortalices for which old Scotland was once so famous." See "On the Mountain's Breast."
14. Lewis, 135.
15. The instructional aspects of mid-twentieth-century nurses' residences are mentioned in Fred L. Townley, "The Planning of the Nurses' Homes," *The Journal (RAIC)* (Aug. 1944): 169–70. Examples are illustrated in "Burton Hall Women's College Hospital Residence and School of Nursing," *The Journal (RAIC)* (April 1956): 124; "Student Nurses' Residence, Royal Victoria Hospital, Barrie, Ontario," *The Journal (RAIC)* (Oct. 1952): 293; "Royal Alexandra Nurses Residence and School of Nursing," *The Journal (RAIC)* (Jan. 1962): 48. The nurses' home constructed at the Montreal General Hospital in 1926 also contained "a complete teaching unit of laboratories and class rooms, all on one floor." See Macdermot, 65.
16. The hospital-based training of nurses in Canada was gradually replaced by college and university programs, beginning in 1920 at the University of British Columbia. See Coburn, 153, and Lee Stewart, *It's Up to You: Women at UBC in the Early Years* (Vancouver: UBC Press, 1990), 31–42. Stewart has noted that the establishment of this pioneering program satisfied a need on the part of hospital administrators to create a hierarchy within nursing, rather than reflecting a sincere interest on the part of the university to welcome women. For more information on the history of nursing in Quebec, see Yolande Cohen and Michèle Dagenais, "Le métier d'infirmière : savoirs féminins et reconnaissance professionnelle," *Revue d'histoire de l'Amérique française*, 41, 2 (automne 1987), 155–77, and Johanne Daigle, Nicole Rousseau and Francine Saillant, "Des traces sur la neige : la contribution des infirmières au développement des régions isolées du Québec au XX^{e} siècle," *Recherches féministes*, 6, 1 (1993), 93–103.
17. Snell's hospital appeared symmetrical, but the west and east wings actually differed significantly due to the steep slope of the site.
18. *1933 Yearbook*, 19.
19. Nineteenth-century medical advice literature written for women, for example, is full of suggestions that menstruation, conception, and even childbirth would be eased by rural or natural surroundings. See Pye Henry Chavasse, *Advice to a Wife*, 12th ed. (London: Churchill, 1887), 17, 19–22.
20. On ideologies of women and nature informing the process of suburbanization, see Gwendolyn Wright, *Moralism and the Model Home: Domestic Architecture and Cultural Conflict in Chicago, 1873–1913* (Chicago: University of Chicago Press, 1980) and Annmarie Adams, "The Eichler Home: Intention and Experience in Postwar Suburbia," in *Perspectives in Vernacular Architecture* 5, ed. Elizabeth Cromley and Carter L. Hudgins (University of Tennessee Press, forthcoming).
21. The RVH has never owned property east of University; it has always belonged to the Royal Institute for the Advancement of Learning (McGill University). The possibility remains that the nurses' home was constructed west of the hospital because they could not build medical buildings on the site; there are few references to the siting of buildings in the hospital's documents.
22. These prestigious structures included the first pathology building and medical theatre (1894), the new pathology building by Nobbs and Hyde (1924), and the Montreal Neurological Institute by Ross and Macdonald (1933–34).
23. Eileen C. Flanagan, "An Address Given at the 75th Reunion, Royal Victoria Hospital Nurses' Alumnae," 9 May 1972, p. 7.
24. Kingsley has remarked that many nurses' residences had doors of exceptional architectural merit, which lent the institution "identity and stature" and also marked the transition between work and home. Many of the doors in her study were the main entries to the building from the exterior, which she notes were ironically more often used by guests than by the nurses. This door at the RVH, however, was an interior door from the hospital. RVH nurses, however, were often photographed at the entry to the Lawson and Little extension.

25. Gibbon and Mathewson, 376.
26. Edward F. Stevens, *The American Hospital of the Twentieth Century*, 3rd ed. (New York: Dodge, 1928), 403; Stevens designed both the Ross Pavilion and the Royal Victoria Montreal Maternity Hospital at the RVH. Thomas Harris, on the other hand, writing 25 years earlier, remarked that most nursing homes adjoined general hospitals. See Thomas Harris, "Notes on a Short Visit to some of the Hospitals and Medical Educational Institutions in the United States and Canada," *Montreal Medical Journal* 32, no. 2 (Feb. 1903): 114.
27. Stevens, 403
28. Photographs of these social spaces intended as enticements to the profession appear throughout the promotional literature. See *So You Want To Be A Nurse?*, RVH pamphlet, n.d.
29. E.A.E. MacLennan, "The New Residence," *1933 Yearbook*, 18–19.
30. Martha Vicinus, *Independent Women: Work and Community for Single Women 1850–1920* (Chicago: University of Chicago Press, 1985), 129; the book includes a chapter on reformed nursing, 85–120.
31. Comments on the uniform are taken from a letter from Miss Janet Marlane to a friend, reprinted in the 1925 yearbook; Coburn, 135–40.
32. Stevens, 406.
33. See "House of H. Vincent Meredith, Montreal," *Canadian Architect and Builder* 9 (Jan. 1896): 2.
34. The house is now referred to as the Lady Meredith House; when Lady Meredith bequeathed the house to the RVH in 1940 or 1941, it became the Joint Hospital Institute of Montreal. The Charles Meredith House next door became a residence for RVH nurses after 1941. Edward S. Clouston's house on Peel Street was also designed by the Maxwells (1893–94) and used for a nurses' residence; he was RVH president from 1910 to 1912. See Lewis, 236; Rémillard and Merrett, 147, 172.
35. On apartments for women, see Elizabeth Collins Cromley, *Alone Together: A History of New York's Early Apartments* (Ithaca: Cornell University Press, 1990), and Lynn F. Pearson, *The Architectural and Social History of Cooperative Living* (London: Macmillan, 1988); the relationship of British apartment buildings for women to Victorian feminism is analysed in my own "Architecture in the Family Way: Health Reform, Feminism, and the Middle-Class House in England, 1870–1900" (Ph. D. diss. University of California at Berkeley, 1992).
36. For an analysis of the complex, multifunctional Grey Nuns' motherhouse, see Tania Martin, "Housing the Grey Nuns" (M. Arch. thesis, McGill University, in progress). For a comparison of the Hôtel-Dieu (a convent/hospital) and RVH in terms of medical space, see Shelley Hornstein, "The Architecture of the Montreal Teaching Hospitals of the Nineteenth Century," *The Journal of Canadian Art History* 14, no. 1 (1991): 12–24. Kingsley cites monasteries and military hospitals as important precedents for nurses' buildings; see Kingsley 65–66.
37. See Deborah Miller, "The Three 'R's: Residence, Resistance, and Redesign, Royal Victoria College and the Architecture of Feminism" (M. Arch. thesis, McGill University, in progress). On women's colleges in general, see Helen Lefkowitz Horowitz, *Alma Mater: Design and Experience in the Women's Colleges from the Nineteenth-Century Beginnings to the 1930s* (New York: Knopf, 1984).
38. It is interesting to note that the Maxwells were involved in additions or alterations to at least three Canadian buildings by Price: the Château Frontenac (1919–24), Windsor Station (1899–1901), and the James Ross house (1897–1898).
39. See House Committee, RVH, *Minute Book* 2, 1903–1915; separate quarters for nurses were also included in a list of suggestions made by the Medical Board following the fire of 1905. See Lewis, 135. Lord Strathcona is mainly remembered as a financier of the Canadian Pacific Railroad. He was also chief commissioner of the Hudson's Bay Company, a member of parliament, president of the Bank of Montreal, and Canadian high commissioner to the United Kingdom.
40. The Weir Survey of 1932 emphasized the role of the dietetic lab in nursing education so that nurses could become "ambassadors to the people of the new preventive medicine." Gibbon and Mathewson, 376.
41. *1933 Yearbook*, 19. Stevens illustrated the plans of 15 nurses' residences, many of which include educational spaces, in his chapter on the building type. See Stevens, 403–39. Some large hospitals even had separate educational facilities for nurses at this time. See Stevens, 437–39, especially the model plan of an educational building for nurses as suggested by the New York State Board of Nurse Examiners, 435. The Royal Victoria Montreal Maternity Hospital, designed by Stevens and Lee, included housing for its nurses on its sixth floor, with a demonstration room, living room, and library. See Stevens, 193.
42. Mrs. Daley applied to Sir Donald A. Smith for admission to the school. The House Committee Minute Book documents that "as it appeared that Mrs. Daley was married and at present living with her husband it was decided that it would

not be advisable to accept her application." See House Committee, RVH, *Minute Book*, 1893–1903 (12 June 1895), 98.

43. Flanagan, 7.
44. *1933 Yearbook*, 19.
45. This innovative design was featured in a photograph of a double room in the 1933 yearbook, 19.
46. Telephone interview with Linda de Forest, 31 March 1994. She is a graduate of the RVH training school and the author of a forthcoming history of the school.
47. Flanagan, 2; Flanagan was elected president of the Alumnae Association in 1939. The changes carried out during her term are outlined in the Alumnae Association souvenir booklet prepared in 1972 by Katheryn Catterill.
48. This is the subject of my own paper, "Building Barriers: Images of Women in Canada's Architectural Press, 1924–73," in progress.
49. See *Architecture Canada* (April 1968), 54; (May 1968), 32.
50. Flanagan, 1, 2. Goodhue was president of the Alumnae Association from 1913–23.
51. Hersey's obituary by Elsie Allder appeared in *Canadian Nurse* 101 (Feb. 1949): 3. Some of her accomplishments are cited in Gibbon and Mathewson, 172–73.
52. Lewis, 135; the possibility exists, of course that the Lady Superintendent resided in the first nurses' home despite the suggestions of the Medical Board.
53. Lewis, 249.
54. The other social spaces provided were a generous lounge, a second-floor living room, and a third-floor sitting room. The plans of the interns' building were published in *The Journal (RAIC)* (Dec. 1931): 425.
55. Coburn, 155

Research Reports

Rapports de recherche

Les maquettes d'inventions comme vestiges de la technologie canadienne du XIX^e siècle

RICHARD FISET

L'étude de la technologie industrielle antérieure au XX^e siècle peut difficilement être faite sans l'apport des témoignages authentiques que constituent les appareils inventés à l'époque. Ces formes et ces mécanismes, d'abord produits à l'état réel de fonctionnement pour des essais, ont été décrits et représentés graphiquement en soumission au Bureau des brevets canadiens. Dans certains cas, des modèles réduits ont été montés matériellement pour être soumis comme « maquettes d'inventions »; ils deviennent aujourd'hui des documents de première importance lorsque l'invention originale a disparu du marché.

Ce type de maquette relève d'une catégorie d'objets de collections singuliers, puisqu'il ne constitue pas un produit fini, réalisé en série, mais une conception à l'étape préliminaire. Il est le résultat en miniature d'un projet d'inventeur accepté par le Bureau des brevets. Ces réalisations matérielles miniaturisées, mais conformes à l'objet initial, servaient à reconnaître les particularités d'une invention dans le but d'obtenir un brevet et de départager les avis quant à la conception novatrice. Mais tous les inventeurs n'étaient pas en mesure de satisfaire à cette demande et des maquettes produites, il n'en reste que très peu. En fait, si les brevets ont constitué une certaine protection garantissant la conservation d'une partie de la connaissance technique, il en va autrement pour les maquettes qui accompagnaient ces brevets, car elles ont souvent été dispersées ou détruites. C'est du moins ce qu'il m'a été permis de constater en étudiant une collection de maquettes pour le compte du Musée national des sciences et de la technologie du Canada, à Ottawa.

Dignes représentantes, les maquettes d'inventions canadiennes sont rares. Elles reconstituent des faits matériels actifs d'époque et comptent parmi les plus intéressantes avenues d'étude pour faire redécouvrir la technologie canadienne du XIX^e siècle.

Introduction aux brevets

Avant toute chose, les maquettes d'inventions sont des objets qui se distinguent des modèles réduits faits par des artistes modélistes, pour reproduire un élément visuel, ou de ceux fait par un maquettiste, pour reconstituer à l'échelle divers éléments. Les maquettes d'inventions retracent une technologie reliée à un contexte précis de l'histoire : les brevets. Les brevets reflètent une réalité dans l'évolution des techniques sous deux aspects primordiaux : l'invention et l'innovation. L'invention est un acte qui permet de faire une association propice à un apport technique[1], tandis que l'innovation, si on l'applique à la réalité des brevets, signifie une amélioration de l'invention.

Le cadre chronologique pour faire une histoire des brevets semble correspondre à un élément précurseur du développement industriel d'une société, on pourrait même dire de la révolution industrielle. Cette dernière est un phénomène complexe, comme le dit Braudel dans *Civilisation matérielle, économie et capitalisme : XV^e-XVIII^e siècle,* un mouvement progressif, généralement lent, qui a ses racines très loin dans le temps mais prend un tournant décisif pour l'Europe dans la deuxième moitié du XVIII^e siècle[2]. L'origine du système des brevets d'inventions prend sa source en Angleterre avec la mise en forme du *Statute of Monopolies*

qui dicte, en 1724, que seul le premier inventeur peut avoir un brevet et le monopole de son exploitation pendant 14 ans.[3] Cette législation précéda d'un siècle le développement de l'industrie en Angleterre.

Au Canada, divers facteurs se mirent en place bien avant le XX^e siècle et entraînèrent la croissance du milieu industriel. On pourrait dire incidemment que la mise en place du système de brevets dès le début du XIX^e siècle serait l'un des signes précurseurs de notre révolution industrielle. Le Bureau canadien des brevets ouvrit ses portes en 1823, mais le premier brevet ne fut déposé qu'en 1824. Il n'y eut que peu d'inventions au plan technologique durant la première période : seulement 1270 brevets furent déposés jusqu'en 1860. Ce n'est qu'à partir de ce moment que nous remarquons un accroissement du nombre de brevets, signe de la mise en place des éléments propices à l'essor industriel. Les industries prirent de l'expansion et entraînèrent le développement d'une plus grande gamme de productions spécialisées. Nous observons également la naissance de grandes industries et leur retour vers les grandes villes, évolution favorisée par l'adoption de techniques nouvelles. Après 1870, nous remarquons l'accroissement du nombre de brevets et, par le fait même, l'accélération du processus de développement technologique canadien qui devint international. Il en fut ainsi grâce à l'adoption en 1869 d'une nouvelle loi, *The Patent Act of 1869*.

En comparaison avec d'autres pays industrialisés comme l'Angleterre et les États-Unis, les brevets canadiens connurent une lente évolution. C'est ainsi que le nombre de brevets canadiens, bien que croissant, était très modeste par rapport à celui des États-Unis. On retrouvait également plusieurs inventions canadiennes déposées conjointement au Canada et aux États-Unis, relevant d'un fonctionnement législatif complexe. Il était intéressant pour l'inventeur canadien de déposer un brevet américain, car il s'assurait ainsi d'une plus grande diffusion par le biais de la *Gazette of Patents* et du *Scientific American*. Mais le mouvement inverse existait également car, après 1870, on put voir plusieurs inventeurs américains déposer des brevets au Canada. L'ouverture à un plus grand marché, conjuguée à une protection plus vaste, permit aux inventeurs d'entrevoir des possibilités commerciales dans nombre de pays, l'invention pouvant ainsi devenir assez lucrative.

Les premières lois canadiennes sur les brevets d'invention ne furent adoptées qu'en 1823 au Bas-Canada et en 1826 au Haut-Canada; les autres provinces suivirent. Ces lois prenaient leur source dans la législation anglaise, mais elles devaient évoluer. C'est ainsi que les premières lois ont toutes été remplacées par une loi fédérale en 1869, peu après la Confédération.[4] La nouvelle législation s'inspirait désormais dans ses grandes lignes de la législation américaine des brevets en vigueur depuis 1836. C'est d'ailleurs aux États-Unis, par une loi votée en 1790, qu'avaient été adoptés les premiers statuts formels. L'une des particularités importantes des lois canadienne et américaine est qu'elles s'appuient, pour la protection d'un brevet, sur la date de l'invention et pas seulement sur la date de la demande, comme c'était le cas en Angleterre. La loi canadienne connut de légères modifications dans les années qui suivirent, au fur et à mesure que se présentaient des cas litigieux.[5] Tous ces amendements ont été consolidés en 1923.

Une composante importante de la loi touche au principe de la diffusion des connaissances. Les premières descriptions de brevets canadiens furent publiées en 1860, assez tardivement si l'on considère que le Bureau fonctionnait depuis 1824. Or, le dépôt d'un brevet était également un moyen d'en faire la publicité, l'un des buts fondamentaux de la loi étant de promouvoir le développement technique et industriel. À cette fin, la diffusion de l'invention était assurée par une gazette qui paraissait régulièrement, fournissant une plus ou moins brève description de l'invention. Les premiers volumes parus, sous le nom de *Patents of Canada*, étaient imparfaits. D'ailleurs, le second exemplaire, contenant les inventions déposées jusqu'en 1855, ne fut publié qu'en 1865. Après ces difficiles débuts, on verra paraître régulièrement, à partir de 1873, deux types de publications, la première étant le *Canadian Patent Office Record*, répertoriant toutes les inventions enregistrées mensuellement, et le *Canadian Patent Office Record and Mecanics'* [sic] *Magazine*, qui contenait également une chronique des découvertes à travers le monde. Ce dernier changea de titre, devenant *Canadian Mecanics' Magazine and Patent Office Record*, puis *Scientific Canadian Mecanics' Magazine and Patent Office Record* et, par la suite, *The Canadian Magazine of Science and the Industrial Arts with the Patent Office Record*. Cependant, la description détaillée des inventions ne se retrouvait qu'au Bureau des brevets, appuyée, selon les cas, des dessins techniques qui s'y rapportaient.

Certaines inventions furent conceptualisées à l'aide de maquettes déposées en même temps que les feuillets descriptifs; il était d'ailleurs recommandé par les agents de brevets d'en faire pour les dépôts aux États-Unis et au Canada.[6] Le brevet, une fois accordé, était un droit spécial conféré à l'inventeur pour l'exploitation d'une invention. Même si elle ne reconnaissait pas de propriété personnelle pour une invention, la loi permettait à l'inventeur de l'exploiter de manière exclusive pour une période n'excédant pas 15 ans. L'inventeur jouissait donc d'un droit préférentiel pour produire, utiliser ou vendre une invention.

Pratique des brevets

Les inventions soumises au Bureau des brevets n'étaient pas toutes acceptées. L'une des premières conditions de recevabilité reposait sur la possibilité de mise en œuvre. Toutefois, l'un des principaux critères concernait soit l'originalité de l'invention, soit l'originalité dans la combinaison de deux inventions ou plus pour en faire une toute nouvelle. L'obtention d'un brevet signifiait nécessairement que l'invention était différente des autres.

Dans certains cas, l'étude des inventions soumises exigeait de long délais. Ainsi, le nombre de plus en plus grand de demandes entraîna des retards en 1876.[7] Le manque de personnel qualifié et la soumission de devis complexes ou imprécis, dans des domaines de pointe tels que la machine à coudre, contribuèrent à ralentir l'acceptation de brevets. On peut comprendre la difficulté des ingénieurs à évaluer les inventions quand on sait que les inventeurs pouvaient donner des spécifications similaires à plus d'une invention. C'est le cas, par exemple, d'un certain Smith qui inventa en 1874 une fournaise dont la ressemblance avec une machine pour la réduction du bois de pulpe était frappante au premier coup d'œil.

L'inventeur classique considérait certaines lignes directrices dans la conception d'une nouveauté. Il semblait d'abord réagir à une demande qui pouvait rapporter des redevances. L'une des pratiques consistait à trouver des réponses aux demandes de l'industrie pour régler des problèmes techniques. Ce fut le cas pour un certain nombre de spécifications dans la fabrication de la machine à coudre, dont une en 1875.[8] Sachant ce qu'il voulait accomplir, l'inventeur étudiait les machines existantes en cherchant comment il pouvait améliorer le procédé, souvent pour simplifier. L'une des principales contraintes demeurait la création d'un objet dont la mise en marché n'était pas entravée par le coût de production : il fallait pouvoir vendre la marchandise à un bon prix.

Un agent de brevets du nom de C. Barlow disait, en 1873, qu'il y avait quatre moyens de faire de l'argent avec les brevets : le premier, de loin le meilleur, était de mettre l'invention en application et de l'exploiter sur le marché; le second était de vendre des franchises pour l'exploitation; le troisième était de retirer les pleins droits sur l'invention; le quatrième était de diviser les droits en parts.[9]

Le développement des brevets avec leurs complexités administratives entraîna la naissance de la profession d'agent de brevets. L'inventeur qui voulait déposer un brevet pouvait alors passer par un tiers qui étudiait la recevabilité de l'invention pour le Bureau des brevets. Il y eut quelques solliciteurs durant la période antérieure à 1869, année où fut déposée la loi fédérale canadienne, mais seul Charles Legge en fit une profession à temps plein à partir de 1859 (il fut l'ingénieur de la construction du pont Victoria à Montréal); sa démarche allait déboucher sur la création de la première firme faisant la sollicitation des brevets au Canada. De certaines firmes de l'époque subsistent des guides qui expliquent le fonctionnement du Bureau des brevets et mettent de l'avant les services offerts. L'un des premiers est le *Harvey's Guide to Patents* publié en 1885; un autre de ce genre fut publié au début du XX^e^ siècle par l'agence Marion & Marion sous le titre *The Inventor's Adviser* et était beaucoup plus détaillé que le premier.

Dans les domaines où il y avait plusieurs inventions qui pouvaient se ressembler, il était quasi nécessaire de concevoir une maquette en plus des devis techniques. La maquette servait alors à reconnaître les particularités d'une invention et ainsi à départager les avis quant à la conception novatrice. Tout comme aux États-Unis, au XIX^e^ siècle, le Bureau des brevets canadiens demandait des maquettes lors d'une demande de dépôt de brevet. Mais tous les inventeurs n'étaient pas en mesure de satisfaire à cette demande qui pouvait devenir coûteuse.

Les maquettes d'inventions

Les maquettes d'inventions qui ont survécu sont souvent les derniers exemplaires matériels d'une technologie. Pour se rendre compte de

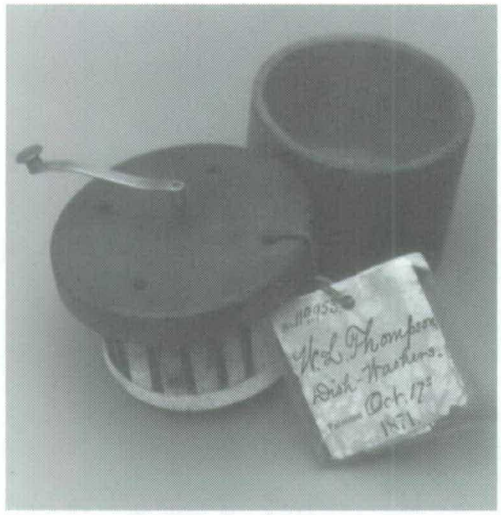


Fig. 1
Lave-vaisselle, W. L. Thompson, 17 octobre 1871

l'importance des maquettes, nous devons nécessairement reconnaître que celles associées à un brevet sont uniques en regard des lois en vigueur. Il faut ensuite préciser qu'elles ont été peu nombreuses (une au Canada et une autre aux États-Unis). Finalement, toutes les inventions n'en n'ont pas généré. On peut dire qu'il reste très peu de maquettes originales et, à notre connaissance, ce sont celles déposées aux États-Unis qui ont eu le plus de chance de nous parvenir par le biais de collections muséales et privées. Il suffit de penser que les maquettes américaines conservées ont échappé à deux incendies, en 1836 et 1877, et à leur vente, en 1926, pour comprendre leur rareté. Quant aux maquettes du Canada, elles ont été retournées aux propriétaires ou, le cas échéant, détruites.

Afin de préciser leur fonction, disons que la conception des maquettes est le résultat d'un projet ou d'une recherche dont le but est d'amorcer la production de plusieurs exemplaires dans la réalité. Il s'agit d'une version miniature de l'invention qui a déjà donné des preuves de son fonctionnement lors d'essais : elle appartient donc au domaine de la recherche industrielle. Cependant, toutes les maquettes ne présentent pas le même intérêt au point de vue informatif. Israel et Rosenberg disent, pour leur part, que les maquettes d'inventions d'Edison ne présentent qu'un intérêt au plan de la technique d'expression du maquettiste.[10] Sans nier ce fait, on peut dire que, si les inventions d'Edison ont eu la chance de parvenir jusqu'à nous, il n'en va pas ainsi de toutes. Lorsqu'elle devient l'unique exemplaire matériel d'une invention, la maquette prend une toute autre dimension. Elle devient parfois l'unique représentation visuelle, lorsque les dessins ont disparu des fonds de brevets, qui peut nous donner une idée plus juste de l'invention. D'ailleurs, il faut considérer que si le Bureau des brevets réclamait ces objets, à l'époque, c'était pour comprendre et juger l'invention. Outre le fait qu'elles rendent possible un examen détaillé, plus éloquent que les descriptions, le contexte historique permet de les associer aux autres inventions et aux préoccupations d'une société industrielle naissante.

Notre étude pour le Musée national des sciences et de la technologie d'Ottawa a porté sur une collection de quarante maquettes d'inventions provenant d'une collection privée. C'était des maquettes qui accompagnaient des brevets déposés par des Canadiens aux États-Unis et dont les inventions, pour la plupart, faisaient l'objet d'un brevet similaire au Canada. La collection n'est pas tellement représentative d'un phénomène en particulier, mais reflète l'œuvre de quarante-huit inventeurs durant la période 1865-1890. Les inventions touchaient à des technologies relevant de plusieurs champs d'activités, soit au delà d'une trentaine de types techniques. La diversité présentait un intérêt certain, car on peut y voir des technologies associées à la vie économique au début de l'ère industrielle, allant de l'extraction des ressources naturelles aux objets de la vie quotidienne, en passant par la production. Somme toute, plusieurs objets n'ont pas laissé de traces pour la grande histoire, mais certaines machines de qualité ont simplement été oubliées. Il serait à propos de relever quelques-unes de ces maquettes.

C'est ainsi que les inventions dans le domaine de la technologie domestique sont largement représentées dans la collection privée que nous avons étudiée. L'une des inventions les plus particulières, mais également unique à cette époque, consistait en un lave-vaisselle, par William L. Thompson. Thompson est natif de Stanstead. Nous lui reconnaissons quelques inventions qui vont du *Window and Blind Fastener,* en 1862 (#1458), en passant au *Peat Manufacturer* en 1865 (#1882), puis à l'invention d'une *Method of preparing the Laminae of Wood, to be used for covering the walls of Houses* en 1868 (#2685). Ce ne sera que quelques années plus tard qu'il déposera des brevets pour le lave-vaisselle (U.S. Oct. 17, 1871, #119 953; CAN. Sept. 9 (1871, #1133).

Le dépôt d'un brevet pour une machine à laver la vaisselle, en 1871, est à mettre à part,

surtout si l'on considère que l'innovation principale reconnue à cette époque dans ce domaine fut une lavette.[11] Comme ce fut le cas pour la machine à laver le linge, on pensait que cette tâche pénible devait connaître des allègements. Mais la technologie existante n'allait pas permettre une croissance aussi marquée que celle de la machine à laver le linge. À notre connaissance, l'invention de Thompson est unique en son genre à cette époque et il faudra attendre les années 1880 pour voir d'autres tentatives.

La maquette permet de constater que l'invention consiste en une cuve de bois bardée de cercles de métal, une roue à pales, actionnée par une manivelle extérieure, et un couvercle. La description laisse entendre que la vaisselle était déposée entre les pales. Une fois la cuve remplie d'eau savonneuse, il suffisait de tourner la manivelle pour amorcer un mouvement à l'intérieur qui faisait circuler l'eau entre la vaisselle. On pouvait agiter la roue à pales en rotation continue, ou demi-rotation, selon l'usage qu'on voulait en faire. Cette invention est le signe précurseur d'une autre époque, mais elle était sans doute périlleuse pour la vaisselle en terre cuite...

À l'opposé de l'invention de Thompson, un autre objet de cette collection privée se rattache à l'une des plus grandes productions industrielles du XIX^e siècle : les machines à coudre. Avant l'ère des appareils automatiques, qui apparurent dans la période 1850-1900, on a vu des machines à coudre ayant pour moteurs des machines à vapeur impressionnantes. D'autres, d'usage domestique, fonctionnaient avec le pouvoir hydraulique.[12] Ce secteur fait partie des domaines de créativité qui comptent le plus grand nombre de dépôts de brevets. Après les années 1840, plusieurs inventions virent le jour et, en 1873, plus de 4 000 000 de machines à coudre fonctionnaient à travers le monde[13], mais c'est aux États-Unis que se trouvaient les plus grands producteurs : American Singer Sewing Machine, The Williams Manufacturing Co., The Gardner's Sewing Machine, The Reice Sewing Machine, The Wheeler & Wilson's Manufacturing Co[14].

Les industries qui se spécialisaient dans ce secteur signalaient aux inventeurs dans quels domaines il fallait apporter des innovations[15]. Les inventeurs Canadiens entrèrent dans la course durant l'époque commerciale postérieure à 1850. Le premier brevet canadien pour une machine à coudre fut déposé en 1854, par D'Arcy Porter (#468) qui, pour faire face au développement technologique et à la concurrence, déposa un nouveau brevet en 1865 (#1896). À partir de 1858, le secteur canadien fourmilla d'inventeurs qui se spécialisèrent car la demande du marché était très grande : Christopher Lockman a inventé trois de ces machines, la première en 1862 sous la dénomination de *Family Shuttle Sewing Machine* (#1325), une seconde en 1867 (#2380) et la dernière en 1869 (#3133). R. Barclay en a déposé trois également, en 1866 (#2121), en 1867 (#2327) et en 1868 (#2550). Dans les années 1868-1869, plusieurs autres inventeurs déposèrent tour à tour des brevets, mais c'est à partir des années 1870 que le nombre de brevets connut une croissance sans précédent : huit en 1874, six en 1875, douze en 1876, quatorze en 1877, treize en 1878, douze en 1879, douze autres en 1880, et plus de vingt en 1881. C'est dans ce contexte prolifique que J. N. Tarbox, dont nous avons pu voir la maquette dans la collection étudiée, déposa son brevet aux États-Unis en 1879 (Mar. 11, 1879, #213 146). Son invention se différenciait des autres par de nombreux ajustements apportés à l'appareil, particulièrement dans le mouvement de l'aiguillage et des principales composantes reliées directement à la couture. Nous n'avons pas pu déterminer quel avait été le succès de

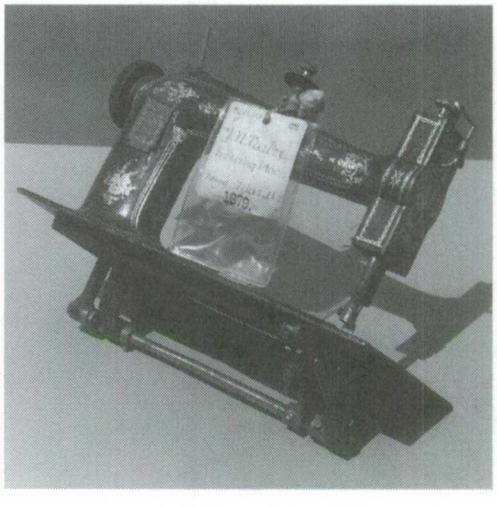


Fig. 2
Machine à coudre, J. N. Tarbox, 11 mars 1879

l'invention sur le marché, mais nous pouvons dire au moins qu'elle représente l'une des branches technologiques les plus populaires au XIX^e siècle.

La mécanisation a été l'un des aspects primordiaux du développement industriel. Sur ce plan, plusieurs maquettes de la collection viennent nous informer sur des aspects technologiques qui sont maintenant révolus. Parmi

celles-ci, trois des maquettes de la collection touchent à la technologie reliée aux mouvements. Elles ont été développées par quatre inventeurs : E. Wadhams, W. Hamilton, père et fils, et P. English.

Les machines qui assuraient la transmission du mouvement sont parmi les appareils les plus importants car ils servent de relais entre la force du mouvement et les machines de production ou encore à d'autres mouvements. Depuis longtemps, on a inventé des principes mécaniques qui président aux mouvements à engrenages, à arbres de transmission et à vis sans fin.[16] Les premiers brevets canadiens dans ce domaine remontent aux années 1840, mais c'est à partir des années 1860 que ces inventions deviennent nombreuses. Durant la période de 1866 à 1911, nous pouvons dire que le Canada est entré dans la période industrielle. À ce titre, les inventions tendaient à accélérer la cadence de la production avec une plus grande performance dans les rapports qui existent entre la qualité, les dimensions de l'appareillage, la durée d'utilisation et le prix. C'est dans ce contexte de plus en plus productif et particulièrement exigeant que des inventeurs vont développer de nouvelles machines.

Les difficultés technologiques rencontrées dans l'invention de machines rotatives, comme celles d'Hamilton et d'English, sont énormes. Le dictionnaire Lami, publié dans les années 1880, relate qu'il n'existerait aucun système qui soit parvenu à résoudre les problèmes de la friction[17] : nous avons relevé de nombreux exemples de ces inventions dans l'histoire de la technologie et les ingénieurs du Bureau des brevets en ont même fait un tableau récapitulatif au bénéfice des inventeurs.

Reliée directement à la machinerie de la production, nous avons retenu la seule invention à avoir remporté un prix pour ses qualités industrielles : une machine à fabriquer les briques par Bulmer & Sheppard (U.S. Jul. 9, 1872, #128 727; CAN. Jul. 20, 1871, #1069). L'importance de la brique se justifie par son emploi sur une très vaste échelle dans la construction depuis des millénaires. La production faisant appel à des techniques industrielles sera d'abord introduite en Angleterre. L'une des premières inventions de ce type a été faite par William Irving, en 1841. Il s'agissait d'un procédé servant à couper les briques.[18] Nous nous sommes rendu compte que les progrès réalisés en Angleterre n'ont pas été les seuls à intervenir et que, dans ce domaine, les inventeurs canadiens déposèrent plusieurs brevets assez tôt au XIX^e siècle.

Les fabricants canadiens recherchaient de meilleures techniques de fabrication des briques. C'est dans ce contexte que l'une des premières machines canadiennes dans cette industrie, qui servait à moudre l'argile, a été inventée par Austin Adams en 1844 (*Machine for grinding clay*, #67) et que celui-ci inventa également une machine à recevoir les briques en 1847 (*A revolving brick receiver*, #119). Les machines à fabriquer des briques commencèrent assez tôt à être brevetées; la première presse pour faire des briques aurait été conçue par George K. Burrows de Toronto en 1846 : *Method of making presses for the purpose of pressing clay, and other ductile substances, into any form, such as Bricks, Tiles, &c* (#208). La même année, David J. Ellis déposa un brevet présentant une autre machine pour fabriquer les briques actionnée par la force du cheval.

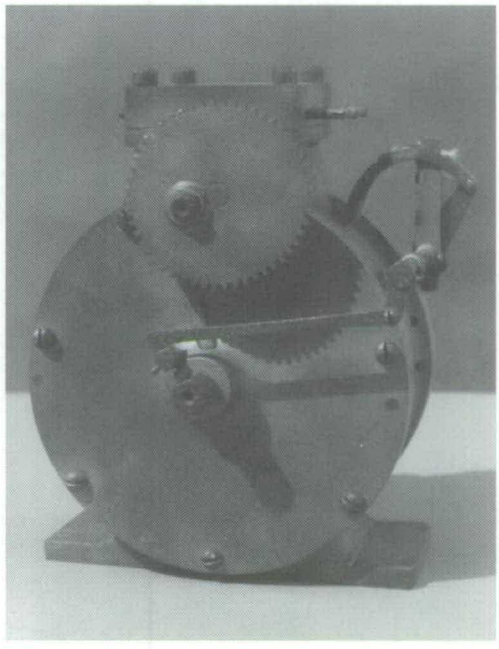


Fig. 3
Moteur rotatif à vapeur, P. English, 20 octobre 1874

Les machines à comprimer l'argile dans la fabrication de la brique furent nombreuses. D. Gould en inventa une en 1856, *Pressed Brick for building purposes* (#611), puis P. Parkeson introduisit la force de la vapeur dans son invention en 1857, *Steam Press for making Bricks, Tiles &c, from dry clay* (#791). Dès 1852, James Maclaren inventa une façon de faire des moulages de briques et d'ornements, *Mode of making Bricks and Architectural Ornaments* (#343).

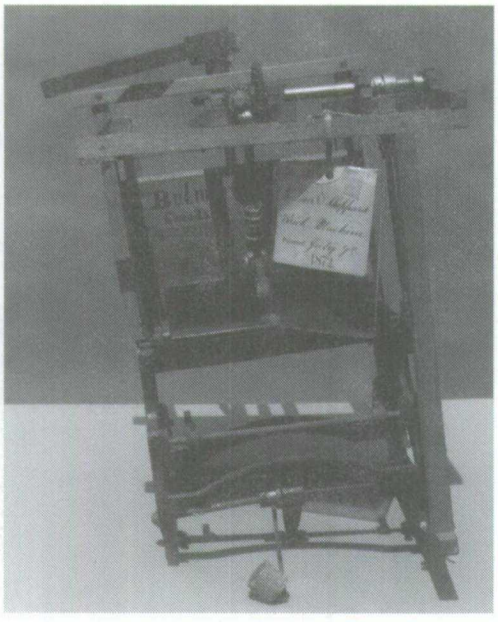


Fig. 4
Machine à fabriquer les briques, Bulmer et Sheppard, 20 juillet 1991

Les moulages sur les briques ont été introduits au Canada par l'invention de J. H. Charnock en 1854, *Machine for Moulding all descriptions of Tiles, Pipes and bricks, for drainage, sewerage, building or other purposes, from clay or other plastic subtances* (#451). Dans les années 1870, la brique fut utilisée assez largement dans la construction. En conséquence de ce phénomène, plusieurs inventions se rapportant à la fabrication industrielle de la brique virent le jour.

L'invention dont nous avons étudié la maquette fut faite par Henry Bulmer et Charles Sheppard, tous deux de Montréal. Ces hommes furent associés durant un certain temps et déposèrent un premier brevet en 1868 pour une première machine à fabriquer des briques automatique (#2624). C'est en 1871 qu'ils inventèrent la nouvelle machine à briques automatique constituant celle représentée par la maquette de la collection étudiée. Leur machine pouvait fonctionner avec l'énergie de la vapeur, de l'eau ou de la force animale. Les inventeurs prétendaient que leur machine pouvait faire « *a much greater number of bricks, than the machine at present time* ». L'invention combinait plusieurs éléments déjà en usage à l'époque et permettait surtout d'effectuer plusieurs opérations automatiques : l'argile était moulue à l'aide de couteaux et poussée, en la pressant, dans un moule de six briques et le mouvement automatique de l'appareil évacuait le moule sans l'intervention d'ouvrier. Cette machine pouvait fabriquer plus de 13 000 briques par jour. Ses qualités ont été reconnues lorsqu'elle a remporté un premier prix lors de l'exposition provinciale d'Ottawa en 1875.

La maquette d'invention : une approche de la culture technique dont les collections et l'étude restent à développer

Si l'état des collections canadiennes nous le permettait, nous pourrions sans doute aller plus loin dans l'étude des maquettes d'inventions. C'est l'obstacle à une étude dépassant le stade de notre « défrichage », et ce n'est pas le seul problème !

Après l'aperçu que nous avons eu d'une petite parcelle de collection, nous sommes devant plusieurs constats au point de vue de l'information et de la réalité matérielle associées à la maquette d'invention. Ce type de maquette fait partie d'une culture matérielle produite au XIX^e^ siècle, mais on a souvent tendance à ne regarder la maquette que sous l'angle d'un objet de collection et non comme l'un des éléments porteurs de savoir.

Une étude de l'objet technique comporte des difficultés au plan méthodologique, comme en ont fait foi les discussions lors d'un séminaire au National Museum of American History, en 1984.[19] Ce séminaire a surtout montré qu'il n'existait pas de consensus quant à la démarche qui conviendrait aux diverses formations autour de l'histoire de la technologie.[20] Il existe notamment un gouffre profond dans la perception du rôle éducatif et du rôle de la recherche, entre les universitaires et les muséologues, au sujet des objets façonnés. Les chercheurs s'accordent sur la nécessité d'aborder la question d'une culture technique sur le mode multidisciplinaire.

L'observation de l'objet comme source primaire d'information est une démarche connue des historiens de l'art, des anthropologues et des ethnologues en culture matérielle. Les chercheurs décrivent l'objet de collection en regard de la construction, des matériaux, de l'utilisation et même du symbolisme. Dépassant le stade du simple objet de collection, la maquette a autrefois fait l'objet d'un examen poussé par les ingénieurs. Dès lors, elle prend une grande signification car l'obtention d'un brevet atteste l'originalité dans un ou plusieurs aspects techniques. Nos perspectives dans l'étude des ma-

quettes rejoignent la relation de l'objet avec l'ensemble de l'environnement technologique et l'interaction du milieu culturel impliqué. Une branche de l'ethnologie peut nous intéresser.

L'étude de la technique telle qu'envisagée par une partie des ethnologues regarde l'objet.[21] L'approche de la culture matérielle et les raisons de son regain de popularité chez certains ethnologues sont clairement exprimés par Stephen Beckerman, de la Pennsylvania State University : « La plus ancienne des activités humaines – la production et l'usage d'objets manufacturés – demeure aussi l'une des plus *pures* et nous permet peut-être une vision plus claire de ce que signifie le mot *humain,* au sens de *porteur de culture* ».[22] La « technologie culturelle » s'intéresse aux phénomènes techniques qui touchent l'action de l'être humain sur la matière.[23] Son étude dégage une analyse des objets, des processus (chaînes opératoires ou gestuelles), des connaissances qui sont contemporaines aux objets, des facteurs de cohérence et de compatibilité. La méthodologie consiste à :

1) traiter l'objet pour retrouver un sens dans une « classification universelle »;
2) dégager des critères formels destinés à faire un triage dans les procédés reliés à la technique, identifiable à l'ensemble des procédés voyant l'action transformant la matière (système technique);
3) analyser les relations du système technique avec l'organisation sociale.

Bien sûr, l'établissement d'un corpus est préalable. Celui-ci rassemble des descriptions d'objets, des gestes, des connaissances, mais aussi des étapes stratégiques (nécessaires) liées au processus. Ces pistes conduisent éventuellement à la reconnaissance des transferts technologiques de même qu'à la rupture dans la technique (les innovations). La partie touchant les transferts, ou emprunts, est intéressante puisqu'elle pourrait amener à comprendre les liens ou l'inexistence de liens entre les techniques dite de haute technologie et celle dites traditionnelles. On considère également les adaptations propres à un milieu et certaines autres propres aux processus similaires à divers modes de production. Les pistes sont parfois des plus évidentes, car il existe des processus et des techniques qui se réfèrent à des modèles et des auteurs. L'analyse caractérise alors des liens. Une importance relative est donnée aux méthodes d'identification. Sigaut dit à ce sujet que, sans une « identification des faits techniques, les observations et les descriptions sont très difficiles, et leur utilisation scientifique ultérieure est pratiquement impossible ».[24] Ceci nous ramène au point de départ, où l'absence d'aspects descriptifs adéquats repose sur des critères plus ou moins esthétiques ou sur une longue énumération de caractéristiques. Dans la pratique, une identification doit se démarquer d'une classification, mais dans le cas des techniques ou des processus, elle établit des séquences et des rapports entre « des opérations qui l'avoisinent dans le réseau ».[25] Cela signifie que :

1) une opération, c'est aussi quelqu'un qui fait quelque chose;
2) une opération se définit par sa position par rapport aux opérations voisines dans le système technique;
3) les opérations ayant la même fonction dans des systèmes techniques sont homologues;
4) identifier une technique, c'est pouvoir la distinguer de toutes celles avec lesquelles on peut exécuter ce même ensemble d'opérations homologues.

Allant au plus profond de l'objet, l'étude consiste d'abord en l'organisation d'une description de l'objet et ensuite en une classification fonctionnelle qui rejoint la démarche de l'ethnologue. Une fois atteinte la maîtrise des techniques et de ses objets, l'assimilation des connaissances historiques est nécessaire. Nos moyens de parvenir à cette connaissance s'inspirent de sources traditionnelles retenues par l'histoire et des ouvrages contemporains qui sont des points de repères pour orienter les recherches. De son côté, le fonds technique des brevets, surtout en ce qui concerne les inventions du type industriel, peut être considéré comme un excellent représentant de la technologie passée ou actuelle. La représentativité d'une invention est intéressante parce que ces objets sont triés en fonction de l'originalité de l'invention et des capacités de réalisation.

Aujourd'hui, l'étude des brevets, des inventions et de leurs maquettes originales doit être considérée comme l'observation la plus directe d'un phénomène et de son producteur. L'influence des brevets sur la technologie durant une époque déterminée est double : en protégeant une invention, elle permet la diffusion des résultats. D'autres inventeurs peuvent alors voir de nouvelles applications ou correctifs. Des industriels peuvent trouver des solutions possibles à la production.

Il reste deux attitudes possibles à adopter pour parler des maquettes d'inventions comme

élément culturel : celle du collectionneur et celle de l'historien.[26] Adopter l'attitude du collectionneur est préférable, car elle sert à regrouper et mettre en valeur, tandis que l'autre tire des qualités informatives et autorise trop souvent un retour en entreposage. La maquette doit être exposée, mais elle doit l'être sans négliger des aspects fondamentaux, comme l'a fait remarquer Dodd en examinant une exposition de maquettes américaines au N.M.A.H., en 1986[27] :

> *The strengths of this exhibit were its visual appeal and the dramatic way in which it welcomed the visitor to the museum. Unfortunately, these strengths seem to have been purchased somewhat at the expense of relevancy. Often it was not clear from the object itself or from the label accompanying it just how it exemplified either invention or enterprise – neither was defined – or what, if any, was its relationship to the American patent system. This ambiguity was particularly disappointing where the object had a stronger association with the themes of the exhibit than the label suggested.*

Conclusion

L'analyse et l'utilisation d'une maquette d'invention comporte plusieurs éléments. De par sa condition matérielle, la maquette est d'abord un objet fabriqué par un artisan qui emploie des matériaux tels que le bois et certains métaux, souvent du cuivre. L'aspect tridimensionel a un effet visuel important. Les maquettes ont généralement moins d'un pied et doivent comporter les principaux éléments qui font l'objet du dépôt. Pour les fins des examinateurs, la maquette sert à en faire comprendre le fonctionnement. On pourrait donc trouver une façon de l'utiliser à des fins didactiques et non seulement en terme d'éléments visuels.

À l'heure actuelle, la dispersion des collections, la plupart étant privées, conjuguée à l'inaccessibilité de certaines, rend l'examen et les comparaisons difficiles, sinon impraticables. Il n'en demeure pas moins que les maquettes forment d'excellents sujets et peuvent constituer un apport majeur pour des collections, ne serait-ce que comme symboles visuels, souvent uniques, d'un cheminement créateur. Un des emplois de la maquette serait celui d'un élément d'exposition servant à compléter les maillons de la chaîne industrielle du XIX^e siècle. Puisque plusieurs machines ou produits ont disparu, l'utilisation d'une maquette originale ne pourrait être que très avantageuse. Si un contexte d'invention est offert, l'objet peut montrer le cheminement critique déployé par des miliers d'inventeurs, dont plusieurs ne nous sont pas connus.

La variété des techniques représentées par les maquettes de la collection étudiée recoupe un certain nombre d'objets industriels façonnés dont il y a de fortes chances pour que ce soit le dernier vestige matériel. Leur étude nous a entraînés sur l'une des avenues les moins explorées des inventions canadiennes. Une maquette d'invention peut avoir existé sans que son objet ait été mis sur le marché, mais d'un autre côté elle autorise justement la découverte de ces objets fonctionnels qui n'ont pas laissé d'autres traces matérielles, ne connaissant pas le succès souhaité. À côté d'une invention dominant le marché, la maquette d'invention d'un objet qui n'a pas connu ce succès est un outil essentiel aux examens comparatifs.

On peut dire que les inventeurs sont également les principaux instigateurs de la perte des anciennes techniques. C'est en voulant innover qu'ils entraînent l'abandon des processus techniques désuets et, à longue échéance, la perte des exemplaires qui ont contribué à l'évolution des techniques. D'autre part, une invention spécifique peut n'avoir fonctionné que dans un cadre industriel précis, très spécialisé, et même peut avoir été employée dans une seule industrie. Dans ce cas, il se peut que les machineries qui ont alors servi n'aient connu qu'une faible distribution, augmentant les risques de la perte totale de cette technologie aujourd'hui.

Considérant ces énoncés, plusieurs facteurs ont contribué à faire disparaître des éléments techniques de notre histoire. De ce fait, la maquette peut être le seul témoin matériel qui subsiste. Celles des maquettes qui ont survécu « miraculeusement » au temps peuvent nous aider à conserver cette technologie. La formation de collections pourrait servir à diverses fins, mais, dans l'immédiat, elle fait face à une certaine urgence : des maquettes qui ont plus d'une centaine d'années peuvent subir des conditions difficiles à leur conservation.

L'état d'urgence rend nécessaire le rassemblement de collections dans des conditions favorables à leur conservation. L'étude pourra alors se faire avec des moyens adéquats et ensuite faire l'objet d'expositions.

Notes

1. Leroi-Gourhan 1973, p. 376-383.
2. Braudel, 1979 (3), p. 470-472.
3. *Encyclopædia Britannica*, vol. 13, 1974, p. 1071.
4. CRB, 1954, p. 6-7.
5. Gagnon, 1949, p. 16-17; Norman, 1960, p. 3-5.
6. Harvey, 1885, p. 7-8.
7. *Mecanics Magazine*, Dec. 1876, p. 367.
8. *Mecanics's Magazine*, June 1875, p. 167.
9. Barlow, 1873, p. 46-47.
10. Israel, 1991, p. 1099.
11. C.S.R., 1875, p. 343.
12. Strandh, 1979, p. 222-225.
13. *Mecanics Magazine*, March 1873, p. 72.
14. *Mecanics Magazine*, Nov. 1875, p. 330.
15. *Mecanics Magazine*, June 1875, p. 167.
16. Strandh, 1979, p. 37-72.
17. Lami, 1888, t. 3, p. 227.
18. Hudson, 1976, p. 119.
19. Workman, 1986, p. 118.
20. Workman, 1986, p. 120.
21. Une bonne partie des lignes qui suivent sur le traitement des objets techniques est tirée de l'introduction de ma thèse en cours, donc encore inédite. Cette thèse porte sur l'archéologie industrielle et développe une approche appliquée particulièrement aux brasseries et distilleries. Quelques sites ont connu des interventions archéologiques. L'objectif est d'isoler un phénomène et de reconnaître les aspects originaux du développement canadien, depuis les origines jusqu'aux portes du XX^{e} siècle. La culture technique y trouve une grande place.
22. Beckerman, 1985, p. 146.
23. Lemonnier, 1983; Creswell, 1983; Sigaut, 1985.
24. Sigaut, 1985, p. 9.
25. Sigaut, 1985, p. 10.
26. Creswell, 1981, p. 95.
27. Dodd, 1987, p. 671.

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The Cliff Street Heating Plant, Ottawa

BRYAN DEWALT

Introduction

The Cliff Street Heating Plant (Fig. 1) was built in 1918 to provide heat for the new Centre Block of Parliament and for several other government buildings. Likely the first federal building of its type, it incorporated recent advances in materials, mechanical systems, and design principles. It still supplies steam and cooling water to most federal buildings in central Ottawa through an extensive system of tunnels and buried pipes. It is one of the largest central heating facilities in Canada and has the largest air-chilling capacity of any central plant in the world.[1]

Historical Associations

Thematic

The Parliament Buildings and an increasing number of administrative, judicial and cultural structures have been symbolically or functionally central to the historic development of the Canadian state. While not in itself being a focus for this history, the Cliff Street Heating Plant has played an important auxiliary role. Through the supply of relatively clean, convenient and economical heat, it has facilitated the physical expansion of federal government operations in Ottawa.

Perhaps of greater interest is the Cliff Street Heating Plant's place in the history of architecture and heating technology. Improvements in this technology revolutionized building design and construction. Open fires were the primary sources of heat in early Canadian buildings. In the eighteenth century the closed stove became common in North America, offering more efficient combustion of fuel, radiation of heat, and dispersal of smoke. But stoves differed little from fires in that heat was still produced in the room in which it was required. In large buildings especially, this involved difficulties in the delivery of fuel, the cleaning and disposal of coal dust, ashes and soot, and the prevention of fires. Stoves, like fires, also consumed fresh air, which could only be replaced through open windows, an unsatisfactory situation in a cold climate.

By the nineteenth century builders had made further improvements. They transformed the common stove into a furnace by moving it out of the room to be heated but allowing the air it warmed to pass into the room. Almost simultaneously, builders harnessed steam technology for heating, first of factories, then of homes and offices. By mid-century, hot water heating had also become viable. Both these systems utilized boilers that could be fired in seclusion from the day-to-day functions of buildings.[2]

Like the elevator and electric lighting, central heating and ventilation systems were prerequisites for the development of modern ar-

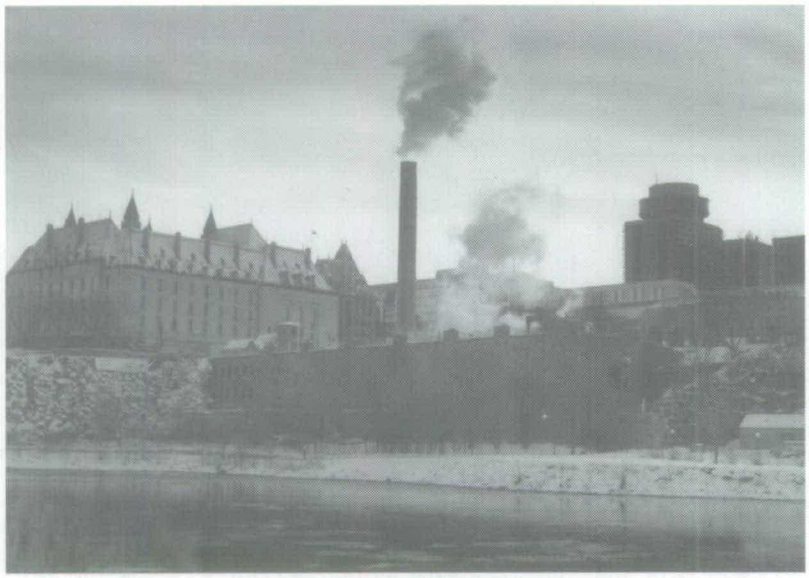


Fig. 1
Cliff Street Heating Plant from Victoria Island, 1987. (National Historic Parks and Sites (NHPS), Architectural History Branch (AHB))

chitecture. Previously, building design had been limited by its dependence on lighting and ventilation from windows and on heat from fireplaces or stoves located in the actual spaces being warmed. Heating, lighting and ventilation supplied from a central source allowed for greater flexibility in grouping interior spaces. Structures could be more densely designed with less exposure to the exterior environment as interior climate control was no longer dependent on it. Hence taller, more massive buildings became possible. As Robert Bruegmann has written:

> *The architect was able to ignore local climatic conditions and orientation, since problems could be overcome by equipment. The triumph of these developments was the sealed glass box of the International Style, which could be built on any site in the world and all of whose functions could be placed anywhere in the building.*[3]

Canada's first Parliament Buildings in Ottawa, erected between 1859 and 1866, relied on a vault system of heating similar to that designed by David Boswell Reid for the new British Houses of Parliament. Boilers supplied steam to coils or pipes placed in vaults underneath the building. These coils heated fresh, cold air brought in from outside through tunnels. Forces of convection then conveyed this air through flues to all parts of the building. Vitiated air was extracted through a tall shaft. This system was apparently a failure. Fireplaces and steam coils in many rooms provided supplementary heat. A steam heating system was later installed in the Centre Block.[4]

The first Parliament Buildings thus represent a transitional stage in the application of central heating technology to the architecture of a large public building. By 1916, when the Centre Block was destroyed by fire, both heating technology and architects' understanding had advanced significantly. While by no means a "sealed glass box," the new Centre Block was an essentially modern structure, its gothic surface features hiding a steel skeleton, electric lights and hot-water radiators. Later government buildings in downtown Ottawa conformed even in outward ways to the International Style.

The logic for constructing the Cliff Street Heating Plant, as opposed to individual systems in each structure, was simple. Heat distributed to all parts of one building from a central boiler could quite easily be distributed to several buildings. Heating and ventilation engineers in the early twentieth century touted this innovation, called district heating, as the wave of the future. Urban development was creating dense, commercial city centres, resulting in increasing pollution from smoke, soot and ashes produced by numerous small, inefficient heating plants. District heating might free city downtowns of this blight and spare building owners the high fuel and labour costs and the fire hazards also resultant from individual systems.

An experimental district heating system was opened in Lockport, New York, in 1877. New York City had its first district heating plant by 1883. The first such plant in Canada opened in Chatham, Ontario, in 1905–06. By 1927 there were over 200 district heating plants in North America, serving both individual commercial buildings and educational institutions, hospitals, and other unified complexes. Planners of the new Parliament Building also had the model of Washington, D.C., where a new plant opened in 1910 to serve the Capitol building and a number of other government structures.[5]

John A. Pearson, architect of the new Centre Block, was an advocate of district heating and had designed a plant at the University of Toronto.[6] Designed under his supervision with the assistance of Consulting Engineer Melvern F. Thomas, the Cliff Street Heating Plant became an economic and functional success. In 1926 one observer was so impressed, he called it "one of the most complete illustrations on the American continent of the application

of mechanics and physics to the problem of heating in a climate of Lat. 45°43' N, a series of large government buildings."[7]

Local Development

Ottawa's transition from lumber town to government city occurred in the four decades before 1940. While the city's population grew from 60 000 to 155 000, this 150 per cent increase was surpassed by a 1000 per cent increase in the number of public servants. Concomitant to this growth in government employment was the government's heightening profile on the urban landscape. From their crowded quarters on Parliament Hill, departments dispersed to various parts of the city, especially along the L-shaped axes formed by Wellington and Sussex Streets. The Royal Mint and the first Public Archives were among 11 new structures erected between 1896 and 1913. Most were in the downtown area. In the inter-war years, the Connaught, Justice, Confederation, Bank of Canada and Supreme Court buildings reinforced the government's physical presence in the centre of Ottawa. The construction on Parliament Hill of a larger Centre Block with a prominent tower, after the fire of 1916, was symbolic confirmation of this new prominence.[8]

The far more prosaic task of heating these large public buildings fell to the Cliff Street Heating Plant, built in conjunction with the new Centre Block. Observing the success of district heating in other cities containing a high density of large structures, planners of the Cliff Street Heating Plant had designed it to be economically expanded as demand for its steam and hot water increased. By 1923 its system of tunnels and pipes provided heat to the Centre Block, East and West Blocks, Langevin Block, the old Post Office, the old Supreme Court, and a smaller building next door[9] (Fig. 2). In 1987, the Cliff Street Heating Plant's distribution system extended from the National Archives and Library in the west, east parallel to Wellington Street, north as far as the Mint, the War Museum and the new National Gallery, and south to the National Arts Centre, the Congress Centre and the Department of National Defence Headquarters. Since that time the network has been further extended (Fig. 3; and, see Epilogue). Though all but its chimney are invisible to most Ottawans, the presence of the Cliff Street Heating Plant is felt throughout the core area of Ottawa.

Architecture

Aesthetic Design

The Cliff Street Heating Plant is a flat-roofed, rectangular structure approximately 90 m long, 18 m wide and 18 m high. Two one-storey extensions abut the north wall, and a 54 m brick chimney projects from the roof near the longitudinal centre of the building. Framed in reinforced concrete, the plant is almost devoid of ornamentation. In this sense it is similar to heating plants built later by the federal government in Ottawa. Like the plants at Sussex Drive (1931), Booth Street (1944–45), and the Central Experimental Farm (1960), the Cliff Street plant is a simple rectangular envelope enclosing a complex mechanical system. Architectural reference to the surrounding landscape or streetscape is found only in materials and some minor detailing. Cliff Street, as the first and largest of these structures, may well represent a model.

The Cliff Street plant was designed to harmonize with the rugged cliffs along the south bank of the Ottawa River (Fig. 4). In fact the building, originally only 38.4 m long, was inserted into an 18 m niche excavated from the cliff face. Its north wall, facing the river, was covered in rock-faced, uncoursed limestone salvaged from the excavation. Its roof was built flush with the summit of the cliff.[10] The north elevation of this manmade escarpment was punctured by six tall, narrow, segmental windows along the length of the first floor. Two rows of four smaller segmental windows were plac-

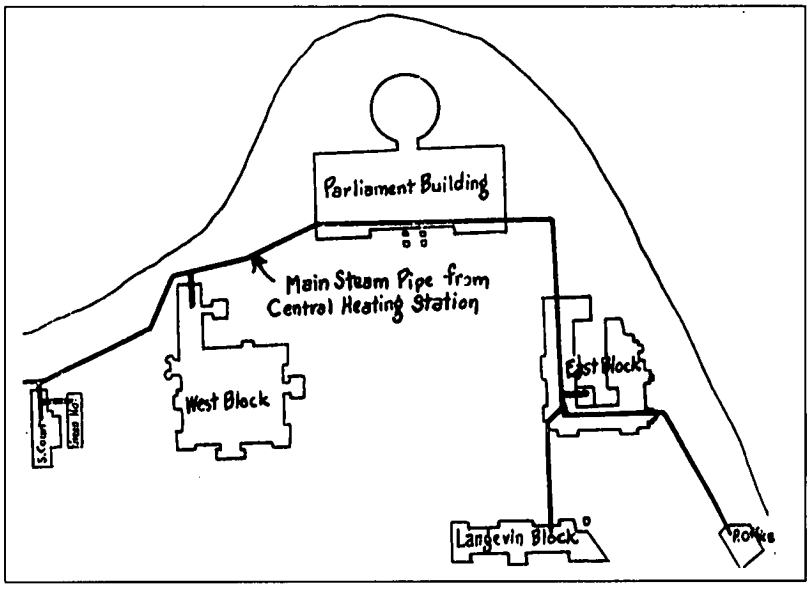


Fig. 2
Buildings connected to Cliff Street Heating Plant pipe system, 1923. (National Archives of Canada (NA), RG11, B6, vol. 3187, n.p.)

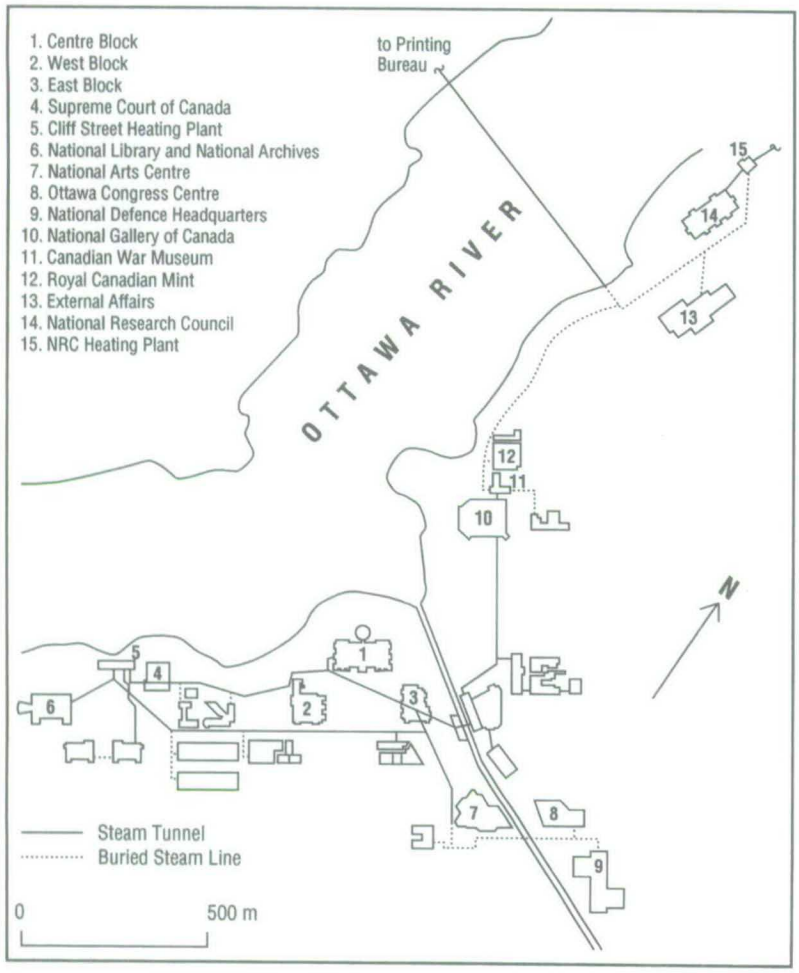


Fig. 3
Distribution system, Cliff Street Heating Plant, 1993. (Government Services Canada)

ed at the second and third storey levels at the east end, where the pump house and offices were located. The windows and rough-hewn rock mimicked the textures and stratification of the natural rock face to the east. The only other exterior ornamentation was along the roof line, where a plain concrete cornice was placed and two projecting ash pit vents were faced with limestone and visually connected by a metal pipe railing.

This compact, austere, but attractive, structure was radically altered in subsequent years. In 1929–30 a 20.7 m, three-storey extension was built onto the west end in a style similar to the original but without second and third storey windows. A further western extension, also of similar facade, was built in 1951–52. At the same time a one-storey ash handling plant was tacked onto the front wall at about the midway point of the enlarged structure. In 1967 the building reached its current configuration with the construction of a one-storey pump house in front of the original portion of the plant.[11] Both the one-storey additions are faced in the same uncoursed limestone as the main structure and have segmental windows vaguely reminiscent of the original main floor windows they now obscure. These exterior changes have combined to create a cluttered north elevation at the first storey level surmounted by a long, blank facade unbroken by windows. The original proportions of walls to windows have been destroyed, and the entire structure, now much larger, dominates the site in a way it never did originally.

Functional Design

As functional as was the external architecture of the Cliff Street Heating Plant, the original space enclosed by this rectangular envelope conformed even more rigorously to technological imperatives. The plant was designed to accommodate the state of the art in coal-fired boilers and hot-water circulation systems. Architect John Pearson and engineer Melvern F. Thomas used the cliff-bottom site to their advantage in designing these operations. The internal layout has been altered significantly as a result of more recent historic changes in the mechanical systems housed in the building. Despite major differences in technology, however, the plant has proven adaptable to these changes.

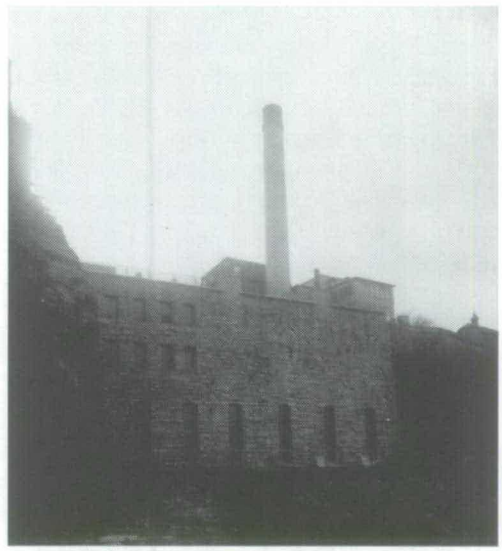


Fig. 4
Cliff Street Heating Plant, 1920. (NA, PA 164451)

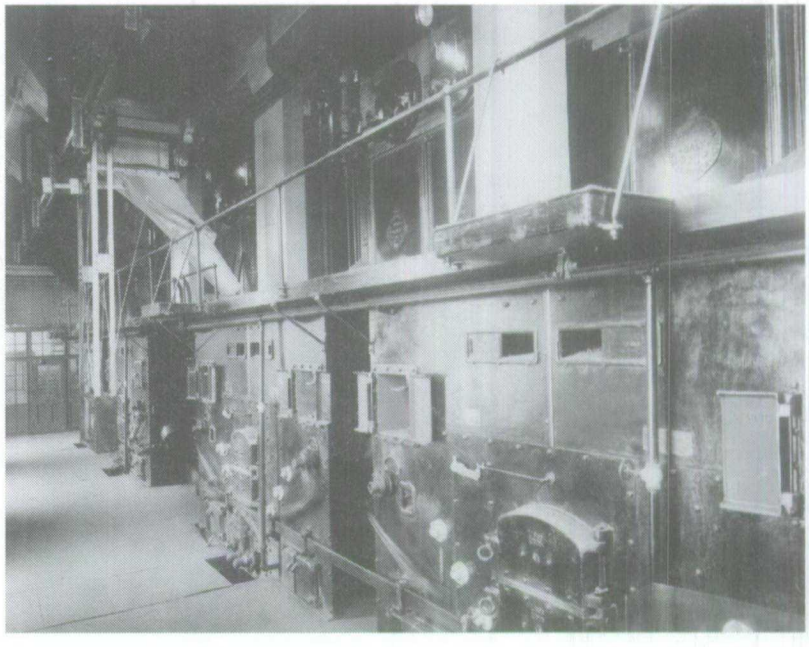
The western two thirds of the structure was originally occupied by four 500 horsepower Babcock-Wilcox horizontal water-tube boilers (Fig. 5) arranged in a line between two rows of reinforced concrete columns supporting the roof. Coal delivery was facilitated by the location

of the entire plant below street level. Trucks or wagons delivered coal to the plant roof, where it was weighed and dumped into large concrete storage bunkers occupying the second and third storey levels above each boiler (Fig. 6). A travelling weigh hopper mounted on a track below the storage hoppers directed the coal to a stoker hopper located in front of each boiler (Fig. 7). Here it was separated and pulverized before being fed into the furnace. Ashes were conveyed to one end of the building, where a bucket conveyor elevated them to another overhead storage hopper, where they were periodically lifted to street level and discharged. Hence the movement of all coal within the plant was downward or lateral, relying largely on gravity for movement. Ashes, less bulky and lighter, were the only solid materials requiring hoisting. This effective design was complemented by provision for inexpensive expansion to the west in order to double boiler capacity. Additional boilers could be installed in extension of the building envelope without altering the internal layout.[12] As noted above, this was done twice, in 1930 and 1951–52.

The eastern third of the Cliff Street Heating Plant housed functions distinct from the generation of steam. Often referred to as the pump house, this portion consisted of three levels. The first housed pumps that provided feed water for the boilers from the nearby Ottawa River. The second accommodated the plant engineer and the instruments necessary to monitor plant operations. The third housed water heaters and centrifugal pumps to generate and distribute hot water for the heating of buildings. Being nearest to street level, the third floor was chosen for this function in order to reduce static head on the pumping system, already obliged to push hot water through a tunnel several hundred metres long. But with the plant being situated lower than the buildings it served, water could return by gravity.[13]

The interior of the Cliff Street Heating Plant was gutted and rebuilt between 1965 and 1967 as part of the overhaul of its mechanical systems. Large oil and gas boilers replaced the coal-fired units, the concrete storage hoppers were removed, and four air-conditioning water chillers were installed in the locations of the original four boilers. While the pump house retained some pumping and electrical functions, a new pump house annex was added to the north wall. In addition, hot water generators and pumps were removed from the third floor. The plant henceforth provided no hot water, instead supplying steam to water heating units in individual buildings.[14] The conversion to oil and gas obviated the need for structural concessions to coal and ash handling and therefore eliminated one of the principal design features of the Cliff Street Heating Plant. But aside from a lack of storage space, the building functions well in its present capacity. This attests to the adaptability of its original design.

Fig. 5
Boiler room, 1920. (NA, PA 164447)



Materials

Reinforced concrete was an appropriate choice for the structure of the Cliff Street Heating Plant. Though still a relatively new material in 1918, enough large buildings had been constructed throughout North America to recommend its qualities to the designers. Its fire resistance was a natural asset in a structure containing coal-fired boilers, and its economy was appropriate for a functional building constructed in wartime when steel was scarce. Its strength, finally, allowed for concrete bunkers capable of bearing heavy weights of coal and for a concrete slab roof that required a minimum number of columns interfering with the arrangement of complex mechanical systems.[15]

Designer

John Andrew Pearson was born in England in 1867, receiving his architectural training at Sheffield. He emigrated to Canada in 1888, and in

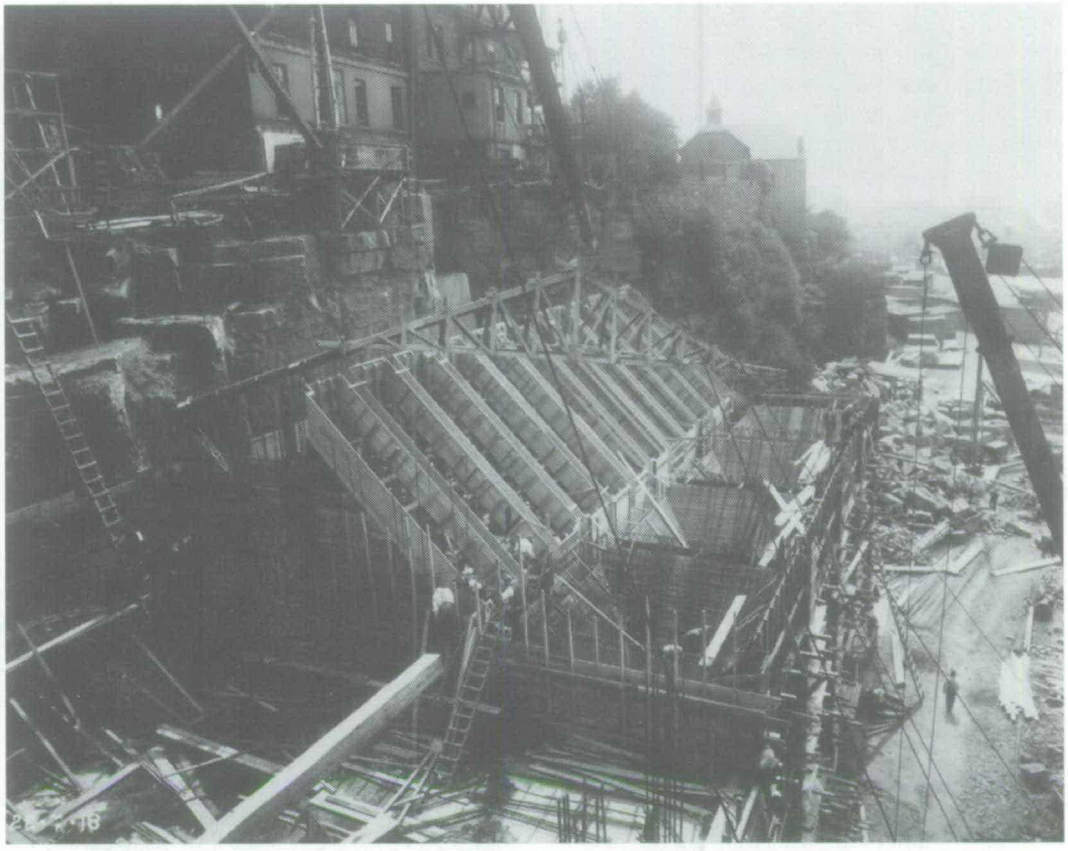


Fig. 6
Concrete forms for coal storage hoppers, 1918. (NA, PA 164448)

1893 formed a partnership with Frank Darling that lasted until 1923. Darling and Pearson was one of the most successful architectural firms in Canada, becoming best known for designs of banks and office buildings in the classical manner of the beaux-arts style. Among Pearson's best known works, aside from the Centre Block, are the Bank of Montreal, Toronto (1907), the Sun Life Assurance Building, Montreal (1914–17), and Trinity College, Toronto (1925).[16] Perhaps most relevant to his responsibility for the Cliff Street Heating Plant, Pearson designed a central heating plant for the University of Toronto in 1913.

Environment

Site

The Cliff Street Heating Plant stands on an isolated bank of the Ottawa River about 400 m west of Parliament Hill, just north of the open space between the Supreme Court and National Archives buildings. Located at the base of a steep cliff, the roof of the plant is on the same level as Victoria and Cliff Streets to the south. Access to the building, once from Cliff Street, is now generally from the west via the large parking area behind and below the National Archives.

No known buildings stood on this site prior to the construction of the Cliff Street Heating Plant. There was so little level ground that the plant had to be built on a spot largely excavated from the cliff itself. Photographs reveal the site was once used for lumber storage. No nearby evidence of this land use remains today, the development of the neighbouring parking lot and Victoria Island Park having obliterated any traces. The land south of the building was initially residential, later being occupied by World War II temporary buildings. Owned by the federal government, this land is now vacant.

Setting

The Cliff Street Heating Plant is an essentially industrial building. Planners of the building believed they had found in the obscure cove of the Ottawa River an ideal location for the plant. While close enough to provide heat to Parliament Hill, its noise, pollution, and inelegant architecture would not blight the government, commercial and residential districts of Upper

Town.[17] When built, it had less in common with the stately public buildings it served than with the mills, sheds and warehouses of nearby Le Breton Flats and Chaudière Falls. In fact, it stood almost at the point on the east-west line where the government city gave way to the lumber town.

Rapid development of the sawn lumber industry in this area began with the opening of American markets in the 1850s. Lumber became, with government, the twin pillar of the Ottawa economy. By the end of the century, mills, railway lines, and stacks of lumber dominated the area west of Parliament Hill along the Ottawa River. The 1900 fire dealt the lumber trade a blow from which it never recovered. But when the Central Heating Plant was built in 1918, the declining industry still had a major presence on Le Breton Flats, Chaudière Island and Victoria Island. Hydro-electric development of Chaudière Falls in the 1890s accentuated the industrial character of the Heating Plant's environs.[18]

The Cliff Street Heating Plant reinforced the industrial character of Le Breton Flats and the Chaudière district. Since its construction, however, industrial activity in the area has declined. In the late 1950s the Le Breton Flats community was bulldozed as part of an abandoned urban renewal scheme. By the 1970s, log booms had disappeared from the Ottawa River, and most of Victoria Island had been cleared for a park. But with the Chaudière Falls hydro-electric station and the E.B. Eddy plant in Hull, the Cliff Street Heating Plant forms part of a still-functioning industrial complex.

Landmark

The Cliff Street Heating plant is, aside from its chimney, not visible from Wellington Street or locations to the east, west or south. Pedestrians and passengers crossing the Ottawa River on the Portage Bridge may glimpse it in passing. But its presence is only truly appreciated from Victoria Island or the foot and bicycle paths on the south bank of the Ottawa River. Few people seem aware of the plant's purpose, in no small part due to its negligible impact on the streetscape.

Epilogue

In the last five years, Public Works Canada (now Government Services Canada) has undertaken several modifications to the plant's systems and its steam network (Fig. 3). In the plant, two obsolete boilers were replaced by a single new boiler with more than twice their combined capacity. A control room overlooking the boilers and equipped with computerized controls was built on the second floor in 1993. A new steam tunnel to the National Archives was built, and a new tunnel along Wellington Street is scheduled for completion in fall 1994. From the National Gallery, a line of buried steam pipes now extends north to connect with a line serving the National Research Council (now National Research Council Canada (NRCC)) and External Affairs Department (now Foreign Affairs and International Trade) and a line from the Canadian Government Printing Bureau (now Canada Communication Group) heating plant in Hull. The Hull connection allows for greater flexibility in the use of both plants and enables more complete use of the Hull plant's boiler capacity. As a result, the boilers of the small NRCC heating plant on Sussex Drive have been taken out of service.[19]

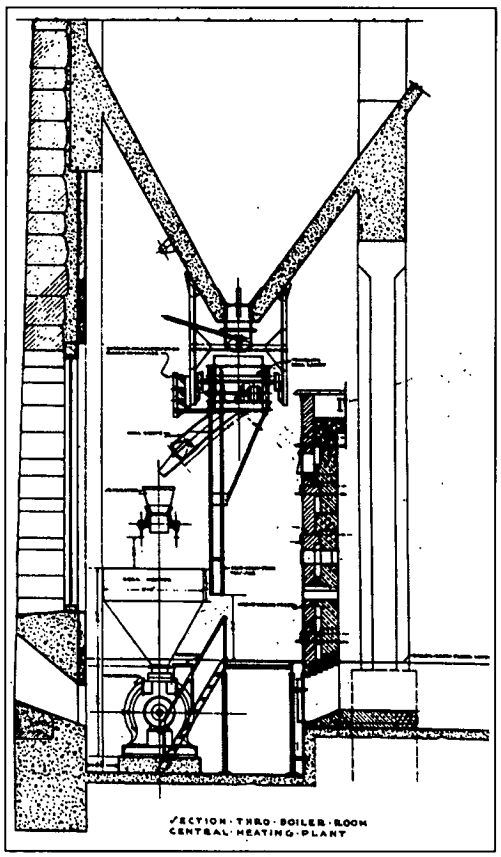


Fig. 7
Coal handling system, 1929. (Government Services Canada, Plan Room)

Notes

This paper was originally written for the Architectural History Branch, Canadian Parks Service, in fulfilling its mandate under the Federal Heritage Buildings Policy (now Chapter Nine of the Government of Canada's *Treasury Board Manual* on Real Property Management). In order to acquaint readers with the assessment criteria for federal heritage buildings, I have retained, with minor revisions, the standard format and style of the original report. I would like to thank Joanne Bergeron, National Museum of Science and Technology, for redrawing the map in Fig. 3.

1. Public Works Canada, History and Heritage Building Survey Sheet: Cliff Street Heating Plant.
2. L. M. Arkley, "Development of the Art of Heating and Ventilating in Canada," *Journal of the American Society of Heating and Ventilating Engineers* 32, no. 6 (June 1926): 431–38; Robert Bruegmann, "Central Heating and Forced Ventilation: Origins and Effects on Architectural Design," *Journal of the Society of Architectural Historians* 37, no. 3 (Oct. 1978): 144–48. See also Reyner Banham, *The Architecture of the Well-tempered Environment*, 2nd ed. (Chicago: University of Chicago Press, 1984); and Peter Collins, *Changing Ideals in Modern Architecture* (Montreal: McGill University Press, 1965), 235–39.
3. Bruegmann, "Central Heating and Forced Ventilation," 159.
4. Thomas Ritchie, *Canada Builds, 1867–1967* (Toronto: University of Toronto Press, 1967), 28; R. A. J. Phillips, *The East Block of the Parliament Buildings of Canada* (Ottawa: Queen's Printer, 1967), 39–40; Arkley, "Development of the Art of Heating," 440–41; Bruegmann, 150–51.
5. "Central Heating," *Canadian Architect and Builder* 18, no. 209 (May 1905): 67–68; A. G. Christie, "The Design of Central Heating Systems," *Canadian Engineer* (17 July 1913): 165–67; Arthur Williams, "Central Station Heating the Method of the Future," *Heating and Ventilating Magazine* (Aug. 1916): 13–16; "District Heating," *Domestic Engineering* (21 July 1928): 23–24; Jay Grant De Remer, "Central Station Heating: Nature of the Demand for Service," *Engineering Magazine* (Feb. 1914): 760–61; *Steam: Its Generation and Use* (New York: Babcock and Wilcox Co., 1889), p. 65; "The Chatham Central Heating Plant," *Canadian Architect and Builder* 19, no. 200 (March 1906): 45–46; George H. Draper, "The New Congressional Heating, Lighting and Power Plant at Washington," *Electrical Review and Western Electrician* (11 Dec. 1909): 1125–27.
6. John Pearson to J. B. Hunter, ca. Feb. 1917, National Archives of Canada, Department of Public Works Records, RG11, vol. 2654, file 1575-25A3, p. 57.
7. Peter H. Bryce, "Central Heating Plant for Canadian Government Buildings," *Heating and Ventilating Magazine* 23, no. 7 (July 1926): 78.
8. John H. Taylor, Ottawa: *An Illustrated History* (Toronto: James Lorimer/National Museums of Canada, 1986), 120, 142–48, 210, 212.
9. Estimates, 1923–24 – Public Buildings, National Archives of Canada, DPW Records, RG11, B6, vol. 3187, n.p.
10. *Ibid.;* Melvern F. Thomas, "The Heating and Ventilating System for the Parliament Buildings," *Construction* (May 1924): 169.
11. Department of Public Works, *Annual Report,* 1930, pp. 18–19; *Annual Report,* 1951, p. 29; *Annual Report,* 1952, p. 30; George King, Public Works Canada, interview with author, 21 December 1987.
12. Thomas, "The Heating and Ventilating System," 169–72.
13. *Ibid.;* Pearson and Marchand to Hunter, 7 February 1917, National Archives of Canada, DPW Records, RG11, vol. 2654, file 1575-25A3, p. 110.
14. George King, Public Works Canada, interview with author, 21 December 1987.
15. Information on properties of reinforced concrete may be found in: Ritchie, pp. 245–46, and Carl W. Condit, *American Building: Materials and Techniques from the Beginning of the Colonial Settlements to the Present* (Chicago: University of Chicago Press, 1968), 240–41.
16. *Canadian Encyclopedia,* vol. 3, p. 1378; Robert Hunter, "Centre Block" in "Parliament Buildings," FHBRO Report 86–52, Environment Canada-Parks, 1986, n.p.
17. Pearson and Marchand to Hunter, 7 February 1917, National Archives of Canada, DPW Records, RG11, vol. 2654, file 1575-25A3, p. 110.
18. Taylor, Ottawa, 52–56, 64, 77, 81, 97.
19. Marcel Piché, Government Services Canada, interview with author, 1 November 1993.

Exhibit Reviews

Comptes rendus d'expositions

University of Winnipeg, *Brooks: Coming Home*

GERRY BERKOWSKI

University of Winnipeg, *Brooks: Coming Home*
Curator: Sarah McKinnon, Art History Professor, University of Winnipeg
Author: Walter Hildebrandt
Artist and Designer: Peter Tittenberger
Duration: 12 January to 6 February 1993

The focus of this exhibit is the Brooks Aqueduct, one of many Canadian Pacific Railway (CPR) irrigation projects – ditches, canals, dams, and aqueducts – that were intended to promote settlement in southeastern Alberta in the early part of this century. Construction of the aqueduct began in 1908, and three years later Brooks, 185 km east of Calgary, was incorporated as a town. The aqueduct was operational by 1914, but was beset with financial, construction and engineering problems which led to its takeover by the Eastern Irrigation District (EID) in 1935. The monumental project, an unprecedented feat of engineering and labour, was eventually abandoned after structural flaws rendered it inoperable.

This story is told with a mixture of contextual narrative descriptions, quotations, anecdotal excerpts of oral history interviews, poetry, and graphics. Historical and contextual descriptions are laid out on 62 panels of text on sepia-toned paper. The text is derived from eyewitness accounts of the ruin, reflections of those who worked on the project, and Walter Hildebrandt's historical poems. In addition, there are 24 images. These are a combination of black-and-white archival photographs, and photographs altered with colour tints and plasticized overlays that provide a two-dimensional, collage effect. Generally, the story line is divided in half by a 1 m by 3 m colour computer-generated, pixel mural of the aqueduct. In the first section, visitors are given very general context about the history of irrigation in different parts of the world throughout human history. This is followed by a description of the construction of the aqueduct and its early years of development. The second part of the exhibit describes the unsuccessful efforts to make the project viable under the management of the CPR and EID, and its subsequent demise and abandonment.

Brooks: Coming Home, to its credit, is a rigorous intellectual exercise for those who are comfortable with descriptive, logically organized label copy. Many facts surrounding the aqueduct's history jump out at the reader unexpectedly, without the usual explanatory information that one finds in conventional displays. In one picture, for example, the overlay on an archival photograph shows a car driving on a highway (presumably to Calgary), while the text nearby reads:

> *U give it*
> *a double take*
> *cuz at first u can't*
> *figure it out*
> *it just looks like*
> *a big grey mass of something*
> *just when u look south*
> *of the highway*
> *goin' west towards Calgary*
> *just sort of like a*
> *tide that should be movin'*

Other overlays contain contemporary objects like waterslides, or modern building materials. All the factual content and context is presented in similar fragmented fashion. It is also assumed that the reader has some prior knowledge of engineering and construction jargon. In order to understand what happened, visitors need to spend some time reading the text, putting together the material, rearranging and digesting it, and constructing the story.

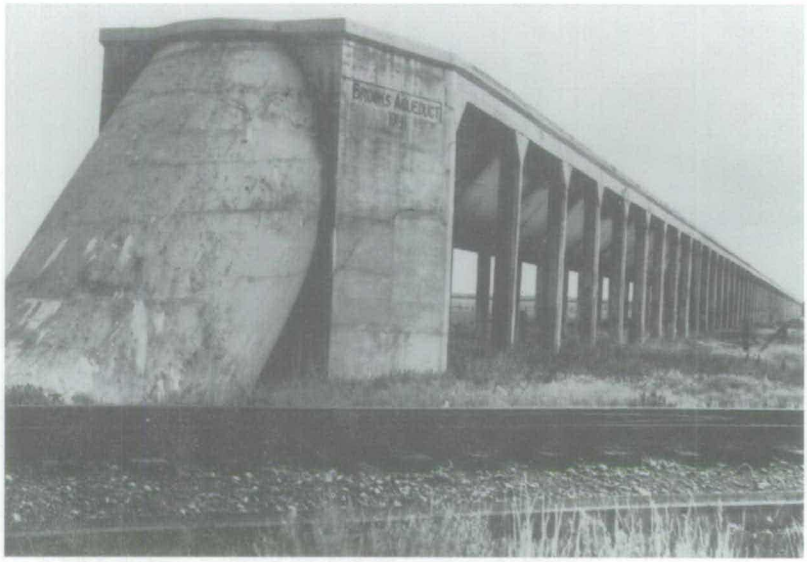


Fig. 1
Siphon outlet of the Brooks Aqueduct, ca 1950, one of the images appearing in the exhibit. (Courtesy Provincial Archives of Alberta)

The fragmented text is a means of pursuing one of the major curatorial objectives: to "unsettle and even jar the viewer/reader to reconsider both form and content." There are risks in following this line. In order to deviate from conventional modes, curators may be forced to abandon traditional historical prerogatives, and unwittingly end up catering to popular entertainment rather than a popular presentation of history. Rather than present something that is both informative and interactive, the danger is that by offering something so different it is interpreted as a mere curiosity. Sometimes extremely novel presentations can lead the viewer to a-historical or even anti-historical directions. The visitor is invited to view the material as an engaged participant but ends up by consuming images and text without critical thought or reflection.

The other problem is that such presentations can react against traditional narrative styles, whose own unique power to evoke audience responses is ignored in the process. It is astonishing how many people marvel at the power of the spoken word of oral cultures, which transmit values and history to their descendants. The explosion of interest in oral history as a resource for education and as an interpretive tool for ordinary people in the last 20 years testifies to the power of narrative story telling. Perhaps the discomfort with the fragmented text persuaded one visitor to write "relevant, but obscure" after passing through the exhibit.

Unfortunately, there is no foolproof method of evaluating how an audience interacts with displays. The question is: how do popular audiences reconstruct these fragments into a meaningful journey into history without a store of factual and contextual information available to them? One panel contains references to wages for teamsters and labourers in 1919, 1921, and 1922–25. Without some context, this can lead to the perpetuation of stereotypes of the "good old days," rather than inquiry into the complexity of situations that surrounded the struggle for wages and working conditions in that period. This is not a failure of the exhibit, but a comment on how difficult it is to question form and content in the presentation of history. It raises questions about what skills an audience needs to possess in order to participate in that ambitious curatorial objective.

One of the strengths of *Brooks: Coming Home* is that it invites the visitor to question the content of traditional modes of historical presentation. There are repeated references to authoritative and official histories of the Brooks site, where Hildebrandt draws attention to mainstream museum displays. One example is the Brooks and District Museum which has a bandstand donated by Nova Corporation:

> *Thanks to Nova, an Alberta corporation,*
> *there is a fine new*
> *bandstand*
> *where you might enjoy*
> *your picnic lunch*
> *and a five foot fence around the entire*
> *museum*

Traditional commemorative museum displays often reinforce nation-building progress narratives. Hildebrandt exposes these traditional forms for questioning. Commentary about these displays and narratives contained within them are implicitly critical, ironic statements about how history is constructed and presented to the public. The Brooks and District Museum, for instance, is commemorated as a 'walk through the ages,' with displays presenting

> *the dinosaur;*
> *the Indian culture;*
> *the ranchers;*
> *the sheepmen;*
> *the homesteaders;*
> *the farmers;*
> *the R.C.M.P.*
> *the C.P.R.; and*
> *the E.I.D.*

as well as articles from the war years.

Later, after reading about unsuccessful attempts to repair the aqueduct and descriptions about working conditions, there is the following statement about what the commemoration of the Brooks aqueduct site might mean to its contemporaries:

Well now
they went'n
declared it
an historic site
soon
the public will
get to go out there
we'll all
be told
how it once
worked

Visitors are not lectured about public programming, though the exhibit makes many subtle statements about the nature and purpose of public programs. Visitors are invited to ask critical questions about how historical memory is transmitted, and how authoritative interpretations of folklore are reinforced through popular appeals to the public imagination.

The unorthodox style of presentation reinforces the intention to construct a general, impressionistic, emotive history of the site. In Alberta, the aqueduct and its sister projects were justified by "boosterism, and agricultural 'progress'." Brooks shows how this experiment failed after monumental human effort, at the expense of the workers who built it and the farmers whose livelihood it was supposed to sustain. The poetry and narrative text effectively describe the emotions that the site evoked for workers, their families, and descendants. It is also used to scrutinize the motives and wisdom of large-scale, subsidized economic projects.

The CPR, we are told in one poem:

got lots
for buildin'
the railway
an' this here land
was preat' near useless
So in this part
of the country
They took a big shit kickin' first
tryin' make the land bountiful
But they got
smart
and eventually
got most of it back
by soakin'
the farmer

Notes in the visitors' book indicate that this populist tone was welcomed by the audience. "Working-class, made my day," wrote one observer. Unlike some populist narratives, however, Brooks correctly links these past projects to larger political and economic forces, and with the same progress-oriented dreams motivating present-day projects.

On the last panel, a long poem describes the legacy of the aqueduct as the offspring of "pirates and raiders – crazy with greed and fear" who:

wanna redraw maps
move the last fresh reservoirs
of water
for the opulent artificial
California gardens
huge schemes
diversions
for ornamental deserts
Hollywood
feeding these colossal shallow false-fronted
man made
failures

And here this aqueduct
this skeleton of a dream

Fig. 2
Composite collages of archival and contemporary images are used throughout the exhibit. (Courtesy Peter Tittenberger)

The exhibit successfully reconsiders "metanarratives of progress that dominate nation-building narratives" by describing the negative impact that progress has had on human history and our natural environment.

Brooks: Coming Home also encourages us to think in personal terms about our relationship with the past. The text often surfaces from Hildebrandt's own personal engagement with

the past, as much as from his experience in writing technical-academic history for the Canadian Parks Service. His autobiographical reflections, observations and recollections reveal sensitivity to such issues as gender, race, and historical process:

'N
my mother
with me in her
belly
washed floors
for ladies
in town
living on the edge
in a shack
ice two inches thick
grows on the walls
in winter

With poems like these Hildebrandt creates a poetic response to a material environment that is loaded with the potential for observation and interpretation.

I agree with the majority of visitors who thought that *Brooks: Coming Home* was an interesting and refreshing work, and I hope additional resources can be found to convert it to a travelling exhibit. If this happens there will be an opportunity to fix minor weaknesses.

The first of these is that the size of the text was too small (about Times Roman 12 pt), and because it was mounted approximately five feet above the floor, the copy could not be read by anyone unless they were standing very close. Other similar technical points, such as the quality of wall mounts, could also be addressed. Secondly, though the exhibit relies on the voices and recollections of observers, the identity of the observer is usually obscure. There are no footnotes and, with a few exceptions, the speakers are unidentified on the panels or the curatorial statements that were available. While it might be said that this is a way of challenging popular conceptions of authority and authenticity of official history (as expressed in footnotes), identifying the speakers would have enhanced the emotional and poetic responses to the site.

The prevailing economic climate is forcing all cultural institutions to work with smaller budgets and attract wider audiences to justify their cultural value, and, ultimately, their economic viability. Put crudely, public history is under severe pressures to pay its own way. In past decades, public history displays have been modified, revised, and re-presented to address the needs of contemporary audiences. The public has been offered many different opportunities to take part in the discovery, interpretation, and remaking of its heritage. Multimedia, gala events, and living history have helped to excite the public imagination, thus helping museums and other cultural institutions to appeal to wider audiences.

But at what point do innovative programming and entertainment reduce content to trivial curiosity? Will future programming help or hinder the communication of history to wider audiences? Can history be displayed in ways that are critical and entertaining, and still play a role for educating the public about the past in ways that are relevant to everyday life? *Brooks: Coming Home* shows that a thoughtful, relevant, and provocative inquiry into the meaning of an artifact in past and present society can be accomplished by experimenting with the form and content of presentation.

Curatorial Statement

Walter Hildebrandt

The Brooks Aqueduct was begun in 1908 to bring water from the Lake Newell reservoir across a dried-up river bed two miles wide. The aqueduct was 60 feet high in places and brought water to an area of southwestern Alberta that was little more than a desert. It remained operational for 65 years.

Brooks: Coming Home combines visual and written languages assembled to begin a dialogue between past and present, form and content, as well as vernacular and more formal language. Both artists examine the visual and written narratives that dominate the historical record, not simply or even primarily to discredit the

evidence, but instead to draw attention to what can happen when dominant narratives are "rubbed against the grain." Historical and photographic documentation is presented in a fragmented, tinted and altered form, then juxtaposed in unorthodox sequence to unsettle and even jar the reader/viewer to reconsider both form and content.

The Brooks Aqueduct was considered a major engineering feat in its day, but in the later decades of the twentieth century, mega-projects like the aqueduct have been questioned; critics no longer focus only on the positive results of these mega-projects but have analysed the consequences of these major alterations of nature. Enthusiasts for these large feats of engineering have been unable to foresee the ways in which their experiments would end in human, technological and environmental failure.

The meta-narratives of 'progress' that dominate nation-building narratives are reconsidered here balanced off against the voices of those who constructed and lived in the communities around the aqueduct. Both artists are interested in considering a multiplicity of perspectives on what the aqueduct has meant for a wide variety of people – from those who went to the aqueduct to cool off in the trickle from the overflow, to present day historians who may never have seen the aqueduct when it was operational. Today, historians and artists are less likely to believe that history can actually be reconstructed 'the way it really was' and are more willing to be open about their sympathies. Indeed it is the poetic response of the artists here that helps keep the past alive and important to our culture – renewing it by reconsidering it. There may even be important political reasons for Canadians to keep alive a history that could well hold lessons for the future as countries begin to cast covetous eyes on the once-thought-to-be endless supply of water.

Musée McCord d'histoire canadienne
Le McCord est mort ! Vive le McCord ! La renaissance d'un musée

ÉLISE DUBUC

Le Musée McCord d'histoire canadienne : fondé en 1921, réaménagé entièrement et rouvert en 1992. Adresse : 690, rue Sherbrooke ouest, Montréal (Québec), Canada H3A 1E9. Téléphone : (514) 398-7100.

La belle au bois dormant

Comme dans l'histoire de la belle au bois dormant, le nouveau Musée McCord s'éveille à peine d'un profond sommeil, tout juste prêt à temps pour le grand bal du 350e anniversaire de la Ville de Montréal (1992). Deux ans de léthargie lui ont été nécessaires, pendant lesquels il s'est retiré dans des entrepôts afin de permettre le réaménagement de l'édifice qu'il occupe au coin des rues Sherbrooke et Victoria. Cette léthargie n'était qu'apparente car il était question du réaménagement complet des locaux du Musée et surtout du dédoublement de sa surface par l'adjonction d'un second édifice. À cet effet, un don fabuleux a été offert au Musée en 1988 par un généreux mécène, la Fondation de la famille J. W. McConnell. Les baisers des princes de ce monde ont de tout temps été d'espèces bien sonnantes; il s'agissait ici de 25 millions de dollars. Cet événement dans la vie du Musée allait être d'autant plus marquant qu'il annonçait la fin de la direction de l'Université McGill et une nouvelle vie autonome en tant que musée privé pour le McCord.

Fondé en 1919, alors que David Ross McCord donne à l'Université McGill une collection appréciable de près de 20 000 objets, le « McCord National Museum » est inauguré en 1921. D'abord installé à l'angle des rues McTavish et Sherbrooke, dans l'ancienne maison de Jesse Joseph, il est transféré en 1968 dans les locaux de l'association étudiante de l'université, son emplacement actuel. Souvent effacé de la vie montréalaise – pensons à cette éclipse de 35 ans où ses collections ne sont accessibles qu'aux chercheurs – le Musée ouvre de façon définitive ses

portes au public en 1971. Sa collection actuelle contient environ 80 000 objets auxquels s'ajoutent 700 000 photographies.[1]

Depuis sa réouverture, comme la belle encore sous l'effet du baiser du prince charmant, le Musée brûle de tous ses feux. L'exposition inaugurale consacrée à la construction du pont Victoria, photographiée par les studios Notman, permettait de mesurer à sa juste valeur l'importante collection photographique du Musée.

Le Musée réinventé

Si, de l'extérieur, rien ne semble avoir changé, l'annexe du Musée se fondant à l'ensemble architectural, il n'en est pas de même pour l'intérieur, qui a subi des transformations considérables. À l'entrée, le grand escalier et le totem qui caractérisaient le McCord ont été remplacés par des ascenseurs. Les collections sont réparties entre les diverses galeries. Au rez-de-chaussée, au centre du bâtiment, se trouvent une salle consacrée aux Premières Nations du Canada et, attenante, la galerie des œuvres sur papier. À l'étage sont situées des galeries réservées aux expositions temporaires, une salle sur le Québec au tournant du XX^e^ siècle et un grand espace permettant l'exposition des archives du Musée, de la collection des costumes et textiles, et des collections des arts décoratifs et beaux-arts. Telle une réédition qui offre l'occasion de redécouvrir des musiques oubliées, le renouvellement de la présentation des collections du McCord nous incite à regarder différemment les objets.

Luke Rombout, alors directeur du Musée, qualifiait en 1991 son établissement de relativement petit, où il était souvent plus facile de faire preuve d'imagination que dans les grands musées.[2] À l'instar du Musée du Séminaire de Québec, le McCord ne s'en trouvait pas moins dans la situation inconfortable des musées de taille moyenne. Il n'était ni un musée d'État ni un musée régional. De musée ayant perdu son affiliation avec l'Université McGill lui reste une caractéristique bien spécifique, celle d'être un musée créé par un collectionneur-fondateur. Ce type de musée commande une analyse particulière et force le regard tant sur l'institution que sur l'individu. À la fois pour éviter un survol trop rapide et pour souligner l'intérêt de cette particularité, l'essentiel de notre commentaire portera sur les salles situées au début du parcours du Musée, où l'on apprend à connaître le collectionneur-fondateur à travers ses objets.

Organisée selon un schéma thématique, l'exposition présente tout d'abord McCord et la vision si particulière et si intense qu'il avait de son musée. Après cette entrée en matière, nous perdons quelque peu la trace du collectionneur-fondateur parmi les îlots d'objets regroupés de manière à illustrer les activités de sa famille et le contexte dans lequel évoluait l'élite montréalaise de la fin du XIX^e^ siècle. La lecture du catalogue consacré à McCord et sa famille permet souvent de comprendre l'ensemble du propos.[3] Dans un long couloir se font face un ensemble d'objets collectionnés par McCord, entre lesquels il ne semble y avoir aucun lien si ce n'est celui d'avoir fait partie de la collection initiale, et de grands panneaux didactiques présentant les hommes de la famille McCord à l'aide de supports iconographiques et de repères chronologiques. David Ross McCord apparaît bien sûr comme le digne représentant de cette lignée prospère, mais aussi comme son aboutissement. N'apparaissent pas les individus qui ont perpétué son œuvre. Au sortir de ce long couloir, un dernier groupe d'objets termine l'exposition. Réunis sous le thème du conflit, ces objets relatent les événements – guerres, rébellions, tentatives d'envahissement, changements de pouvoirs coloniaux – qu'a connus le pays.

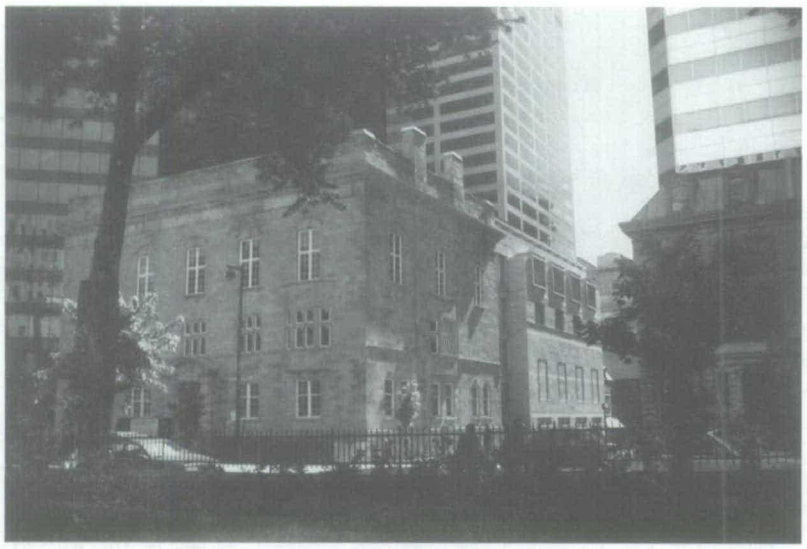


Fig. 1
Le nouveau Musée McCord d'histoire canadienne, août 1991. (Photographie de Louis Bellefleur, Musée McCord d'histoire canadienne, P-EDI-8)

L'homme qui a donné son nom à un musée

David Ross McCord (1844-1930) commence sa vie publique en 1868 alors que, diplômé de l'Université McGill, il pratique le droit. Très actif au niveau municipal, il est échevin du quartier centre de Montréal et président de la Commission de la santé de la Ville en 1870. En

1878, il épouse Letitia Caroline Chambers (vers 1841-1928), alors infirmière en chef du Montreal Civic Smallpox Hospital. Dans les années 1880, il délaisse de plus en plus sa pratique d'avocat et sa réforme municipale de la santé pour se consacrer à sa collection. Celle-ci se caractérise par des objets relatant les faits marquants de l'histoire du Canada, depuis la Nouvelle-France jusqu'à l'Empire britannique. McCord s'intéresse aux thèmes de l'exploration et de la traite des fourrures et démontre un intérêt marqué pour les Premières Nations du pays. Il collectionne activement des objets par l'entremise d'un réseau de collectionneurs, de revendeurs, mais aussi par des contacts assidus qu'il entretient avec des chefs autochtones. Outre les objets amérindiens, McCord collectionne tout ce qui a rapport à la guerre. Ainsi, David Ross McCord « amasse une merveilleuse collection d'objets énigmatiques, pertinents, étranges, ordinaires, mais ayant toujours une valeur historique ... »[4]

Notre collectionneur est d'une passion dévorante. À la fin de sa vie, il n'arrive plus à s'occuper convenablement de ses possessions. Ses écrits que relate le catalogue sont éloquents et l'on comprend que sa passion l'aura sans doute brûlé :

> *... il se rendit compte qu'il avait presque tout sacrifié pour son musée. Il s'inquiétait de ne toucher aucun revenu de loyer, de ne pouvoir payer ses taxes et de laisser sa femme seule à Temple Grove* [la maison familiale] *sans argent pour acheter du charbon pour l'hiver.*[5]

D'une nature certes peu commune à cette époque charnière de la fin du XIX^e^ et du début de XX^e^ siècle, l'épopée de McCord n'est pourtant pas unique. Plus posé, mais tout aussi enthousiaste, John Clarence Webster (1863-1950) monte lui aussi une imposante collection d'objets historiques et ethnographiques qui formeront l'un des fonds importants du Musée du Nouveau-Brunswick naissant. Les actions de McCord et de Webster offrent beaucoup de ressemblances. Les thèmes regroupant les objets qu'ils collectionnent sont presque les mêmes. L'expérience des deux hommes, au delà de leur singularité, nous dévoile un peu de la trame de l'époque.

Au nouveau McCord, l'exposition nous présente le contexte dans lequel est née la collection. À travers les objets du patrimoine des McCord, en complémentarité avec de nombreux panneaux didactiques et documents d'archives, nous parcourons les chemins suivis par les membres de la famille depuis leur arrivée au pays vers 1759 comme marchands, fournisseurs de l'armée britannique, jusqu'à leurs activités de riches propriétaires fonciers de la région montréalaise.

Fig. 2
Intérieur de « Temple Grove », la maison McCord sur le chemin de la Côte-des-neiges à Montréal. (Photographie de William Notman, Archives photographiques Notman, Musée McCord d'histoire canadienne, MP 2135[4])

Le patrimoine, tant scientifique et artistique que mobilier, de la famille est le cœur de la collection à laquelle se sont greffées les autres collections. Réfléchi par les objets comme à travers les éclats épars d'un miroir brisé, le portrait de famille ne peut que rester flou. La polysémie des objets égare les visiteurs sur les chemins de leur propre mémoire. L'image se précise dans l'entourage immédiat de David Ross McCord. Plusieurs objets ayant appartenu à son père, comme lui avocat de profession, ont été conservés. Ces objets qui nous révèlent la vie de John Samuel McCord (1801-1865) nous permettent de suivre les influences dans lesquelles baignait le jeune David Ross. Des objets maçonniques rappellent une longue tradition chez les McCord et leur présence dans la loge montréalaise. Une épée ayant appartenu à John Samuel commémore quant à elle les activités de milice. Lieutenant-colonel de la Royal Cavalry de Montréal en 1837, celui-ci joue un rôle important dans la répression du soulèvement des patriotes en 1837-1838. En plus de ses activités professionnelles et paramilitaires, on dit de John Samuel qu'il est un scientifique amateur enthousiaste, spécialisé en météorologie. Des instruments scientifiques et des cahiers de notes manuscrites en témoignent. John Samuel participe active-

Fig. 3
Exposition de la collection de David Ross McCord dans le nouveau McCord. (Musée McCord d'histoire canadienne)

ment à la vie culturelle de Montréal. En 1860, il est élu membre du premier conseil de l'Art Association of Montreal, société qui deviendra plus tard le Musée des beaux-arts de Montréal. Anne Ross (1807-1870), la mère de David Ross, est portée vers les sciences, comme son mari. Elle était une excellente aquarelliste et plusieurs de ses œuvres font partie de la collection.

Présentés comme une explication a posteriori, pointe d'iceberg d'un discours que l'on comprend à la lecture du catalogue, les objets qui entourent David Ross McCord illustrent sans pourtant expliquer.

Un cabinet de curiosités dans un temple grec typiquement victorien

> *... Ah, Nicolaï Alexeïevitch, que le Seigneur te juge! Dans quelles ténèbres nous as-tu entraînés! Je me fais l'effet de vivre dans un cabinet de curiosités; je regarde et je ne comprends rien ... Un vrai supplice ...*
>
> Anton Tchekhov, *Ivanov*, 1887

John Samuel McCord fait construire Temple Grove (1836), à l'aspect d'un temple grec reflétant ses goûts classiques, sur un domaine de huit arpents sur les flancs du Mont Royal, à la croisée du chemin de la Côte-des-neiges et du chemin Cedar. Lorsqu'il en devient le maître, David Ross transforme la demeure familiale majestueuse. L'accumulation toujours croissante des objets en fera rapidement ce que McCord appelle son musée. En 1919, son papier à lettres a pour en-tête « The McCord Museum; Temple Grove, Montreal; David Ross McCord, K.C., M.A., B.C.L., Founder and Hon. Director ». David Ross n'épargne rien, pas même le jardin si renommé de son père, qu'il transforme en une réplique des plaines d'Abraham. Le nouveau McCord présente le patrimoine des McCord à la manière d'un cabinet de curiosités, version 1992, évoquant celui-là même de McCord à Temple Grove, comme nous le montre la photo de Notman (vers 1920). Les nouvelles salles des Amériques au Musée de l'Homme à Paris, réaménagées pour leur réouverture en octobre 1992, et commémorant le 500e anniversaire de la « découverte » de l'Amérique par Christophe Colomb, ouvrent elles aussi leur parcours par la reconstruction d'un cabinet de curiosités. Quoique les cabinets de curiosités soient nés à la Renaissance, il semble qu'ils soient devenus un détour obligé maintenant que tous ont assimilé leurs leçons d'historiographie des musées.

La spécificité du McCord est de nous présenter le cabinet de curiosités du collectionneur-fondateur du Musée, alors qu'au Trocadéro, il est question d'un cabinet de curiosité anonyme. Mais il est intéressant de noter une inversion étonnante. Le Musée McCord actuel montre une reconstitution symbolique et désincarnée du cabinet de David Ross McCord, alors qu'à Paris on voit une reconstitution « fidèle » d'un cabinet imaginaire représentant la synthèse du cabinet d'un grand nombre de collectionneurs et de chercheurs.

Les photographies présentées (fig. 2 et 3) nous offrent une occasion sans pareille de comparer, à 74 ans d'intervalle, le fouillis des pièces de la maison d'un collectionneur du début du siècle et, à la toute fin du siècle, sa collection exposée dans le musée qu'il a fondé. À la chaleur et au désordre se dégageant de ces objets, tous liés entre eux par leur histoire et leurs liens familiaux – les aquarelles de la mère au mur, les porcelaines de la grand-mère, les meubles du beau-père ou ceux commandés à l'ébéniste de l'heure – s'oppose le détachement des ans et de l'analyse muséologique.

Le buste que l'on aperçoit à gauche de la photo de Notman, entouré d'une multitude d'objets dont, au mur, plusieurs aquarelles de la mère de David Ross, se retrouve dans le nouveau musée. Le visage représenté ressemble à s'y méprendre à celui de William Notman. Stanley Triggs, ancien directeur des Archives

photographiques Notman, a effectué une analyse morphologique du buste. Il était presque convaincu que c'était celui du célèbre photographe, vêtu du costume des raquetteurs, jusqu'à ce que, tout récemment, Pamela Miller, conservatrice et archiviste du McCord, trouve une référence dans les papiers McCord. En 1882, la femme de McCord, Letitia, aurait commandé du sculpteur Frans Van Luppen un buste représentant un habitant, Lamirande Cousineau, fermier de Saint-Laurent.[6] La quasi certitude de Triggs était basée sur la ressemblance frappante de la sculpture avec les photographies de Notman, la coupe de sa barbe si caractéristique et le fait que le même sculpteur, Van Luppen, avait exécuté une autre sculpture, bien identifiée cette fois, de Charles, l'un des fils de William Notman, aussi en costume de raquetteur.[7]

Dans la section ayant pour thème le conflit, on retrouve dans le McCord actuel le même buste que sur la photo de Notman (voir la photo du McCord actuel, fig. 3).[8] Dans l'exposition, disposés sur une estrade, divers objets représentant chacun un épisode conflictuel du pays sont disposés symétriquement. Opposé au buste en question se trouve un autre buste, entre les deux, une carabine. Voici leur description telle qu'on peut la lire sur les cartels du Musée, de droite à gauche :

1° *Buste de l'habitant Lamirande Cousineau, fermier, Côte Saint-Laurent; 1882, artiste Frans Van Luppen, marbre; n° M992X.2.5.*
2° *Carabine à platine à silex de Baker; début XIX^e siècle; bois, fer, laiton; utilisée par le docteur Wolfred Nelson lors des soulèvements de 1837-1838.*
3° *Buste de George III, vers 1763; marbre. Durant l'occupation de Montréal par les Américains en 1775-1776, le buste fut détruit et la tête jetée dans un puits. N° M15885.*

On remarque sur la photo que la carabine n'est pas orientée vers le plafond, comme c'est souvent le cas dans un tel type d'exposition. Pourtant en retrait, elle semble être pointée en direction du buste Cousineau/Notman lorsqu'on fait face à l'estrade. J'ai abordé plus haut les problèmes que posent l'identification du buste. La carabine Baker pose quant à elle autant de questions. Les carabines Baker de l'armée britannique ont été utilisées par les Montreal Riffle Corps à Saint-Eustache, pendant les événements de 1837-1838. Quoique ce soit toujours possible, il est étonnant d'en voir un exemplaire en la possession du docteur Nelson, vainqueur du côté des patriotes à Saint-Denis. McCord l'a-t-il attribué à Nelson par excès d'enthousiasme ou avait-il des preuves irréfutables de l'appartenance de cette arme? Il est difficile d'en être sûr. Dans le mélange des attributions inhérent aux objets de collection, au carrefour d'un croisement d'acteurs et d'événements tragiques, cet élément d'exposition révèle en soi toutes les contradictions possibles. J'ai mentionné au Musée l'image pour le moins saisissante que cet élément, tel qu'on le retrouve actuellement, produit sur les visiteurs, du moins au niveau des images et des symboles. On m'a mentionné que des aménagements seraient probablement faits pour modifier cette situation malheureuse. Des changements avaient déjà eu lieu car, dans la disposition initialement prévue, on s'était rendu compte que c'était le portrait de Louis Riel qui était alors visé.[9] Cette anecdote rappelle que l'exposition des objets n'est pas « insignifiante », dans ce sens qu'elle n'est pas « neutre ». Même dans un musée, les objets gardent leur force, leur potentiel fonctionnel autant que symbolique. Comme l'explique si bien Susan Pearce, les objets sont des signes, ils sont des symboles.[10] Dans ce jeu, les armes sont d'une nature toute particulière. Même désamorcées, même fausses, même reproduites, elles gardent leur pouvoir offensant, leur pouvoir d'interpellation, lorsqu'elles sont pointées. Tous ceux et celles qui ont joué au jeu de la bouteille dans leur jeunesse le savent bien. Il sera intéressant de voir maintenant qui, des acteurs de cet élément d'exposition, sera désigné. Restent en jeu la tête de George III, la coiffure iroquoienne que McCord pensait être celle du chef Shawnee Tecumseh, un casque colonial de la guerre des Boers et encore quelques autres... Et évidemment, comme nous sommes dans un musée, reste toujours en jeu la tête des visiteurs.

La mission divine d'un collectionneur : fonder son musée national et transmettre un héritage

David Ross McCord a commencé à collectionner intensivement en 1880, avec l'intention déclarée de fonder un musée national. Les nombreuses lettres dont le catalogue fait état éclairent un peu la situation, mais les activités de McCord reliées à sa collection restent dans l'ombre. Le catalogue mentionne les recherches que McCord avait entreprises sur l'origine des objets qu'il acquérait et sur les matériaux dont ils étaient formés, mais les résultats de ces recherches ne nous sont pas présentés. Le quoti-

dien du collectionneur reste malheureusement inaccessible. La « vision » de McCord nous est par contre très largement exposée. Les analystes qui ont participé à la rédaction du catalogue insistent sur la volonté affichée du collectionneur de ne pas faire un musée « anglais » et suggèrent d'analyser l'action de McCord à la lumière de son désir de fonder un musée qui contribuerait à promouvoir l'identité nationale canadienne. Dans cette optique, il faut comprendre les objets de sa collection comme les illustrations d'un message, l'objet étant utilisé comme outil éducatif, un peu à la manière « pédagogique » des jésuites qui prêchaient par l'enseignement et dont la preuve était appuyée par la démonstration d'objets concrets. Toutefois, il ne faudrait pas perdre de vue que David Ross McCord est devenu obnubilé par sa collection, qu'il est entré dans la logique impitoyable des collectionneurs.

> *À bien des égards, McCord correspond au type même du collectionneur victorien, obsédé par les objets – par leur authenticité, par leur signification – et toujours en quête de nouvelles acquisitions.*[11]

Dans son journal, McCord transcrit des vers de Wordsworth qu'il suggère d'apposer au mur de son musée : « Ce que nous avons aimé, D'autres l'aimeront aussi, et nous leur enseignerons comment. » Le nouveau Musée McCord exauce le souhait de son fondateur. Cette phrase apparaît dans la première salle du Musée, en superposition sur une immense carte du Canada. Tous les objets collectionnés par McCord, toutes ses actions semblent dictés par sa vision. Par contre, là où le catalogue est si clair, questionnant les attributions de McCord, l'exposition reste muette. Sur les cartels du Musée manquent souvent la distance et l'analyse nécessaires. Il serait donc plus judicieux de mettre un bémol sur certaines attributions de McCord qui péchait, le catalogue nous le rappelle souvent, par excès d'enthousiasme.

Le saut nécessaire, celui dicté par la distanciation de l'analyse rigoureuse, s'opère dans la salle consacrée aux Premières Nations. Moira McCaffrey, la conservatrice d'ethnologie au Musée et l'une des auteurs du catalogue, reste critique. Le nouveau McCord présente une salle très vivante mettant en valeur les objets de la collection de McCord ainsi que toutes les acquisitions ultérieures du Musée. À l'aide de présentations vidéographiques, le Musée veut sensibiliser le public à la diversité culturelle et démontrer la vivacité des groupes autochtones actuels. Dans cette optique, le Musée développe une collaboration fructueuse avec les groupes autochtones par divers moyens : une accessibilité accrue des objets pour les groupes dont ils sont issus, des prêts, des expositions itinérantes et la participation de représentants des Premières Nations lors de la conception des expositions du Musée. Dans ce cas-ci, le catalogue module l'exposition en nous introduisant aux conceptions et aux attitudes de McCord alors qu'il formait sa collection. Selon l'ethnologue Moira McCaffrey, McCord se singularise par une attitude où il démontre, à certains moments, une opposition aux attitudes ethnocentriques tout en gardant une vision idéaliste et passéïste, fidèle à son époque, préférant la vision « traditionnelle » et « pure » des Amérindiens, ceux d'avant le contact avec les Blancs. Ses goûts de collectionneur reflètent ses perceptions du monde. Persuadé que les Amérindiens allaient disparaître, les objets seraient pour McCord les seuls témoins à assez brève échéance. Pour McCaffrey,

> *... les objets collectionnés par McCord doivent être perçus comme le miroir des opinions et des motivations maintenant vieillottes d'un seul homme, mais offrant un aperçu remarquable de la vie et des valeurs autochtones.*[12]

Quant à elle, l'exposition sur le collectionneur-fondateur donne des pistes de recherche et permet un regard sur une époque méconnue et sur les hommes qui l'ont façonnée. Par contre, parce qu'elle cristallise son regard sur la période de création du Musée, elle ne permet pas une juste lecture du Musée actuel qui, lui, a beaucoup évolué depuis sa fondation. Partie des vingt mille objets donnés par McCord, la collection dans son ensemble en compte maintenant près de quatre-vingt mille, et cela, sans inclure l'impressionnante collection photographique et les archives du Musée. Certaines collections ont été consolidées, perpétuant ainsi l'œuvre du fondateur, mais certaines autres se sont ajoutées, diversifiant cette fois le champ d'action. Par exemple, la collection des costumes, qui fait la renommée du Musée actuel, n'était pas l'une des composantes de la collection initiale. Ainsi est passé sous silence le travail des employés du Musée qui, au fil des ans et de leur dévouement, ont façonné le Musée tel qu'on le connaît aujourd'hui.

« Comment vous donner des nouvelles ... ? »
Les matériaux utilisés dans l'aménagement du nouveau McCord rappellent l'ancien surnom du Musée, « the jewel box ». L'albâtre tamise la lumière, le bois naturel réchauffe l'atmosphère. Évitant les exagérations du monumentalisme, le nouveau McCord a le mérite d'exposer beaucoup plus d'objets qu'auparavant, alors qu'à peine 1 pour 100 des collections pouvait être vu. Le sphinx et le griffon[13] que l'on retrouve à l'entrée de l'exposition n'en sont qu'un exemple. Ils ont certainement accumulé toute la rancœur d'avoir chu de la corniche d'un bel immeuble de la rue Drummond, mais encore bien plus d'avoir été entreposés toutes ces dernières années dans les couloirs de l'administration, car les réserves débordantes de l'ancien Musée ne pouvaient les accueillir convenablement. Aujourd'hui, du haut d'un perchoir retrouvé, de chaque côté de la porte de la première salle d'exposition, si d'aucun visiteur ou visiteuse s'essayait à rebrousser chemin, ils les changeraient immédiatement en pierre, peut-être bien en sel. Ils semblent nous dire qu'il ne faut pas regarder en arrière.

Ce qu'il faut regretter pourtant, c'est le large escalier et surtout le grand mât totémique qu'il enserrait comme un écrin sans l'étouffer et qui frappait chacun des visiteurs du Musée d'alors.[14] Le grand totem est toujours là. Déplacé, il est aujourd'hui coincé dans le petit escalier du côté de la rue Victoria. Au soleil, presqu'à l'air et au vent comme sur son île, oublié de la reine Charlotte, le lourd totem ne repose plus sur rien. Citation de l'ancien McCord, il est aujourd'hui enchassé dans un nouveau discours. On lui a adjoint un grand panneau explicatif qui nomme les emblèmes représentés et qui nous explique que les spécialistes proposent trop d'interprétations contradictoires pour qu'il soit possible d'en dire quoi que ce soit!

La belle aux bois dormants
À l'examen des objets qui le composent, le Musée McCord est l'un des plus beaux musées du pays. Ses collections les plus réputées, principalement ses collections d'objets ethnographiques, ont été amassées alors qu'il était encore possible d'acquérir des objets d'une telle valeur sur le marché. Ce qui fait la valeur du Musée, ce sont bien sûr les collections, mais encore plus le fait qu'elles ont été amassées initialement par un seul individu. André Desvallées, conservateur en chef aux Musées Nationaux de France, affirmait en 1992, au Congrès de l'ICOM à Québec, qu'il n'y a aucune logique, aucun raisonnement, qui peut expliquer une politique d'acquisition de musée, d'une institution ou d'un groupe de personnes. La seule logique qui puisse exister, c'est celle d'un individu, un conservateur, faite de l'ensemble de ses connaissances, ses contradictions, ses intérêts, ses goûts, et ses passions. À ce titre, l'exposition sur David Ross McCord permet d'entrevoir cette « logique ». Mais la collection du McCord actuel, telle qu'on la connaît aujourd'hui, a été démultipliée. Un regard sur son développement aurait permis d'actualiser l'implantation du Musée dans la société d'aujourd'hui. Suivre l'évolution et les rapports qui liaient les institutions et la société montréalaise gravitant autour du Musée, et ce, jusqu'à aujourd'hui, aurait pu servir de lien. Les collections de photos, ayant acquis aujourd'hui une grande valeur documentaire et relatant le développement d'une technologie tout autant que le goût d'une époque, de même que les collections de costumes constituées par la suite montrent cette action continue et la symbiose qui existait entre le Musée et son milieu. La collection du Musée McCord, la belle, la très belle, offre aujourd'hui aux visiteurs la jouissance des plus beaux objets du patrimoine ethnographique et historique du pays. C'était le vœu de McCord. Outre son programme pédagogique, il voulait assurer un lieu de repos pour les objets qu'il a tant chéris. Les objets, comme des bois dormants, s'offrent autant à la représentation, au témoignage, qu'à la délectation. Ainsi, les bois dorment dans ce musée. Si aujourd'hui ils sont importants pour nous, si l'on désire les conserver, il faut aussi leur permettre de rêver et de nous raconter leurs rêves et leurs secrets, et au Musée actuel de trouver les liens qui permettront à un groupe toujours plus diversifié de visiteurs d'avoir accès à ces rêves et ces secrets.[15]

Notes

1. Les renseignements sur les lieux du McCord et ses différents états proviennent de Jacques Langevin, « Le Musée McCord », *Muséo-vision* (vol. 1, n° 2, avril 1977), p. 1-4; Luc Rombout « Le Musée McCord, une nouvelle page d'histoire », *Musée* (vol. 13, n° 4, 1991), p. 32-35; Marcel Caya,

« 20 $ millions au Musée McCord, une chance formidable », *Muséogramme* (février 1988); Ian McCulloch, « The McCord Renewed », *The Beaver* (June/July 1992), p. 62; Paul Carle et Alain Mongeau, « La difficile naissance d'une muséologie scientifique moderne : le cas de l'Université McGill et du Musée Redpath pendant la première moitié du XX^e siècle », *Musée* (vol. 11, n° 1 et 2, 1988), p. 6-10; le catalogue du Musée, *La famille McCord, une vision passionnée* (Montréal, Musée McCord d'histoire canadienne, 1992) (texte bilingue, anglais, français); le dépliant actuel du Musée.

2. Luke Rombout, *op. cit.*
3. Édités par le Musée (Montréal, 1992) et distribués par McGill Queen's University Press : *The McCord Family: A Passionate Vision/La famille McCord, une vision passionnée.*
4. Wright, Donald, dans *La famille McCord, op. cit.*, p. 88.
5. Miller, Pamela, dans *La famille McCord, op. cit.*, p. 140.
6. Papiers de la famille McCord, dossier 5046.
7. Communication orale de Stanley Triggs, le 11 novembre 1993.
8. Je remercie Wanda Palma et Pamela Miller qui ont identifié pour moi les différentes composantes de l'élément d'exposition.
9. Communications orales de Pamela Miller, 11 et 13 novembre 1993.
10. Voir à ce sujet, entre autres, Susan M. Pearce, « Objects as Signs and Symbols », *Museums Journal* (vol 86, n° 3, December 1986), p. 131-135.
11. *La famille McCord, op. cit.* (M.M.), p. 102.
12. Moira McCaffrey, dans *La famille McCord, op. cit.*, p. 106. Voir aussi et surtout le catalogue du McCord sur ses collections ethnographiques : *Aux couleurs de la terre : héritage culturel des premières nations.*
13. Tous deux en grès rouge, sculptés par Henry Beaumont (1853-1900) en 1888, ils décoraient les frises de la maison Drummond, situées au 488, rue Sherbrooke ouest (architecte : Andrew Taylor).
14. Dans un article sur les objets haidas du McCord, George MacDonald se souvient : « One of the most striking and monumental of these is a house frontal pole from Masset, which is one of the few to have been taken out of that village on the northern Queen Charlotte Island. It now greets the visitor to the McCord Museum from its prominent place in the foyer ». « Masterworks of Haida Art, George Merver Dawson and the McCord Museum Collection », *Apollo* (May 1976), p. 434-437.

Cooper-Hewitt National Museum of Design, New York, *Mechanical Brides: Women and Machines from Home to Office*

ANNMARIE ADAMS

Cooper-Hewitt National Museum of Design, New York, *Mechanical Brides: Women and Machines from Home to Office*
Curator: Ellen Lupton
Designers: Ellen Lupton (graphic design); Constantine Boyn, Laurene Leon (installation design)
Itinerary: Cooper-Hewitt National Museum of Design, New York, 17 August 1993 to 2 January 1994; Pacific Design Center, Los Angeles, 23 March 1994 to 27 May 1994
Publication: Catalogue, *Mechanical Brides: Women and Machines from Home to Office*, 65 pp., illus., Princeton Architectural Press, 1993. Paper U.S. $19.95, ISBN 1-878271-97-0

When Louise and Andrew Carnegie constructed their 64-room mansion on upper Fifth Avenue in New York in 1898, household technology was a nearly invisible, yet essential, aspect of domestic architecture. Their six-storey villa's sophisticated system of boilers, pipes, pumps, and machinery was relegated to the basement; kitchen and laundry were clearly separated from the main living quarters; and the team of 19 servants employed to manage the Carnegies' state-of-the-art equipment gained access to the family's lavish rooms only through a labyrinthine system of service stairs and corridors, designed especially to maintain the servants' invisibility.

It is somewhat ironic, therefore, that a major exhibition on household and office technology

currently occupies five rooms of the former Carnegie mansion. Remodelled in the 1970s to accommodate the Cooper-Hewitt Museum (the Washington-based Smithsonian Institution's Museum of Design), the sombre interiors of the former home seem a curious backdrop for the 100 brightly coloured plastic and metal objects contained within *Mechanical Brides: Women and Machines from Home to Office*. The show's focus on *women*, too, is starkly juxtaposed against the quintessentially masculine, oak-panelled rooms, in which Carnegie no doubt hosted many of America's most powerful men earlier this century.

Mechanical Brides confronts head-on this male-centred, conservative world in which it is set. It also uses contemporary exhibition techniques in a subtle way to make instructive comparisons between the technology of Carnegie's era and that of the twentieth-century, middle-class home and office, the real subject of the exhibition. Perhaps the clearest example of this mechanical counterpoint is a large television and VCR, set boldly in a now-obsolete Carnegie fireplace. The hearth-cum-video is framed on each side by two shiny washing machines sitting on concrete bases (intended to suggest basement floors); the wall text accompanying the laundry equipment is printed on starched bed linen, suspended overhead from wooden dowels as if hung out to dry. Against the dark, deeply-sculpted panelling of the formerly aristocratic room, this scene is, to say the least, startling.

Mechanical Brides begins with an equally bold statement. A thick partition wall adorned with four wall-mounted, push-button telephones and 24 images of people on the telephone faces the entry to the exhibition sequence (Fig. 1). Intended to remind visitors of contemporary telephone booths and/or bus shelters by its bold graphics and use of back-lit images, this interactive wall invites visitors to use actual telephones to reconsider the place of telephones in modern culture. Surrounding images of historic telephones and media images of telephones suggest how this technology has acted as a link between the gendered spheres of home and work. Numerous jobs associated with women and centred on the use of the telephone in the twentieth century – secretary, receptionist, telephone operator – limited women's roles to passive receptors and communicators of information, rather than producers of information. Both the exhibition and the catalogue explain how women in these positions became human extensions of the technological systems they were expected to mediate.

The issue of gender and technology is brought into even sharper relief in the second room. In addition to the video in the fireplace (with an ordinary, three-seater couch in front), in which a variety of people discuss their personal views of laundry, and the display of eight vintage washing machines, this room also boasts three vitrines of historic irons. The walls are covered, like the first room, with advertisements and images from pop culture explaining the gender division of housework; race, class, and ethnicity in housekeeping as a business; and the concept of modernism in the home. Typical of the way the subject matter informs every level of the exhibition design, these images are matted in sheets of vinyl flooring and framed by sections of aluminum, typically used to finish the edge of kitchen counters.

This political approach to the subject of domestic technology is consistent with other projects by Ellen Lupton, the Cooper-Hewitt's first Curator of Contemporary Design, who devised *Mechanical Brides*. Lupton co-curated the controversial exhibition, *The Bathroom, the Kitchen, and the Aesthetics of Waste*, at the List Visual Arts Center, MIT, during the summer of 1992. Rather than focus on issues of gender, however, the MIT exhibition of mostly sinks, toilets, and toasters drew perceptive analogies between our cycles of economics, digestion, and plumbing.[1]

Fig. 1
The exhibition Mechanical Brides *opens with an interactive telephone wall. More than 50 telephones provide information to visitors about how the phone developed from a relatively neutral device to a seductively designed consumer object. (Photo: Bill Jacobson)*

The playfulness of domestic technology is celebrated in the third room of the exhibition, which features a collection of contemporary household machines inspired by the characters from *The Wizard of Oz* on a bright yellow display stand. Images on these walls also explore the romantic partnerships suggested by domestic technology; many of the advertisements aimed toward brides show explicit promises of marital happiness and even sexual satisfaction: a wedding ring is reflected in the shiny surface of a 1946 toaster; a woman paints a heart and arrow on her new dryer, surrounded by her smiling husband and children; another happy woman dances with her silicone-covered ironing board in an advertisement of 1956.

The weakest section of *Mechanical Brides* is the fourth space in the sequence, occupying the former conservatory of the Carnegie mansion and functioning as a hinge in the exhibition to turn visitors into the final room. Filled with plants and suggestive of an outdoor space, this greenhouse hosts a lawn mower and chain saw for the exhibition, suggestive of men's domestic technology. Lupton says the conservatory was intended as a very solemn place, where visitors could contemplate the laundry line bearing quotes about housework from a diversity of women. The display of objects, however, seems inconsistent with the other strongly thematic arrangements of material culture; given the general theme of the exhibition is the relationship of women and machines in the home and office, it seems incongruous (and smacks of tokenism) to include men and machines used outside the home. This section of the show is, in addition, a blatant reminder of the difficulties of designing exhibitions in a building conceived for a completely different purpose.

"Office Politics" is the focus of the final room in *Mechanical Brides*. The centrepiece here is a display of three secretarial work stations, each paired with an executive chair intended to simulate actual office environments. The furniture from the influential 1906 Larkin Building by Frank Lloyd Wright, for example, illustrates to visitors how the female clerks employed by this soap company occupied fixed chairs, while the male executives had chairs on wheels. Considered at the time as a modern, efficient office building, fixed seating was intended to increase the efficiency of clerks by limiting their mobility.

A built-in display case in this final room depicts the parallel relationship of typewriter design to women's subordinate positions in the world of work. Typing, like working on the telephone, was constructed as a kind of neutral communication of ideas generated by men.

Two examples of contemporary design also underline the complexity of gender in today's "Office Politics." Next to the typewriters is a wearable computer, designed by a woman. This tiny machine, with both an eyepiece and an earpiece, hangs like a necklace on the wearer's chest, delivering information directly to the retina. Next to the exit door of *Mechanical Brides* is a desk of the future (Fig. 2), commissioned by the museum for the exhibition. This conscientiously domestic prototype – it was intended to address the "live/work" space of the future – draws on the worlds of both home and work for

Fig. 2
The closing display of Mechanical Brides *is a workspace of the future, especially commissioned for the exhibition. It shows the anticipated blurring of home and work resulting from new technologies. (Photo: Bill Jacobson)*

ideas. The work station comprises a playpen and a combination of rotating filing cabinet and lazy susan, in addition to a horizontal work surface. Lupton says the piece was inspired by the powerful photo shown above the desk in the exhibition which appeared in the *New York Times*. It shows a frantic bank executive working at home in a chaotic setting with her infant, who is demanding attention and keeping her from her work.

Mechanical Brides is a powerful exhibition about women and machines, a much neglected subject in academic scholarship. Its real contribution in terms of an approach to the field is that the show considers technology in a setting far wider than the home. *Mechanical Brides*, by illustrating with real objects the close relations between home and work, has added to our increasing suspicion of the so-called "separate spheres" theory, which defines the home as a relatively isolated institution in urban life. This notion, which formed the basis for pioneering work in women's history in the 1960s and 1970s,

presumed the house as a place both antithetical to, and spatially separated from, the world of science, politics, and men.[2]

Mechanical Brides challenges this theory by drawing links between women/technology and office employment, architecture, and advertising, among other male-gendered domains. Lupton is interested, at every level of the exhibition, in how the public informs the private and vice versa. Drawing on the revolutionary work of Marshall McLuhan, she, too, appreciates industrial design as an aspect of mass media, rather than for its formal values, as is often the case in museums of design. The title of the exhibition is drawn from McLuhan's book of 1951, *The Mechanical Bride: Folklore of Industrial Man,* in which he compared advertisements showing parts of women's bodies to the interchangeable parts of machines. Presumably this title pays homage to McLuhan's brilliant analysis of the social and political values of mass media, as well as his early interest in the relationship of sex and machinery.

In an exhibition so broadly based, it is no surprise that every type of technology displayed is not as deeply researched as in a smaller show. By including so many different types of technology spanning the entire century – telephones, laundry, cooking, typewriters, office furniture – the exhibition addresses the real impact of technology on women's lives at a relatively superficial level. At the same time, however, the great range of objects displayed – 95 per cent are loan objects – no doubt made the subject much more appealing to the non-specialist. In this respect, the 65-page catalogue will be more useful than the exhibition itself for purposes of further scholarship and teaching.

In the final analysis, it would be difficult to find a more appropriate place than the former Carnegie mansion for *Mechanical Brides.* The Carnegies were, after all, obsessed with technology. Theirs was the first private home in the United States to have a structural steel frame, was one of the first to boast a passenger elevator, and was extremely progressive in its use of central heating and air conditioning. The Carnegie mansion even included duplicates of every major piece of equipment, in case of failure. Although its systems were hidden in the walls, the house was, in every sense, a showcase for turn-of-the-century technology. Its reincarnation as the museum setting for *Mechanical Brides* has "exposed" once-invisible systems of technology, as well as the systems of power which have dictated the relationship of women and machines for most of this century. The servants' ghosts, at least, must be smiling.

Notes

1. For more information on the MIT exhibition, see my "Waste Not, Want Not: An Exhibition Review," *The Winterthur Portfolio,* 27, no. 1 (Spring 1992): 75–82.
2. For a review of the literature on separate spheres, see Linda K. Kerber, "Separate Spheres, Female Worlds, Woman's Place: The Rhetoric of Women's History," *The Journal of American History* 75, no. 1 (June 1988): 9–39.

Royal British Columbia Museum, Victoria, *Chinatown*

Joan Seidl

Royal British Columbia Museum, Victoria, *Chinatown*
Curator: Virginia Careless, Bob Griffin (RBCM); David Chuenyan Lai (Guest Curator)
Designer: Alan Graves
Opening Date: November 1992

In November, 1992, the Royal British Columbia Museum (RBCM) in Victoria, British Columbia, opened *Chinatown,* a new addition to the sprawling re-creation of *Old Town* built in the Museum in the early 1970s. The original *Old Town* was designed to showcase the facades

Fig. 1
Interior of herbalist shop with fittings and artifacts from Man Yuck Tong, early herbalist in Victoria. Sewing machine and related items record the fact that he was also a tailor. (Courtesy RBCM)

Fig. 2
Exterior of herbalist's shop at left; at rear, signs for shoe repair shop and employment agency. (Courtesy RBCM)

of small shops and businesses with collections visible through plate-glass windows. When it messed with *Old Town*, the RBCM took on a classic in Canadian museology. Since it first opened, *Old Town* has spawned mini main streets across Canada, some sophisticated and elaborate, others more haphazard and strictly functional (a good way to show lots of stuff).

Chinatown is a small extension of the original street. The footprint of *Chinatown* is only 500 square feet, although the exhibit continues overhead in second-storey facades and balconies. Using the same basic *Old Town* vocabulary of facades, shop fronts and interiors, *Chinatown* features a herbalist/tailor's shop and an attached kitchen area, while across the street is a food shop. Signs, partial facades, and balconies permit glimpses of living quarters, a shoe repair shop/employment agency, clan association meeting place, gambling club, and restaurant.

Chinatown locates a complex, layered Chinese community literally next door to mainstream British Columbia. Visitors enter the cul-de-sac by turning off the main street of *Old Town* and ducking around a set of stairs. *Chinatown* gives an immediate, compelling impression of differentness. A subtle sound track of street noise, music and conversations in Chinese animates the space. In front, up and down and all around you is evidence of another time, another place, another culture. The effect is astonishingly complete. It is the result of the combination of meticulous research, long-term collecting, imaginative design and painstaking fabrication.

The RBCM relied on well-known historical geographer David Chuenyan Lai as guest curator. As the author of *Chinatowns: Towns within Cities in Canada*, Lai brought years of expertise in the subject as well as strong connections within Victoria's own Chinese Canadian community.[1] The fundamental decision about choices of occupations, choices of building designs, and layout of the streetscape were informed by Lai's body of work on Canadian Chinatowns generally, and Victoria's in particular.

Chinatown's most densely furnished exhibit is the shop of herbalist and tailor Quan Yuen Yen. The RBCM's decision to acquire the contents of the shop in 1982 laid the basis for the success of *Chinatown*. Long before the exhibit was a real plan, RBCM staff Bob Griffin and Virginia Careless identified the need to culturally diversify *Old Town*, and collected with that long-term goal in mind.

Designer Alan Graves used the tiny space with care and imagination. Mirrors amplify and extend narrow alleyways. The illusion of life-size scale is created through careful sight-line planning. The second-floor windows are more than decoration. Each one is a carefully utilized interpretive opportunity, giving glimpses of living quarters, an ancestral shrine, "cheater" storeys that evaded additional property taxes. The

power of the illusion appears to rest as well on the detailing of the fabrication. Even the glass in the shop windows is "old" glass, one of the many parts that add up to a convincing whole.

Chinatown's creators set out to convey to visitors a range of feelings, including "curiosity, unease, a sense of being 'not at home,' mystery, wonder."[2] The exhibit succeeds very well in creating an exotically other world. Possibly the otherness is too extreme, masking at least some of the connections that tied Chinatown and "Old Town" into a symbiotic relationship.

Some recent scholarship has emphasized the emergence and maintenance of Chinatowns as a response to the legislated racism of the state. Certainly, in the history of Vancouver's Chinatown, there is ample evidence of the heavy hand of municipal legislation affecting the nature, location and functioning of Chinese-owned businesses.[3] Reproductions of business licences and inspection certificates in RBCM's *Chinatown* would help to suggest the intrusion of the state and the complex cross-cultural relationships at work.

The curator chose to emphasize occupations that served the Chinese Canadian community – a herbalist, a grocer and a tailor of Chinese workmen's clothing. The choice underscores the notion of Chinatown as a self-contained and self-sufficient enclave, obscuring the crucial role of Chinese Canadians as workers in mainstream industries. The exterior of the employment agency, for instance, could be used more intensively to present a more complete picture of Chinese Canadian occupational structure (and to create links to the RBCM's other permanent exhibits on canneries and mining).

The exhibit's makers used the location of a western-style pharmacy in *Old Town* near the entrance to *Chinatown* as an occasion to introduce direct comparison of western and Chinese-style medicine in an interpretive case/window display. The mixing of exhibit methods – an interpretive case exhibit in the midst of a re-created environment – appears to enrich both.

One of the exhibition team's stated objectives was to help visitors "be confident that the exhibit is an accurate reflection of the past."[4] *Chinatown* is unique and ground-breaking in its content; the streetscape will be the image that will come to mind when future generations of British Columbians think of Chinatowns. However, no supplementary material introduces visitors to the basic interpretive issues or presents fundamental evidence for the RBCM's choices. The Museum is still asking visitors to take it on blind faith, to rely on the institutional reputation. Especially when a re-creation is as compelling and spatially and visually successful as this one, visitors deserve the opportunity to question its premises.

The greatest problem with *Chinatown* is that it makes the original *Old Town* appear slapdash, theatrical, and shopworn. Spaces that were reasonably convincing on their own terms appear by contrast generic and underfurnished. This is a wonderful problem to have: a great exhibit from 1974 is surpassed by a great exhibit from 1993. It is testimony to the fact that museums have improved their capacity for exhibit research, interpretation, and exhibit. It suggests that museums have far from exhausted the potential of that faithful standby – fragments of Main Street.

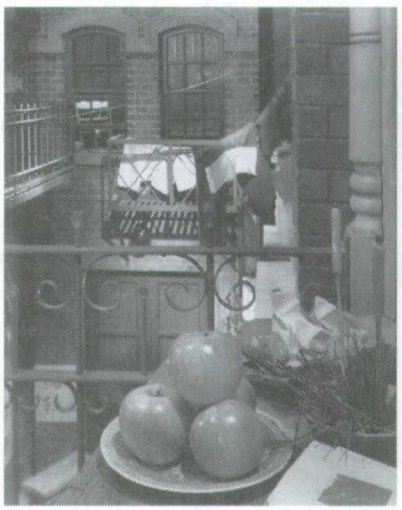


Fig. 4 ▲
Entrance to the "Chinatown" exhibit with orientation cases comparing western-style and Chinese medicine. (Courtesy RBCM)

Fig. 3 ▶
Upper level of the "Chinatown" exhibit showing shrine display on balcony of the Tung Heung Hui Association building. Glimpse of living quarters visible across the alley. (Courtesy RBCM)

Notes

1. David Chuenyan Lai, *Chinatowns: Towns within Cities in Canada* (Vancouver: UBC Press, 1988).
2. "Interpretive Objectives for the Chinatown Exhibit at the Royal British Columbia Museum" (unpublished manuscript, 1992), 2.
3. Kay J. Anderson, *Vancouver's Chinatown: Racial Discourse in Canada, 1875–1980* (Montreal: McGill-Queen's University Press, 1991).
4. "Interpretive Objectives," 3.

Curatorial Statement

DAVID CHUENYAN LAI

The Old Town Gallery in the Royal British Columbia Museum is basically an exhibit of the socio-economic contribution of early British immigrants to the province of British Columbia from 1890 to 1920. Although Chinese immigrants were and still are the largest visible ethnic minority in the province, and their imprints on its landscape are numerous and significant, their exhibit in the Old Town Gallery consisted of only two window display cases containing randomly selected Chinese artifacts.

In the autumn of 1990, the History Unit, headed by Robert Griffin, proposed to enhance the public awareness of the significant role of the Chinese in British Columbia by expanding the Chinese section of the Old Town Gallery. In the following two years, a team of curators, designers, conservators and interpreters, headed by John Robertson, organized the Chinese exhibit which would portray the townscape of a Chinatown in the late nineteeth century and early twentieth, and make it an extension of the Old Town Gallery. The team also planned to seek the participation of the local community in the project.

The Chinatown exhibit has three objectives:

(1) cognitive – to make visitors be aware of the townscape of an old Chinatown, and enhance their knowledge of the early Chinese society in Canada;

(2) affective – to make visitors experience the feelings of curiosity, mystery and "fear" in strolling through Chinatown at dusk which was perceived as a "Forbidden City" by the white public in the past;

(3) psychomotor – to entice visitors to wander from one display unit to another, look at objects outside the stores and peep at artifacts through windows.

The goals of the exhibit were attained. The Fannin Foundation, and the Victoria Chinatown Lions Club financially supported the exhibit, and some Chinese resource persons assisted in artifact identification, storyline authenticity, Chinese calligraphy, and other tasks. The exhibit, covering an area of about 500 square feet, consists of four wooden structures that display the common structural and decorative components of Chinatown buildings, such as projecting or recessed balconies, "cheater storeys" (low-ceiling mezzanines), and horizontal and vertical signboards bearing Chinese characters.

There are six display units. The first unit is a hook showcase which marks the entrance to *Chinatown*. Inside the showcase, Chinese herbs and Western medicine are displayed, and the two systems of medicine compared. A large information panel on Chinatown and the occasional meowing of a cat draw visitors' attention to the Chinatown exhibit.

The second unit is Kwong Hing Lung & Co., a grocery store, in which salted eggs, preserved ginger, and other Chinese merchandise are kept. A tenement is on the second floor, where clothing is hung on a string. The third unit is Ka Lee, a shoe repairer's store. An advertisement on the store front reveals that the shoe repairer is also an employment agent.

Opposite Ka Lee is the fourth display unit, which is a recessed balcony of See Yup Tung Heung Hui (The Four Counties Association). Worship of ancestors and heaven takes place in the balcony, where a plate of fruit and an incense container are placed on a table.

The fifth unit is Man Yuck Tong, a herbalist shop in which drawers of herbs, a crusher, a grinder, cutters, and other equipment are displayed. A sewing machine, buttons and clothing occupy half of the ground floor because the herbalist is also a tailor. Boxes of herbs are stored in the "cheater floor." Herbs are prepared in the kitchen, where the brick stove, herb choppers, scales and other equipment can be seen through the window.

The last display unit is a dim alley, closed off by a wooden gate through which Chinese signs of two gambling clubs (Tai Lee and Tung Lok), a rooming apartment (Hop Wo Fong), and a restaurant (Kwong Chow Lou) can be seen. A peephole on the wall is used to screen patrons.

While passing through the exhibit, visitors can smell Chinese herbs and incense, and hear the faint clucking of chickens, and people chatting in different Chinese dialects. Next to the alley is L.G. Cook, a western druggist's store, which functions as a link between the Chinatown exhibit and the Old Town Gallery.

The tangible, visible, audible and olfactory manifestations of Chinese cultural imprints in British Columbia are very apparent in the Chinatown exhibit. Visitors to the exhibit will know more about the lifestyle and economy of the Chinese community, the difference between Chinese herbs and Western medicine, and the symbiosis between Chinese culture and Western environment. It is hoped that visitors will also tour Victoria's Chinatown, Canada's earliest Chinatown, and compare it with the Museum's Chinatown exhibit. They will then appreciate more the physical and cultural heritage of an old Chinatown, and recognize it as a unique, historic component of an urban fabric in Canada.

Film Review

Compte rendu de film

Colin Neal, Bill Brind, *Notman's World* Barry Cowling, Rex Tasker, *Fixed in Time: A Victorian Album*

JOHN E. CARTER

Neal, Colin (executive producer) and Bill Brind (producer). *Notman's World.* Directed by Albert Kish. National Film Board of Canada, 1989. 28 min. 58 sec.

Barry Cowling, Rex Tasker (producers). *Fixed in Time: A Victorian Album.* Directed by Shelagh Mackenzie. National Film Board of Canada, 1980. 19 min. 45 sec.

Photography dances precipitously on the edge of a lie. Arguably it captures reality with little editorial intervention, but it does so with a psychological sleight of hand. Its ability to render reality perfectly in two dimensions causes us to forget that it is, in fact, only an abstraction of the reality it apes.

Unlike other graphic arts like painting, drawing, sculpture, and so on, conscious interpretation does not intrude on our visceral understanding of the picture. We accept the information contained in the image as de facto truth, which is, of course, not the case at all. A photograph is a carefully engineered manipulation of visual symbols, intentionally assembled by a photographer to evoke a desired response from an intended audience.

From an infinite number of possible combinations, the photographer selects a particular place, at a particular time, views it from a particular vantage, and, at a chosen moment, arrests that time and place within the frame of his photograph. I will speak to the consequences of the photographer's decision at some length later. For now I would like to consider the significance of the mere action taken when one performs such a biopsy on time and place and culture.

The photograph, this frozen memory, enters the world rich with symbols and values with which the photographer imbued it. As time passes, those symbols and values ferment and grow, merging with others until they ripen into full-blown icons. Those fortunate enough to survive, and particularly those that pass into public hands where they become accessible to scholarly scrutiny, possess the ability to define the epoch from which they came. They become the stuff of our collective memory.

This is certainly the case with the work of William Notman, whose immense collection (immense seems like a little word to describe a collection of over 400 000 images!) resides in the McCord Museum in Montreal. Notman had studios across Canada and in the United States, and employed a raft of photographers who, over the course of three quarters of a century, recorded the young, vigorous, Victorian life that was nineteenth-century Canada.

The Notman enterprise was the subject of two National Film Board of Canada productions, which serve as the grist for this essay. (I will examine a rather handsome book, *The World of William Notman,* in a companion to this essay scheduled for publication in a subsequent issue of the *Material History Review.*) The first of these films, *Notman's World,* examines the rise to prominence of Notman and his gaggle of studios. The second, entitled *Fixed in Time: A Victorian Album,* examines the work of Oliver Massie Hall, who was proprietor of the Notman studio in Halifax.

Before I proceed with my examination of these films, let me say something regarding my qualifications for this task. I bring what I

consider to be a refreshing innocence to the topic. My ignorance of Canadian history is appalling and my knowledge of Notman and his work has heretofore been the one-line mention found in Robert Taft's classic work, *Photography and the American Scene.*

As the babe-in-the-woods, I was struck by how the photographer was shaped by his world, and he, in turn, shaped the world around him. Both films explore that wonderful world between reality and its shadows, where appearance transcends substance.

The sense of destiny and the greater sense of being British ooze from the photographs, which is of course what they are about. In *Notman's World,* Montreal in the 1850s is described as populated with a "mean and hungry business class" that generated a great deal of money. This money attracted a merchant and professional class – doctors, lawyers, bankers, and the like – eager to share in the new wealth.

When Notman arrived in that city in 1856 he found a ready-made market for his photographic skills. There was no old money in the city. Montreal was a city of nouveau riche who had a very real need for photographs. First, portraiture was an important symbol of status that fed the rather drafty arrogance of those who were now attaining some level of prominence. The photograph was also a way of reporting to those back in England on your situation. As the film adroitly points out, this was of particular importance for the large number of citizens who had left the homeland in steerage.

Fixed in Time explores articulately the relationship between the photographer and the subject, deftly pointing out that the craft of photography was not so much the technical mastery of the camera, but rather being able to manipulate skilfully the symbols within the photograph to communicate the sense that the sitter wanted to portray: the placement of a book to suggest literacy, a powerful stare implying manliness, a graceful draping of the hands to enhance femininity. On this very basic level one begins to see the intricate array of transactions that take place between the photographer, his subject, and the greater culture from which both come.

It is here that I find myself in strong disagreement with a point made early on in *Notman's World.* An unidentified voice, at the beginning of the film, makes the unequivocal statement: "We can't make of these photographs more or less than they are. They are simply photographs." There are many things that these photographs may be, but simple they are not. Moreover, when viewed collectively they clearly become a great deal more than what they are, as I hope to demonstrate. It is fortunate that the film is blessed with an abundance of evidence to disprove its own point.

We are instructed that Canada was in the hands of expatriate Englishmen and Scots, who saw themselves and their various enterprises as part of an expanding destiny for the British Empire. This newly established upper class drew its ranks from three populations. The first were those who had acquired and developed land, of which Canada had an abundance. The second was a merchant class skilled in the manipulation of trade and commerce. The third was the military, particularly the officers' corps, which was made up of the second sons of the titled and social elite in England.

Also, Canada, the new part of the empire, was, like India, exotic in climate and geography. The idea of its wildness enhanced the self-image of the British citizen as conqueror.

This complex interaction of the sense of oneness with the Empire, the inevitability of progress, and uniqueness of the place, mix dizzyingly in the photographs. As I noted above, the photographs are more than likeness; they are an expression of a state of being, a condition of life.

Notman and his photographers were active and willing participants in the process of defining this vision of life and civilization. In 1858 Notman, then a young man, was hired by the railway to document the construction of the Victoria Bridge. At the dedication a year later, the photographer made a gift of the photographs, bound in leather and encased in a mahogany box with silver fittings, to the Prince of Wales, the event's guest of honour.

The photographs and their presentation so pleased the Prince's mother, Queen Victoria, that she bestowed upon Notman the title of "Photographer to the Queen." The aristocratic moniker made him the photographer of choice for his upwardly mobile clients, assuring him dominance of the portrait market.

In the 1860s, Montreal's population was swollen with British troops garrisoned there to keep an eye on the border while the United States engaged in the unpleasantness of the Civil War. The military has historically been a

hungry consumer of photographs. Soldiers are away from home, often in peril, admirably serving the needs of the homeland. For those who die in the line of duty, the photographs become a vehicle to cheat death by saving the likeness. For those who survive, the photographs bear witness to their time of noble service. For Notman, it meant an added demand for his camera.

Later, Notman launched a cadre of photographers to the far corners of Canada to collect "views," which he then sold to tourists and citizens alike. For the tourist, they were documents of their great adventure. For the citizen, they were evidence to send back to England to either show their new Victorian house, their civilized city, or, ironically, the wild beauty of the country around them.

The long and short of it was that Notman and his photographers captured that which was the essence of British success in the New World. In so doing, his collective work defines not so much the reality of that life, but rather the dream that drove it.

One segment of *Notman's World* clearly distinguishes the dream from the reality. Notman created a series of photographs dealing with the logging industry. In his photographs the lumbermen are portrayed as rugged men of the wilderness, doing battle with nature to reap its bounty for the good of the motherland.

What the photographs fail to show is that, far from being noble woodsmen, those who worked the forest were an exploited labouring class who were underpaid, known for a propensity toward strong drink, and sharply divided on ethnic and religious lines. The pictures of the large rafts of logs making their way downstream to be shipped to England fail to show the denuded countryside. In true imperial fashion, the mother country looted the natural riches of the colony.

Notman's photographs were also used by the railroad to craft a perception of Canada that would enhance its corporate profitability. In 1884, the Notman Studio was hired to photograph along the Canadian Pacific Railroad line. The objective was twofold. First, the photographs were to demonstrate the natural beauty and majesty of the wilderness as a draw for tourists. Second, the photographs were to announce the bounty to be found in the west, with an eye toward attracting settlers who would farm the area and thus provide a steady clientele for the railroad.

The photographs of the wilderness, of course, failed to reveal Mother Nature's wrathful side. Tourists were ignorant of the caprice of weather and the threat of accidents. Farmers were not told that nature did not yield her bounty willingly, and that hard labour was often as not rewarded with drought, fire, and insect infestation.

So there is an intrinsic lie in Notman's inventory. It documents not the reality but the dream, and both *Notman's World* and *Fixed in Time* share that sense with their audience.

Two annoying features of *Notman's World* tarnish its message. Notman's story is periodically interrupted with a recitation of the technological history of photography. These segments, edited out of this film and put into their own, would be a nice introduction to that interesting story. But their idiosyncratic placement throughout the film is aggravating.

Also, the film's narrative is regularly interrupted with unidentified voices making pronouncements about Notman, his work, and the Canada of his time. The net effect of these nameless authorities is roughly that of an article peppered with text set off in quotation marks but lacking a footnote identifying the author of the statement.

But *Notman's World* and *Fixed in Time* do a fine job of what film does best. They give a sense of the world in which Notman lived, how his craft fit within it, and how he came to visually define the emerging Canadian nation.

Book Reviews

Comptes rendus de livres

Les Cahiers de La fonderie

LOUISE TROTTIER

Les Cahiers de La fonderie : revue d'histoire sociale et industrielle de la région bruxelloise. N° 14 (juin 1993). Bruxelles : ASBL La fonderie, 1986 –. #ISSN 0775-2202

Publiés depuis août 1986 à raison de deux numéros l'an environ, *Les Cahiers de La fonderie* constituent le porte-parole d'un regroupement d'organismes communautaires et de chercheurs universitaires de la région de Bruxelles, dont le but est de préserver la mémoire collective des milieux défavorisés. Rédigés dans une perspective tant historique que contemporaine et fondés sur des enquêtes orales, monographies et documents iconographiques, les articles exposent des préoccupations socio-économiques ou pertinentes au patrimoine industriel de la collectivité immédiate.

Ainsi, la plus récente parution des *Cahiers,* consacrée aux ouvriers, retient l'attention justement parce qu'elle tente de faire le point sur les nuances qui caractérisent les activités de ce groupe social dans le contexte actuel, celui de la fin d'un siècle marqué par la désindustrialisation. De fait, la force ouvrière ne peut plus être encastrée dans une seule entité monolithique. Elle est appelée à remplir des fonctions polyvalentes en réponse à divers facteurs auxquels elle se voit de plus en plus confrontée : évolution des connaissances scientifiques, innovations techniques favorisant la modernisation des usines et accentuant la mécanisation et l'informatisation des opérations industrielles, épuisement des ressources naturelles, mondialisation de l'économie provoquant l'assimilation de petites et de moyennes entreprises par des compagnies multinationales, éclatement et relocalisation des chaînes de production depuis les pays industrialisés vers les pays en voie de développement.

Les ouvrières et ouvriers se rencontrent donc dans tous les secteurs de l'économie – artisans, producteurs, employés des services publics – et se recrutent parmi les « immigrants » provenant tout autant des régions rurales adjacentes à la ville de Bruxelles que de l'étranger. En témoignent les articles portant sur l'industrie à Bruxelles de 1846 à nos jours, sur les cokeries du Marly, sur le travail de nuit chez Volkswagen et sur les finalités de la formation professionnelle. Dans ce même numéro, d'autres thèmes traitant de la culture ouvrière comme telle et de ses pratiques alimentaires feront certainement les délices de chercheuses et chercheurs en culture matérielle.

Bref, les *Cahiers* méritent d'être consultés non seulement à cause de l'originalité des sources bibliographiques et iconographiques ainsi que de la variété et de la clarté du contenu scientifique, mais surtout parce qu'ils s'adressent à un vaste public.

Marilyn I. Walker, *Ontario's Heritage Quilts*

JENNIFER HAYMAN

Walker, Marilyn I. *Ontario's Heritage Quilts*. Toronto: Stoddart Pub. Co. Ltd., 1992. 260 pp., 219 illus. Cloth $50, ISBN 1-55046-066-8.

Quilts are valuable and fascinating artifacts of social and economic history. They are the voices of nameless women, expressing in their patterns and colours the politics, religion, and personal and cultural symbols of their makers. Some tell life stories, some chronicle important journeys such as a westward migration, and some record life and death at home. Their fabrics reflect economic realities, from the number of mills to the taxes on imported cottons. Popular culture is revealed in the choice of design, whether traditional or the latest from *Godey's*. The history of quilts is an important, but sadly neglected, area of Ontario history, and any new work on the subject is to be welcomed.

The most recent contribution is a handsomely produced volume by Marilyn Walker, *Ontario's Heritage Quilts*. The author's stated purpose is to "introduce Ontario's pioneer quilters and their artistic creations to general readers, history buffs, and ... quilting aficionados" (p. 6). In demonstrating the relevance of quilts to Ontario history, the book succeeds, in that its presentation is so striking that it cannot help but tempt the reader to read more.

As a popular history the book is particularly effective in two areas: the range covered and the illustrations provided. Although historians may feel the range is not comprehensive, the book is not intended for historians – their main source remains the McKendreys' standard *Quilts and Coverlets in the Canadian Tradition* (Toronto, 1979). Marilyn Walker's book includes areas which are often excluded, such as ecclesiastical quilting, which she illustrates with a pall (albeit from 1991), and patriotic quilting, represented by a signature quilt for the Royal Visit of 1939. Another quilt affords a glimpse into the quilting traditions of the Blacks who settled in Ontario in the nineteenth century. The book has a good, concise introduction, as well as a valuable section on the care and cleaning of quilts. It concludes with instructions for three blocks, though these are far too daunting for beginners.

The masterful photography, however, is what makes the book a delight. Marilyn Walker was intimately involved in the design of the photographs, and the results are stunning. Three quilts in particular, placed on a snowbank and on foliage (pp. 13, 83, and 93), reveal a brilliant eye for colour and visual texture. Other quilts are placed in appropriate historical settings, such as the barracks at Fort George, and Ball Farm in the Niagara Peninsula. Another attractive feature is her digressions about furniture such as storage racks and rope beds.

Closer attention to editing would have been appreciated, however. In one case, the text discusses a quilt that has been cut off from the photograph (p. 100); in another, the labelling is reversed (p. 68); and in still another, the Loyalist guns discussed actually appear on an earlier page (p. 111), while a sword is shown in the photo in question (p. 117) – not that either is an appropriate prop for this quilt, which is Mennonite.

That this work is a popular history is clearly reflected in the writing, and it is here that the dangers inherent in the genre are evident. Marilyn Walker's style is enthusiastic, confident, and personable; but is also at times repetitive and vague.

One practice, which is pleasant for the lay reader but very jarring to the specialist, is the author's tendency to blur provenance and fantasy. There are too many lines like "while little is known about why this quilt was made, *it may be assumed* [my emphasis] that it was a wedding quilt" (p. 106). The quilt referred to in fact shows none of the symbols usually found in a wedding quilt, nor is the pattern one associated with weddings. That it was precisely and skilfully made does not necessarily indicate a wedding quilt.

The historical content in the text is interesting and on the whole accurate, but it lacks overall direction and continuity. The chapters are arranged not by chronology or region, but by type of quilt, which may be suitable for a general overview, but does not present a cohesive picture of Ontario's quilt history. As well, some of the historical information is misleading. On pages 110 and 111, two quilts are not properly identified. One quilt is not labelled "Tumbling

Blocks," as it should be; another is misnamed "Dresden Plate" when it is a simple "Fan" block. The discussion of the evolution of Broderie Perse appliqué does not indicate that it came very early – 1700s to early 1800s – and was developed because of the expense and scarcity of the chintz fabrics which were so popular. Instead, the author states that it was meant to imitate crewel work. Crewel work did influence the vines and flowers in ordinary appliqué, and did itself appear on quilts, but it did not influence the development of Broderie Perse as such. Again, on page 51, she suggests that dating a quilt with an indelible pen was not commonly done. While that may be true for the 1930s, it was definitely not uncommon from the 1830s to the turn of the century for quilts to be signed, dated, and even inscribed with indelible pen. These are minor points, but they show how closer attention to historical detail would have improved the text.

The book's most serious weakness, though, is its failure to meet its own objective of presenting Ontario's pioneer quilts, which the author defines as nineteenth-century. It touches on many quilting traditions, but barely mentions the earliest woollen quilts of the English and French settlers. While these quilts may be less attractive, they still form a large portion of the quilts of the "pioneers."

Moreover, of the 210 quilts illustrated and discussed, fully half are from the twentieth century and 47 are not from Ontario – 19 are not even Canadian. Surely somewhere in the "more than 2,000" quilts in Marilyn Walker's personal registry there were Ontario quilts which would have served to illustrate the trends the "foreign" ones do. Although one or two are extraordinary examples of a type (*e.g.*, the Hexagon on page 137), the remainder are quite ordinary. For example, on page 49, there is a Pennsylvania Dutch sampler from 1987 which, while beautiful, does not illustrate the type better than an older example from the Kitchener-Waterloo area would have. The problem may lie in the author's apparent unwillingness to work with museums, which contain many excellent specimens of Ontario quilts. Although she did not wish to include "museum pieces," a compromise here would have allowed the book to truly meet its objective. The presence of so many foreign examples must imply to the reader that there are no comparable Ontario pieces extant; and that is a grave misconception.

Ontario's Heritage Quilts does not present any new historical information, and since the quilts are drawn from a registry that is not publicly accessible, it is of limited use for researchers. However, such a genial and well-illustrated coffee-table book may inspire a general interest in quilt history similar to that in the United States, where research is ongoing, often publicly funded, and led by quilt historians. The Canadian quilting tradition follows our own political and immigration trends, and so is different in many ways, and at times in character, from the American tradition. Academics, governments, and quilt guilds need to work together to produce a comprehensive database accessible to scholars, which will in turn lead to a body of literature. This is an area of material history that has not yet caught the attention of Canadian publishers and researchers, despite a growing market. One can only hope that this book is an indication of an awakening interest.

Donald Wetherell and Elise Corbet, *Breaking New Ground: A Century of Farm Equipment Manufacturing on the Canadian Prairies*

FRANZ KLINGENDER

Wetherell, Donald and Corbet, Elise. *Breaking New Ground: A Century of Farm Equipment Manufacturing on the Canadian Prairies*, Saskatoon: Fifth House Publishers, 1993. vi & 254 pp., photographs, bibliography, index. Paper $14.95, ISBN 1-895618-23-1.

As a student of the history of technology, I had great hopes for what I might learn in Wetherell and Corbet's *Breaking New Ground*. Both the title and subject, a century of farm-implement manufacturing on the Canadian prairies, held forth the promise of insights into the development of agricultural technology beyond the confines of Chicago and Brantford. This was to be an examination of innovation and invention in a milieu where the technology was so closely tied to the market that it might have been used in a field just down the road from where it was manufactured. Properly done, the book would contribute to an understanding of an important area of Canadian material history about which we know far to little. Unfortunately, I was disappointed to discover that little "new ground" was broken. What we are left with, for the most part, is a reworked version of the existing body of literature.

Much of the technology that was used on western Canadian farms was the product of immense full line manufacturers such as International Harvester Co. (IHC) and Cockshutt, who made everything from wheelbarrows to tractors. For them, western Canada was simply part of a much larger and often international market. Their relationship with this distant market was conducted via dealers and blockmen who were often disparagingly characterized by farmers as offering a "one size fits all" approach to agricultural technology. As a consequence of the mass-production techniques adopted by these firms, there was little room for the technological specialization needed to accommodate the differing geography and agricultural practices of western Canada. In fact, the use of technology promoted by the full line companies often encouraged agricultural customs such as deep cultivation and leaving fields free of trash cover, which depleted soil fertility and led eventually to erosion.

This state of affairs provided incentive for local entrepreneurs to develop equipment suited to specific regional conditions. For example, because these individuals were aware of requirements for a sub-surface cultivator, they were in the advantageous position of being able to design equipment to fit that particular need. We learn that before World War II the lack of a proper industrial infrastructure limited the development of the agricultural manufacturing industry in western Canada. For instance, beyond the standard steel stock available from Manitoba Rolling Mills, manufacturers had to attempt to acquire their specialized needs from distant sources. The short line firms which developed did not compete with the full line manufacturers, but rather filled the product niches unoccupied by, or of no interest to, the larger firms. We learn that Versatile's entry into the production of tractors and swathers marked it as one of a small number of firms that were exceptions to this general trend.

Although the book details the factors that led to the creation of an indigenous implement-manufacturing industry, we discover very little about the various firms that took up the challenge. Where one might have wished an in-depth discussion of these companies and the material culture that they produced, we find a recitation of who made what and in what year. We learn that Otto Wobick conceived a sub-surface cultivator; we even have a picture of him standing beside his invention (more about that in a moment). Yet, beyond the most rudimentary of analysis, the book does not reveal what prompted farmers like Wobick to develop specialized equipment.

Another area which is not adequately covered is that of prairie manufacturers' marketing techniques. Informed readers will no doubt already be quite familiar with the promotional activities of Case and Hart-Parr, and would have been equally interested to know how the Boychuk brothers or Charles Noble succeeded in drawing attention to their patents and products. More visuals of advertisements and trade literature distributed by these firms would have helped. Moreover, there is no shortage of material from which to choose: the pages of the *Nor' West Farmer* were full of advertisements, and institutions such as the Western Development Museum have healthy collections of these publications. Given the important role that non-English-speaking immigrants played in the agricultural development of certain parts of western Canada, some discussion of how local entrepreneurs associated with a particular ethnic community marketed their agricultural products within that community is warranted.

As the book ultimately deals with "things," it could have greatly benefited from an increase in the number of photographs. An adept weave of text and illustrative material would have made the book much more useful and enjoyable for casual readers and academics alike. An excellent example of this sort of approach can

be found in Thomas Isern's examination of harvesting techniques and technology on the North American plains.[1] As well, no effort seems to have been made to locate and photo-document extant examples of the products of these firms for inclusion in the book. Here again, there certainly is no lack of evidence from which to choose, since public collections on the prairies are rife with this material that, because it was often produced locally, is reasonably well documented.

At times the authors also display a disconcerting lack of understanding of the technology itself. Using a quotation from a 1932 source (by which time nostalgia for steam power had already taken root), reference is made to early self-propelled steam engines as "huge machines" (p. 89). This is inaccurate and does much to perpetuate the myth of "mammoth technology" on the prairies. Although some steam engines were enormous, their size and cost would have limited their use mostly to bonanza farms. Just as all farmers today do not operate John Deere four-wheel-drive tractors, all farmers around 1900 did not use 100 HP Case steam traction engines.

It is also dangerous to refer to the era of steam technology on the prairies as being cohesive when in fact it was made up of at least two quite different sub-periods, involving quite different steam technology. The authors go on to suggest that steam was faster and cheaper than the available alternatives such as "animal treadmills," neglecting the 10- and 12-horse sweeps that for a time truly did provide an alternative for threshing purposes.

This example illustrates the problems that can occur when one does not engage in original research but rather reworks the existing historiography; the error regarding horse power was copied from Spector. The problem occurs when they misconstrue David Spector's comment (p. 152)[2] regarding internal combustion tractors and water. The point was not that "they did not need water to operate" (p. 90) – as many were water-cooled, they obviously did – but rather that they did not require the quantity of water necessary with a steam boiler. Similarly questionable is the authors' interpretation of the invention of the manure spreader, attributed to a farmer near Stratford, Ontario, who sold out to IHC prior to World War I (p. 198). Were one unfamiliar with the actual chronology of events, one might not be aware upon reading this book that firms on both sides of the international border had been manufacturing manure spreaders before 1900.

Given the richness of the subject matter, one would wish this book to whet the appetite for further in-depth research. Unfortunately, rather than teasing and prompting, it frustrates. In order to gain a better understanding of the prairie implement-manufacturing industry, there must be much more consideration given to the significance of the material culture and the motivation behind its creation. In this presentation it seems bland and colourless, and I am sure that the reality could not be farther from the truth.

Notes

1. Thomas D. Isern, *Bull Threshers and Bindlestiffs: Harvesting and Threshing on the North American Plains* (Lawrence: University of Kansas, 1990).
2. David Spector, *Agriculture on the Prairies 1880–1940* (Ottawa: National Historic Parks and Sites Branch, 1983).

Laurence F. Gross, *The Course of Industrial Decline: The Boott Cotton Mills of Lowell, Massachusetts, 1835–1955*

Alan B. McCullough

Gross, Laurence F. *The Course of Industrial Decline: The Boott Cotton Mills of Lowell, Massachusetts, 1835–1955*. Baltimore, Maryland: The Johns Hopkins University Press, 1993. 279 pp., 32 illus. Cloth U.S. $42.00, ISBN 0-8018-4453-3.

The Course of Industrial Decline traces the history of the Boott Cotton Mills of Lowell, Massachusetts, from its founding in 1835 to its closure in 1955. It is a long story, and a depressing one. Gross characterizes the typical Lowell cotton company as a corporation which "devoted itself entirely to financial success, denied reciprocal responsibility to its employees, and left their care when unneeded to their families or public agencies" (p. 12). Gross's primary thesis is that the ultimate failure of the Boott Mills, and by implication of the New England cotton industry, was due not to any inherent flaws in the company or its employees but to a decision by the firm's proprietors to use it as a cash cow with all profits to be invested elsewhere. As a result it was, through most of its history, technologically obsolete, and survived only through the dedication of its managers and the exploitation of its work force.

The Boott was the eighth of nine major cotton companies formed at Lowell by a tightly knit group of Boston capitalists between 1825 and 1840. The early history of Lowell as an industrial city is well known and justly regarded as a key stage in the development of industry, industrial labour, and corporate organization in America. The significance of these developments is recognized in Lowell National Historical Park, which commemorates Lowell as a pioneer and symbol in the industrial revolution in America. The surviving Boott mills form a part of the park, and the author has conducted research on the mills under contract with the National Parks Service. The book under review doubtless owes something to this earlier research but it is an independent work, not a product of the National Parks Service.

Gross passes over the early history of Lowell and the Boott quickly; his focus is not on the Golden Age of Lowell but on the century following the Civil War when the processes that started with such promise in Lowell worked themselves out.

During the last three decades of the nineteenth century the Boott paid regular dividends, but apparent prosperity masked growing problems. The New England cotton industry was being pressed by southern cotton companies with lower labour costs and newer, more efficient mills. After the 1870s the owners of the Boott failed completely to re-invest in new buildings and were slow to replace equipment. By 1902 a consultant reported that the buildings were beyond adaptation and should all be completely replaced. The recommendations, like many similar ones, were ignored. In 1905, following a crisis in the industry, the company was reorganized as Boott Mills. The re-organization changed little. The obsolete buildings remained in use for another 50 years and equipment remained outdated. Profitability was maintained by the "speed up" and the "stretch out," demanding more of workers while keeping wages so low that the mill could not retain its best workers. The company also benefited from a remarkably dedicated and able manager, Frederick Flather, and his two sons, who ran the mill for 50 years. Flather, an admirer of F.W. Taylor's scientific management theories, was not technically expert in the cotton industry but he had executive ability and was adept in exploiting niche markets. Most important, he was dedicated to the survival of the company; there is little doubt that he prolonged the Boott's existence by many years. What he could not do was persuade the mill owners to make the significant investment that the mill needed to be competitive. By 1955 the Boott had reached the end of its course and, faced with a refusal by labour to accept a wage rollback, the owners shut the mill down. The remarkable thing is not that the company failed but that it survived as long as it did. As Flather wrote to a former employee, the closing was "fifty years overdue" (p. 239).

Gross creates a richly textured and sympathetic history of the company, describing the interplay of management, labour and technology. He minimizes the traditional argument that competition with low-wage textile mills in the south doomed the New England mills and argues convincingly that both labour and management at the Boott fought an uphill battle to compensate for the antiquated mill buildings and outdated equipment imposed by the owners. If there is a weakness in his account of the company, it is in his portrait of the proprietors. They remain a largely faceless and nameless group. There is little sense of what led them to follow a policy that, they were advised again and again, would cripple the mill in the long term. Gross would probably argue that the personalities and personal motivations of the owners are not significant, for they were simply following principles which were inherent in the Lowell experiment and in much of modern economics: the absolute mobility of capital, the absence of any responsibility of capital to labour

beyond a daily wage, and the pursuit of comparative advantage.

The work would also be stronger if the author could provide more detail as to how profitable the Boott was and where the profits were re-invested; Gross makes it clear that profits were not plowed back into the mill. It is probable that the figures are simply not available but, if they could be presented, they would make a strong case even more convincing.

In his postscript Gross draws parallels between modern entrepreneurs, who are often criticized for "being devoted to the production of profits, not of goods" (p. 242), and the owners of the Boott. He argues that the modern "plunderers" are not anomalies but are the legitimate descendants of the financiers who organized Lowell and the Boott. In short, Gross turns a study of a defunct textile corporation into a condemnation of economic practices and theories that are widely accepted today and are inherent in the North American Free Trade Agreement. How his thesis will be received and incorporated into the interpretation of Lowell is an interesting question.

Lynn Spigel, *Make Room for TV: Television and the Family Ideal in Postwar America*

PAUL NATHANSON

Spigel, Lynn. *Make Room for TV: Television and the Family Ideal in Postwar America*. Chicago: University of Chicago Press, 1992. 236 pp., 20 illus. Cloth U.S. $42.00, ISBN 0-226-76966. Paper U.S. $15.95, ISBN 0226-76967.

In *Make Room for TV: Television and the Family Ideal in Postwar America*, Lynn Spigel presents a social history of the new medium. Like both film and radio when they originated (and, for that matter, printed books), television did not become culturally integrated without controversy over its possible benefits and dangers. Spigel focusses attention on public debates, both explicit and implicit, over the relation between television and family life at a time when the nuclear family itself was being transformed by rapid social and economic change. The first chapter is about popular notions of both home and entertainment that emerged between the Victorian period and the years following World War II. The rest of the book is about the controversies that arose over specific problems associated with television. On moral, practical and even aesthetic grounds, for example, some people thought television would prove to be a beneficial and unifying force in the home, while others thought it would prove to be a destructive and divisive one. Of interest to Spigel is not so much the merits of arguments on either side but the existence of these arguments.

She refers to the latter as "discourses." I am irritated by her repetitive use of this word. But I would be troubled by her undisciplined and tendentious use of it in any case. Sometimes she refers simply to a debate or discussion. At other times, she refers to the specialized topic of a debate or discussion. At still other times, she refers to the "hidden agenda" of a debate or discussion. By now, it is no secret that discourse, especially when used in the plural and in this third sense, is a code word that identifies deconstruction. The basic premises are that (1) reality is known to us only through language; and (2) language is inherently subjective and biased: ergo (3) all forms of communication are culturally "constructed" (another dreadfully over-used word) to serve the special interests of some class and its "ideology" (a word she uses in the Marxist sense). Scholarship is not properly the study of empirically verifiable and supposedly objective facts, therefore, but the deconstruction, or problematization, of value-laden discourses that purport to be value-free. Scepticism about language is hardly a new idea. What is new, however, is the idea that language is totally incapable of conveying information about the outside world. Taking this to its logical conclusion would not only undermine scholarship, of course, but subject deconstruction itself to the same critique. Advocates resort, therefore, to a kind of selective cynicism: they deconstruct only the

discourses they dislike, those said to be dominant or hegemonic. And the result is a kind of academic and political opportunism: in the void left by competing discourses, they install at the supposedly non-existent centre what amounts to one of their own. Drawing extensively and uncritically on the work of other feminists, this is precisely what Spigel does.

Spigel tries to make two major points: (1) that the main problem generated by television was conflict over the nature of gender (although she places this in the context of a more general conflict over the nature of domesticity); and (2) that women were actively involved, through their own magazines, in the negotiations over the nature of television (not merely passive victims of exploitation by manipulative, male industrialists). Though far less polemical than that of some feminists, Spigel's work does have an edge whenever it touches on gender. Unlike some of her colleagues, she acknowledges that masculinity is an artificial construction no less than femininity. But in spite of a nod now and then to problems created by television for men (such as the depiction of fathers as fools), she assumes that the problems created for women are, in effect, central to any discussion of gender. Her approach, which should be clearly identified as part of the feminist discourse, can be challenged as gynocentric for precisely the same reason that others can be challenged as androcentric: it obscures as much as it reveals. The cultural meaning of manhood has always been more problematic than that of womanhood, if only because nature itself provides men with no practical or symbolic equivalent of childbirth. When television arrived on the scene, conventional notions of masculinity still inhibited the kind of collective (or even individual) introspection that allowed women to discuss openly the problems created by conventional notions of femininity (that is, the function of women at home or in society). Apart from a few members of the intellectual elite, such as Ernest Hemingway and Arthur Miller, very few men discussed the deepening crisis of masculine identity. With two world wars and a great depression in the recent past, not to mention a technological revolution looming in the immediate future, men who worried publicly about the role of women – that is, men who worried privately about their own roles – were not necessarily either stupid or sexist; they had perfectly good reasons for worrying (though not always for the solutions they proposed). Had Spigel considered it worthwhile, she could have restored the scholarly balance by examining the indirect and symbolic discourses on masculinity in so many films, magazines and television shows of the period (or at least suggested that others do so).

The book is also flawed by Spigel's use of source material. It is based primarily on generalizations from her own perusal of popular magazines. Readers must take her word for it that "most magazines" presented this image of women's work or that image of domestic space. The book would have been more useful (though not more readable) had she first established well-defined categories based on easily observed formal properties – line, colour, calligraphy, and symmetry, for example, in the advertisements – and then systematically classified her data accordingly. Who knows what she might have found? Her initial hunches might have been confirmed. On the other hand, she might have discovered some quite different patterns, individual articles or ads that show signs of ambivalence and confusion, or, at the very least, a few significant and suggestive anomalies. As she herself describes the period, after all, it was characterized by anxiety and inconsistency.

Nevertheless, *Make Room for TV* is worth reading for anyone interested in social history, semiotics and, of course, the many fields associated with communications. Moreover, apart from the repetitious use of a few code words – and the consistent substitution of *compassionate* for *companionate* to describe an ideal of family life that had been held since the late nineteenth century – it is well written.

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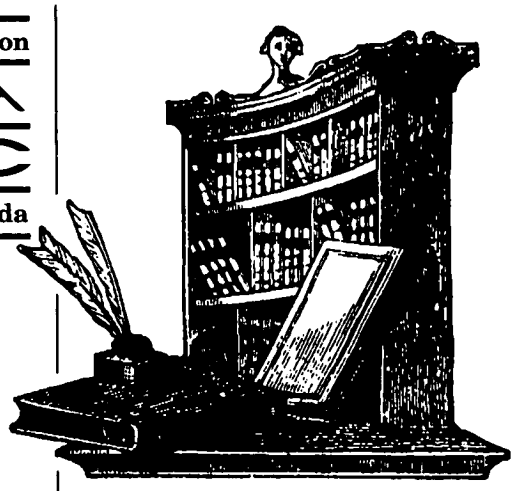

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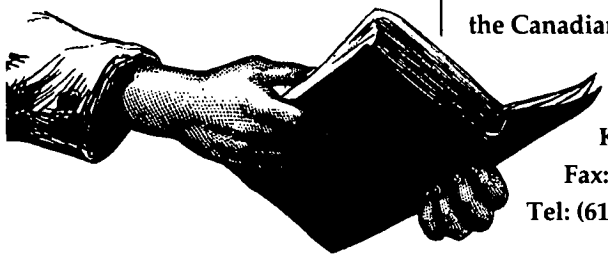

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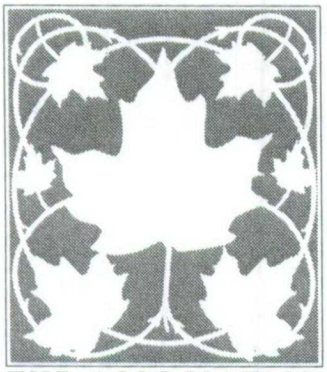

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