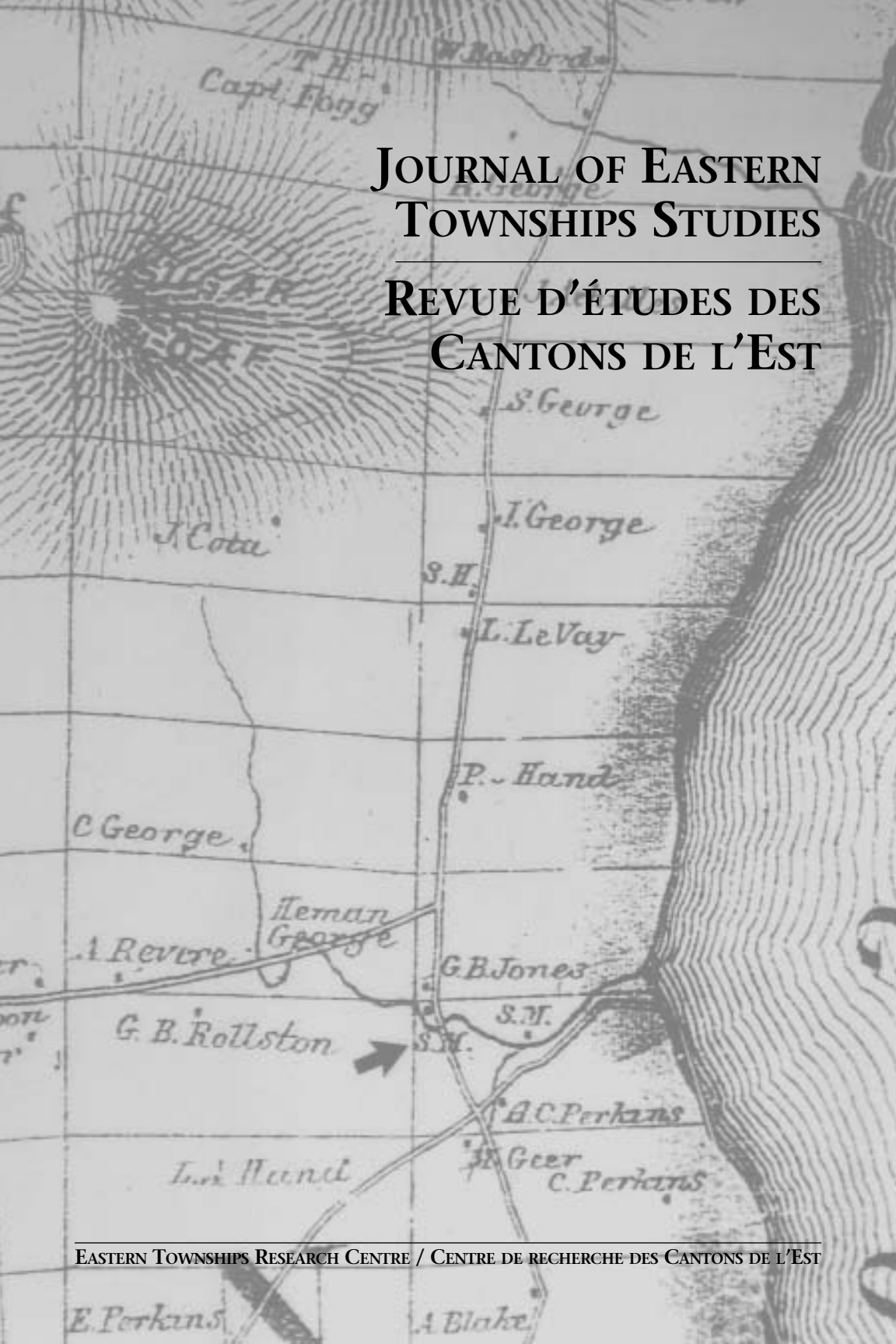

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REVUE D'ÉTUDES DES CANTONS DE L'EST

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La couverture/Cover illustration : *Détail de la carte de O.W. Gray (1864) illustrant le secteur du site Jones à Vale Perkins, Québec.*

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UN MOULIN HYDRAULIQUE PRÉ-INDUSTRIEL EN ESTRIE : LE SITE JONES (BGFB-6) À VALE PERKINS, CANTON DE POTTON

Robert Bilodeau et Pierre-Jacques Ratio[1]
Société de recherche et de diffusion ARCHÉOBEC

Plusieurs éléments immobiliers caractérisent le site Jones (BgFb-6)[2] : les fondations en maçonnerie sèche d'une structure rectangulaire située près du ruisseau de Vale Perkins, un dépotoir associé aux occupants du site depuis le 19e siècle, des monticules de pierres d'origine agricole ainsi que des pétroglyphes sur des affleurements rocheux.[3]

En l'absence d'une intervention archéologique et d'une recherche historique appropriée, l'ensemble des composantes du site Jones suscite depuis plusieurs années une vive controverse concernant leur chronologie et leur appartenance culturelle.[4] Le sujet le plus controversé demeure incontestablement la présence de pétroglyphes sur les affleurements rocheux dont la signification et l'origine culturelle demeurent indéterminées.[5]

L'acquisition de données archéologiques inédites et une recherche documentaire ont permis de mieux comprendre la fonction première du bâtiment et de le dater plus précisément.[6]

Emplacement du site Jones

Le site Jones est localisé à environ un kilomètre à l'ouest du lac Memphrémagog sur un secteur relativement plat dont l'altitude oscille entre 250 et 260 m.[7] Les vestiges architecturaux s'insèrent à l'intérieur d'un axe évidé de fractures dans le substratum rocheux qu'emprunte le ruisseau de Vale Perkins qui est alimenté, plus à l'ouest, par de nombreux ruisselets dont la source se situe à environ 350 m d'altitude. En aval du site Jones, ce ruisseau qui s'écoule d'ouest en est reçoit les eaux du ruisseau Perkins et se déverse ensuite dans le lac Memphrémagog avec une rupture de pente d'environ 40 m. La majeure partie du tracé du ruisseau est masquée par une épaisse végétation.

Hypothèse de travail: un moulin hydraulique

Avant le début de l'intervention archéologique, plusieurs éléments laissaient suggérer que les vestiges architecturaux du site Jones pourraient être ceux d'un moulin hydraulique: sa localisation stratégique sur le ruisseau de Vale Perkins, en aval d'une importante dénivellation; l'ouverture de son parement sud donnant accès au ruisseau, lequel pouvait être associé à un canal de fuite; et un vestige structural, situé en amont du ruisseau avant la dénivellation et s'apparentant à un élément de barrage pour un réservoir d'eau. La présence d'un tourillon cruciforme, retrouvé sur le site par le père du propriétaire actuel, M. Harry Jones, demeure toutefois l'élément primordial qui a dirigé le sens de notre réflexion. Cet élément métallique se plaçait dans deux entailles perpendiculaires sur l'extrémité de l'arbre d'une roue hydraulique. Ce sont ces données initiales qui ont permis d'orienter l'interprétation du site Jones vers l'hypothèse d'un moulin hydraulique.

Occupation euro-canadienne du Canton de Potton

Le canton de Potton a une superficie d'environ 10 mi^2 (25,9 km^2). Il est borné au sud par la frontière des U.S.A. (État du Vermont), à l'est par la rive occidentale du lac Memphrémagog, au nord par le canton de Bolton et à l'ouest par le canton de Sutton.

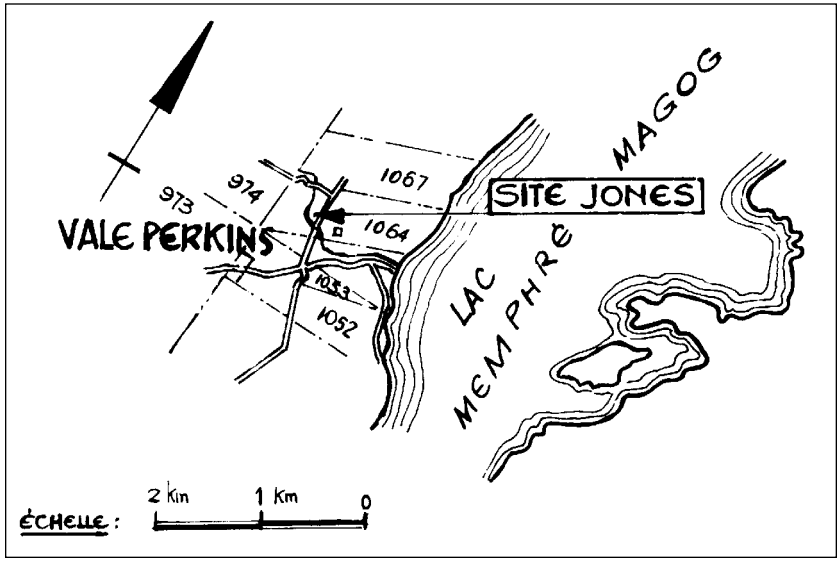

Figure 1: Localisation du site

À cause du tracé irrégulier des rives du lac Memphrémagog, sa bordure sud est plus longue que ses bordures nord ou ouest.

Dès 1792, Nicholas Austin, à qui une terre avait été concédée dans le canton de Bolton, s'établit par erreur dans le canton de Potton sur les berges du lac Memphrémagog, à l'emplacement actuel de Perkins Landing. Les premiers colons s'établirent dans le canton sur une base permanente dès 1793. La population du canton de Potton, en 1803, n'atteignait que 184 âmes, réparties dans 34 familles,[8] et elle était estimée à près de 800 âmes en 1815.[9]

Figure 2: Détail de la carte de O.W. Gray (1864) illustrant le secteur du site Jones. La flèche indique la localisation d'un moulin à scie (saw mill) qui correspond aux vestiges architecturaux étudiés lors de l'intervention archéologique de 1992.

Les schèmes d'établissement euro-américains en Estrie pendant la première moitié du 19e siècle étaient essentiellement orientés vers les sites hydrauliques et constituaient des établissements ruraux dispersés.[10]

La population du canton de Potton est essentiellement d'origine américaine et l'on remarque jusqu'à la seconde moitié du 19e siècle la présence d'un réseau culturel et économique vers la Nouvelle-Angleterre.[11] La présence de francophones atteindra à peine le quart de l'effectif au début du 20e siècle.[12]

Dans un canton agricole isolé, tel celui de Potton,

> (…) où circulait peu de capital et où les produits agricoles et forestiers transformés étaient d'abord destinés au marché local, l'exploitation des larges cours d'eau présentait peu d'intérêt. La plupart des moulins, scieries et autres petites usines s'établissaient plutôt aux abords des petites rivières plus faciles à exploiter, où l'investissement nécessaire à la construction de barrages et autres installations hydrauliques était moins important.[13]

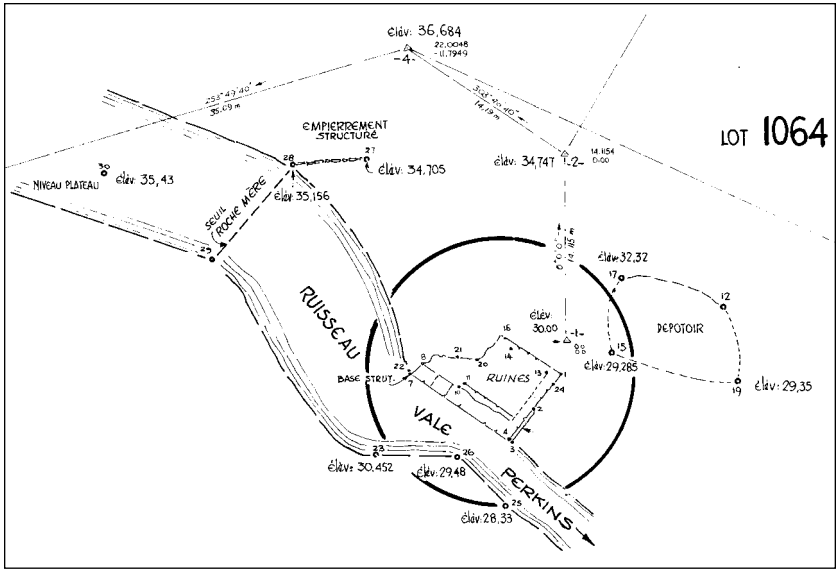

Figure 3: Plan du site

Infrastructure d'un moulin hydraulique

Le premier aspect à considérer lors de l'établissement d'un moulin hydraulique est le choix d'un emplacement qui fournira un débit constant et suffisant d'énergie hydraulique.[14]

Le site Jones se situe immédiatement après une importante rupture de pente de près de 6 m. De plus, le débit ancien (seconde moitié du 19e siècle environ) du ruisseau semble avoir été relativement plus important qu'aujourd'hui: *"About 1840 my grandfather [Cyrus Perkins] built a sawmill [moulin situé en aval du site Jones] on the brook (then a small river) [ruisseau de Vale Perkins] which empties into the lake at the Landing*.[15] Cette baisse importante du débit actuel du ruisseau est vraisemblablement liée au déboisement intensif qui eut lieu dans la seconde moitié du 19e siècle.[16]

L'infrastructure typique d'un moulin hydraulique était composée: 1) d'une roue hydraulique, 2) d'un barrage en amont qui détournait le débit vers le canal ou qui emmagasinait l'eau (réservoir), 3) d'un canal (*headrace*; canal ou bief d'amont ou d'amenée) qui dirigeait l'eau vers le moulin, 4) d'une vanne qui contrôlait l'eau vers la roue et 5) d'un canal (*tailrace*; canal ou bief d'aval) qui retournait l'eau vers le ruisseau.[17]

À environ 29 m au sud du ruisseau, en amont de la rupture de

pente, on remarque la présence d'un empilement de moellons bruts, de forme rectangulaire. Cet empilement est long de 13,20 m et large de 1,15 à 1,78 m. Sa partie nord est formée d'un remblai de matériaux meubles qui s'incline doucement vers le ruisseau. Cet élément structural se situe sur le rebord d'une dépression naturelle et joue le rôle d'une digue retenant les eaux au sud du ruisseau. En aval de cette structure, le lit du ruisseau forme une petite gorge d'environ 4 m de profondeur. La structure fait donc office de barrage, un peu à l'image du le barrage construit par Nicholas Austin dans le canton de Bolton vers 1805, et qui prenait la forme d'une digue très rudimentaire formée d'un amoncellement de pierres jetées en travers de la rivière Magog.[18]

La roue hydraulique constitue l'un des éléments les plus importants de cette structure puisqu'elle transmet l'énergie aux différentes composantes mécaniques du moulin :

> The design of the waterwheel was simplicity itself: a circular structure of varying diameter and breadth around the circumference of which at regular intervals were arranged floats or buckets for intercepting the falling water and capturing a portion of the energy produced by the fall of water in a given volume from a higher to a lower level.[19]

Contrairement aux roues verticales, la roue horizontale n'a été abordée que très superficiellement dans la littérature consacrée aux

Figure 4: Vue générale vers le nord-est des vestiges architecturaux du moulin hydraulique du site Jones (BgFb-6) à Vale Perkins.

moulins du Nord-Est américain, notamment à cause de son faible rendement énergétique et de son caractère très artisanal.[20] D'ailleurs, dans la vallée du Saint-Laurent, la roue horizontale semble n'avoir jamais été utilisée pendant le 18e siècle. Néanmoins, durant la période pré-industrielle, la simplicité et le faible investissement requis pour l'implantation d'un tel système faisait de cette roue un choix tout à fait logique. Son importance a été telle qu'elle figurait dans le *Young Mill-Wright and Miller's Guide* d'Evans publié aux États-Unis en 1795.

Ces roues possédaient un diamètre variant entre 3 et 6 pieds (0,91 et 1,82 m); exceptionnellement, elles pouvaient atteindre jusqu'à 10 pieds (3,048 m).[21]

La position latérale et les dimensions de l'ouverture du canal de fuite rencontrée au moulin du site Jones s'expliquent davantage si l'énergie hydraulique était actionnée par une roue horizontale plutôt que par une roue verticale.

Moulins de Vale Perkins au 19e siècle

Des recherches historiques effectuées par Tremblay,[22] l'existence d'au moins quatre moulins confirment à Vale Perkins au 19e siècle. Le premier moulin fut construit par Cyrus Perkins sur le ruisseau de Vale Perkins vers 1840 et était situé en aval du site Jones. Dans les recensements de 1861 et 1871, Mills Geer était propriétaire

Figure 5: Vue vers le sud-ouest des vestiges architecturaux du moulin hydraulique du site Jones (BgFb-6) caractérisé par une maçonnerie sèche.

Figure 6: Détail du parement du mur est du moulin hydraulique du site Jones (BgFb-6) à Vale Perkins; l'échelle mesure un mètre.

d'un moulin à scie dont la localisation demeure encore inconnue. Le recensement de 1861 indique également la présence d'un moulin à scie appartenant à Andrew Gordon dont l'emplacement demeure également inconnu. La dernière mention d'un moulin date des environs de 1865, et il aurait été construit par le capitaine Geo W. Fogg à proximité de celui bâti par Perkins.

La carte de O.W. Gray,[23] datée de 1864, indique la division cadastrale du canton de Potton, les noms des propriétaires ainsi que la localisation des moulins. Dans le secteur de Vale Perkins, deux moulins à scie (S.M. pour *saw-mill*) sont identifiés le long du ruisseau de Vale Perkins. L'un est situé en aval, à la confluence du ruisseau de Vale Perkins et du ruisseau Perkins, sur la rive nord. Toutefois, la localisation du second moulin s'avère capitale pour la compréhension des vestiges architecturaux du site Jones. Il se situe aussi sur la rive nord du ruisseau de Vale Perkins, directement au sud de la maison occupée par G.B. Jones et à l'ouest du chemin du Lac. Cette localisation cartographique est pratiquement similaire à celle des vestiges du site Jones.[24] Ces indices cartographiques militent en faveur de l'identification des vestiges architecturaux à ce dernier moulin à scie.

Figure 7: Section du mur sud comportant une ouverture mesurant 1,30 m par 1,20 m et correspondant au canal de fuite.

Vestiges architecturaux

Le bâtiment est formé de trois murs d'inégale longueur: le mur sud est long de 9,25 m, le mur est de 6,50 m et le mur nord de 5 m. Le côté ouest est fermé par un affleurement rocheux dont le tracé est irrégulier, ce qui a inévitablement influencé la longueur des murs sud et nord. Tous les murs sont caractérisés par une maçonnerie sèche. Les parements sud et est comportent un minimum de sept assises irrégulières alors que le parement nord n'en conserve que deux. La taille modulaire des pierres insérées dans les parements est variable, allant de 0,15 X 0,35 m à 3,50 X 0,25 m. Longeant le ruisseau de Vale Perkins, le mur sud se distingue par une ouverture presque carrée: 1,30 m de largeur par 1,20 m de hauteur. Cette ouverture correspond au canal de fuite du moulin. La pierre formant le linteau mesure 2,40 m de longueur par 1,20 m de largeur et est épaisse de 0,25 m. Un empattement n'a été identifié que sur le mur est, et déborde de 0,20 m.

La qualité de cet ouvrage en maçonnerie sèche dénote une maîtrise de cette technique de construction, notamment en relation avec les dimensions des pierres et leur emplacement lors de l'édification du bâtiment.[25]

Les affleurements rocheux sur le site Jones ont été identifiés

comme de l'ardoise calcodolomitique.[26] Ce type d'ardoise est plus susceptible de s'éroder mécaniquement que chimiquement et son principal axe de faiblesse est représenté par le clivage.

Plusieurs indices[27] suggèrent des activités associées au débitage de l'ardoise sur le site afin d'obtenir des pierres de maçonnerie de même que pour aménager un espace pour le carré du moulin. La structure de l'ardoise, roche métamorphique, se prête admirablement bien au débitage.

Tissu archéologique

Le contexte particulier du site Jones, dont les données archéologiques sont représentées essentiellement par des couches d'abandon, requiert l'apport de quelques précisions d'usage. Aucune couche distincte d'occupation n'a été identifiée lors de l'intervention sur le terrain.[28] Seule une couche de construction (tranchée de fondation) permet de dater, grâce à la valeur chronologique des objets-témoins,[29] la construction du bâtiment. Les couches d'abandon, postérieures à la construction, se confondent avec la formation d'un humus forestier. Celles-ci se seraient formées peu de temps après la fin des activités du moulin. Les données documentaires et archéologiques suggèrent d'ailleurs une période d'occupation très courte (environ 1855–1875), ce qui expliquerait cette configuration stratigraphique particulière. Malgré un faible échantillonnage (N = 139), l'ensemble des objets-témoins de l'assemblage est caractérisé par une nette prédominance de matériaux métalliques (fréquence relative de 60,43%) dont la plupart sont associés à la quincaillerie, et quelques-uns à des composantes mécaniques indéterminées.[30] Ce profil artefactuel renforce l'hypothèse d'une occupation à caractère industriel.

Discussion

Le moulin du site Jones témoigne de l'adaptation de la population locale au contexte géographique de Vale Perkins pendant la colonisation de la seconde moitié du 19e siècle, à une époque où les communications terrestres étaient déficientes et où les communautés se devaient d'être auto-suffisantes. L'absence de moyens de transport adéquats pendant la première moitié du 19e siècle a permis le maintien de ces petits établissements pré-industriels qui dépendaient entièrement des matières premières locales et dont la production était essentiellement dirigée vers le

marché local. Malgré le caractère fluctuant et irrégulier des petits cours d'eau, ces derniers représentaient

> (…) la condition sine qua non pour que se forme le noyau de chacun des centres de service agricoles qui ponctuaient le paysage des Cantons de l'est. Dans la première moitié du XIX[e] siècle, le patron de peuplement, solidement implanté dans la région, se caractérisait par une population agricole dispersée qui se concentrait fréquemment dans les hautes terres, entre les rivières, et avait pour complément un réseau de centre de services dont le noyau était la source d'énergie hydraulique.[31]

Ces vestiges s'avèrent donc relativement anciens dans l'histoire de l'implantation de l'occupation euro-canadienne du canton de Potton et témoignent de l'importance des petits moulins dans le développement des centres de service agricoles de l'Estrie pendant le 19[e] siècle.

Cette recherche a permis de relever que, malgré l'importance fondamentale des moulins hydrauliques à caractère artisanal dans l'implantation et le développement des centre villageois pendant le 19[e] siècle dans les Cantons de l'est, les données historiques, technologiques et archéologiques disponibles concernant ce phénomène demeurent relativement faibles et largement éparpillées.

L'extrême indigence des données comparatives sur les moulins pré-industriels dans les Cantons de l'Est (techniques de construction, aménagement, infrastructure technologique, chronologie, site hydraulique, longévité, etc.) ne permet guère de particulariser et de situer l'originalité du moulin du site Jones par rapport à une échelle régionale.

ABSTRACT

Research on the architectural remains at the Jones Site (BgFB-6) in Vale Perkins, Potton County, has been beset by controversy over date of origin, cultural significance, and initial function, because of the presence nearby of petroglyphs thought by some to be in the Ogam writing of Ireland. The present article presents a wholly new theory based on archaeological and historical investigation: the case is made that the remains at this site are those of a water mill—more precisely, a saw mill—dating from the second half of the nineteenth century. All evidence suggests the mill only operated for a very short time (roughly 20 years) and its yield was

sold locally.

It is noteworthy that such pre-industrial buildings were not rare in the Eastern Townships in the nineteenth century. During the early phase of colonization, when roads were poor, water mills constituted an important asset in the development of these small, isolated communities.

NOTES

1 Les auteurs tiennent à remercier sincèrement MM J. Derek Booth et Jean-Marie Dubois pour leurs commentaires sur la forme et le contenu de cet article.

2 Les sites archéologiques au Québec et au Canada sont désignés par une codification (code Borden) établie en fonction de la longitude et de la latitude de chacun des sites. Ainsi, le code Borden d'un site est composé de quatre lettres se référant à son emplacement géographique et d'un numéro correspondant au niveau d'entrée du site.

3 Les pétroglyphes du site Jones à Vale Perkins, notamment ceux surnommés *Indian Rock of Potton*, sont connus depuis le début du 20e siècle et ont fait l'objet de quelques articles qui leur attribuaient une origine amérindienne (H.P. Shufelt, 1965: *The Indian carry-place between Lake Memphremagog and the Missisquoi River. Along the Roads: Lore and Legend of the Brome County*. The Brome County Historical Society, Knowlton, p. 17–19; L. Auger, 1977: *A tale was told at Potton Rock. Yesterdays of Brome County*. The Brome County Historical Society, Knowlton, 3, p. 40–49). Les autres éléments du site (monticules de pierres, structure rectangulaire et dépotoir) furent identifiés par le président de l'Association du patrimoine de Potton, M. Gérard Leduc, dès 1985.

4 Ainsi, sur la base du caractère monumental des pierres formant les assises de la fondation du bâtiment et de certaines similarités entre l'écriture Ogam et les pétroglyphes du site Jones, certains n'ont pas hésité à leur attribuer une haute antiquité et à les associer à une occupation européenne précédant la première occupation euro-canadienne locale datant de la fin du 18e siècle. Cette identification s'appuie essentiellement sur les recherches épigraphiques de Barry Fell (*America B.C.*, Pocket Books, New York, 1989, 347 p.) sur de nombreux pétroglyphes en Amérique du Nord qui prouveraient, selon l'auteur, une présence européenne pré-colombienne sur le continent nord-américain. Plusieurs systèmes d'écriture auraient été identifiés, notamment l'Ogam celtique. La thèse d'une occupation européenne pré-

colombienne dans les cantons de l'Est a été développée par G. Leduc (A. Rajan, 1989: "Sermons in stone." *Concordia University Magazine*. September 1989, p. 10–12; G. Leduc, 1991: *Potton on the Rock: Towards a new Archaeology in the Eastern Townships*. *Yesterdays of Brome County*, vol. 8, p. 147–156). Sans le support de données objectives, cette interprétation à caractère sensationaliste a toutefois été largement véhiculée par différents médias régionaux et nationaux (M. St-Germain, 1993: "Obélix en Amérix." *L'Actualité*, 1er mai 1993, vol. 18, No 7, p.41–44).

5 L'Association du patrimoine de Potton s'est interrogée depuis plusieurs années sur la possibilité d'un parallèle entre certains pétroglyphes de Vale Perkins et d'autres du Nord-Est américain rédigés en *Ogam* celtique. Une expertise effectuée par un archéologue du ministère de la Culture (Gilles Samson, *Rapport d'expertise interne concernant les marques observées sur des affleurements rocheux à Vale Perkins*, rapport inédit, 1986, ministère des Affaires culturelles, 12 p.) concluait que les marques étaient d'origine anthropique et résultaient d'une intention de représentation. Sans toutefois pouvoir déterminer avec certitude l'origine culturelle de ces marques, il fut suggéré que ces représentations correspondraient davantage à ceux de la culture euro-américaine qu'à ceux de la culture amérindienne.

Plus récemment, Pierre-Jacques Ratio (*Les pétroglyphes et leurs éléments graphologiques*, rapport inédit remis à Association du patrimoine de Potton, 1992, 17 p.) s'est efforcé d'approfondir d'éventuelles similarités entre les pétroglyphes du site Jones et les pétroglyphes américains attribués à l'écriture *Ogam*. Un rapprochement entre le livre de *Ballymote*, manuscrit bilingue *Ogam* / gaélique du 14e siècle (G.M. Attkinson, 1874: *Account of ancient Irish treatises on Ogham writing illustrated by tracing from the original MSS*. The Royal Historical and Archaeological Association of Ireland. Originally the Kilkenny Archaeological Society in the year MDCCCXLIX. Vol. III Fourth Series, No 19), fut tenté avec des résultats peu concluants.

Dans l'état actuel des connaissances en archéologie, il demeure impossible de déterminer la signification exacte des glyphes du site Jones et d'y voir un lien quelconque avec l'écriture *Ogam* celtique.

Une synthèse effectuée par D. Arsenault sur les différentes interprétations des pétroglyphes *(Les pétroglyphes du site Jones de Vale Perkins, Canton de Potton. Évaluation des diverses thèses proposées et discussion à propos des significations à donner aux gravures rupestres du site*, note de recherche déposée au ministère de la Culture et des Communications du Québec, direction régionale de l'Estrie, 1993, 10 p.) indique en guise de conclusion :

Il devient de plus en plus évident que la compréhension de ce type d'image passe d'abord par la compréhension du contexte dans lequel elle a été produite, et par conséquent de la nécessité de recueillir le plus grand nombre d'informations pertinentes associées directement ou indirectement au site; bref, de procéder à des travaux archéologiques sur le site même, comme cela se fait ailleurs en Amérique du Nord pour les sites à pétroglyphes.

6 La direction régionale de l'Estrie du ministère de la Culture du Québec et la Municipalité du Canton de Potton (Mansonville) confiaient à la Société de recherche et de diffusion Archéobec le mandat d'effectuer un inventaire du potentiel archéologique du site Jones (BgFb-6) à Vale Perkins. Le travail de terrain a été réalisé du 10 au 21 septembre 1992 inclusivement avec une équipe composée d'un archéologue, d'un archéologue-assistant, de deux techniciens de terrain et d'un préposé aux fouilles non spécialisé. Les résultats de l'intervention figurent dans le rapport: R. Bilodeau et P.J. Ratio, *Inventaire du potentiel archéologique du site Jones (BgFb-6), Vale Perkins, Canton de Potton, automne 1992: le moulin, le dépotoir et le monticule de pierres*, 1993, rapport inédit remis au ministère de la Culture du Québec et à la Municipalité du Canton de Potton, 99 p.

7 La localisation de plusieurs établissements agricoles pendant le début du 19e siècle à Vale Perkins s'explique par la configuration physiographique de ce secteur du canton de Potton. La dénivellation relativement abrupte vers le lac Memphrémagog a contraint l'implantation des complexes agricoles à l'intérieur des terres jusqu'à un replat topographique situé entre 250 et 300 m d'altitude.

8 Archives publiques du Canada, General Census, 1803.

9 Joseph Bouchette, *Topographical Description of the Province of Lower Canada*, Canada East Reprints, 1973, St. Lambert.

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18 Hélène Liard, *Les moulins à eau des Cantons de l'Est (1790–1987)*, Société d'histoire de Sherbrooke, 1989, p. 9.

19 Louis C. Hunter, *op. cit.,* p. 73.

20 Louis C. Hunter, *op. cit.*

21 Louis C. Hunter, *op. cit.*

22 Lorraine Tremblay, *Les débuts du Canton de Potton*, ministère des Affaires culturelles, service de l'Aide-Conseil, 1986, p. 4–5.

23 O.W. Gray, *Maps of the Counties of Shefford, Iberville, Brome, Missisquoi and Rouville* (…), Archives publiques du Canada, NMC 0014735 4\6, 1864.

24 En 1864, ce moulin à scie ne se situait pas sur la propriété de la famille Jones (lot 17 du rang 10), mais sur le lot au sud (lot 16 du rang 10) près de la ligne mitoyenne des deux lots. L'analyse des cartes anciennes et de certains actes notariés révèle que l'orientation et la configuration des lots situés au nord du lot 16 du rang 10 ont été modifiées entre 1881 et 1894. Ainsi, les lignes nord et sud des lots du rang 10, au lieu d'être perpendiculaires au lac Memphrémagog, accusent maintenant une orientation de 25° vers l'ouest. Cette modification de la configuration des unités cadastrales explique la localisation actuelle des vestiges architecturaux sur la propriété de M. Jones et l'absence de souvenirs de la famille Jones concernant cette structure.

25 Il faut souligner que le débitage artisanal de la pierre pour des fins de construction était pratique courante en Nouvelle-Angleterre pendant le 19e siècle: *The technologies of stone hauling, cutting and building were common knowledge in the early settlement period and throughout the nineteenth century. Field stones and quarries were the main sources. The quarries were not usually huge cuts, but simply bedrock exposures or outcroppings which necessitated splitting and other "quarrying" techniques before the stone could be utilized.* Giovanna Neudorfer, *Vermont's Stone Chambers. An Inquiry into their Past.* Vermont Historical Society, Montpellier, Vermont, 1980, p. 50–53.

26 Jean-Marie Dubois, *Expertise préliminaire des "pétroglyphes" de Vale Perkins, canton de Potton, Québec*, rapport inédit, 1984, ministère

des Affaires culturelles du Québec, direction régionale de l'Estrie; Daniel Lamothe, *Les pétroglyphes de Vale Perkins. rapport de visite*, 1984.

27 La section ouest du moulin ne comporte aucun mur; elle est formée par une paroi rocheuse qui présente des cicatrices de prélèvement. Deux trous forés horizontalement ont été identifiés sur cette paroi. Sur le parement nord du mur sud, une pierre de l'assise supérieure présente nettement sur sa face inférieure une marque d'extraction: un trou foré. Légèrement en aval du moulin, à environ 3 m, se dressent verticalement sept pierres rectangulaires placées l'une contre l'autre. Ces pierres semblent avoir été entreposées à cet endroit en vue d'une utilisation future. Outre ces observations de terrain, il faut souligner la présence, dans l'assemblage des objets-témoins du site, de certains outils associés à la taille de la pierre: un ciseau à froid, une barre à mine et une tige présentant des traces de percussion à l'une de ses extrémités.

28 Quatre tranchées ont été pratiquées à l'extérieur des vestiges et une tranchée à l'intérieur.

29 Outre quatre tessons d'une tasse en terre cuite fine blanche, avec décor à l'éponge bleu et peint vert, la tranchée de construction contenait un bouton en ébonite fabriqué par la *Novelty Rubber Company* située à New Brunswick au New Jersey (U.S.A.). Cette compagnie aurait produit des boutons en ébonite entre 1855 et 1875 (L. Smith-Albert et J. Ford Adams, *A Button Sampler*, 1951, Grammery Publishing Co, N Y; L. Smith-Albert et K. Kent, *The Complete Button Book*, 1949, Doubleday and Company Inc, NY).

30 Le reste de l'assemblage archéologique est représenté par les catégories suivantes: céramique (N = 18) 12,95 %; verre (N = 15) 10,79%; matière organique [écofacts] (N = 19) 13,67%; matériau composite (N = 2) 1,43% et par de l'ébonite (N = 1) 0,72%.

31 John Derek Booth, *op. cit.*, 1984, p. 40–41.

AN ENVIRONMENTAL ACTION PLAN FOR BISHOP'S UNIVERSITY

Darren R. Bardati
McGill University

Introduction

Since its founding in 1843, the presence of Bishop's University has been strongly felt on the Town of Lennoxville and the surrounding Eastern Townships community. Bishop's, which shares its campus with Champlain Regional Campus (since 1970), is a community of some 4000 members who use the campus daily, including university administrators, staff, faculty and students (Bardati, 1994a). Bishop's 200-hectare property is a significant part of the local landscape, comprised of a built-up area, a 9-hole Golf Course, a Wildfowl Conservation Area, hay fields, deciduous and coniferous forests, and is bordered by two major Eastern Townships rivers, the St. Francis and the Massawippi (Figure 1).

Over its 150-year history, much has been written about the social and economic impact of Bishop's University on the surrounding community. However, little attention has been placed on the ecological impacts of Bishop's activities on the local and regional environments. The campus contains many offices, classrooms, libraries, research laboratories, recreational and sports facilities, residence halls, food halls, art studios, theatres, roads, parking lots, etc. It consumes large amounts of natural resources: water, energy, food, paper, toxic materials, etc. It also generates different kinds of wastes and pollutants that are released into the atmosphere and water, or are land-filled. With today's increased concern for environmental matters, one must question the University's level of environmental commitment to determine whether there is a need to reform some of its policies and practices, with the goal of making the campus a more environmentally-responsible place.

In 1993, supported by a Federal Government Challenge Grant, a student project was undertaken to assemble environmental

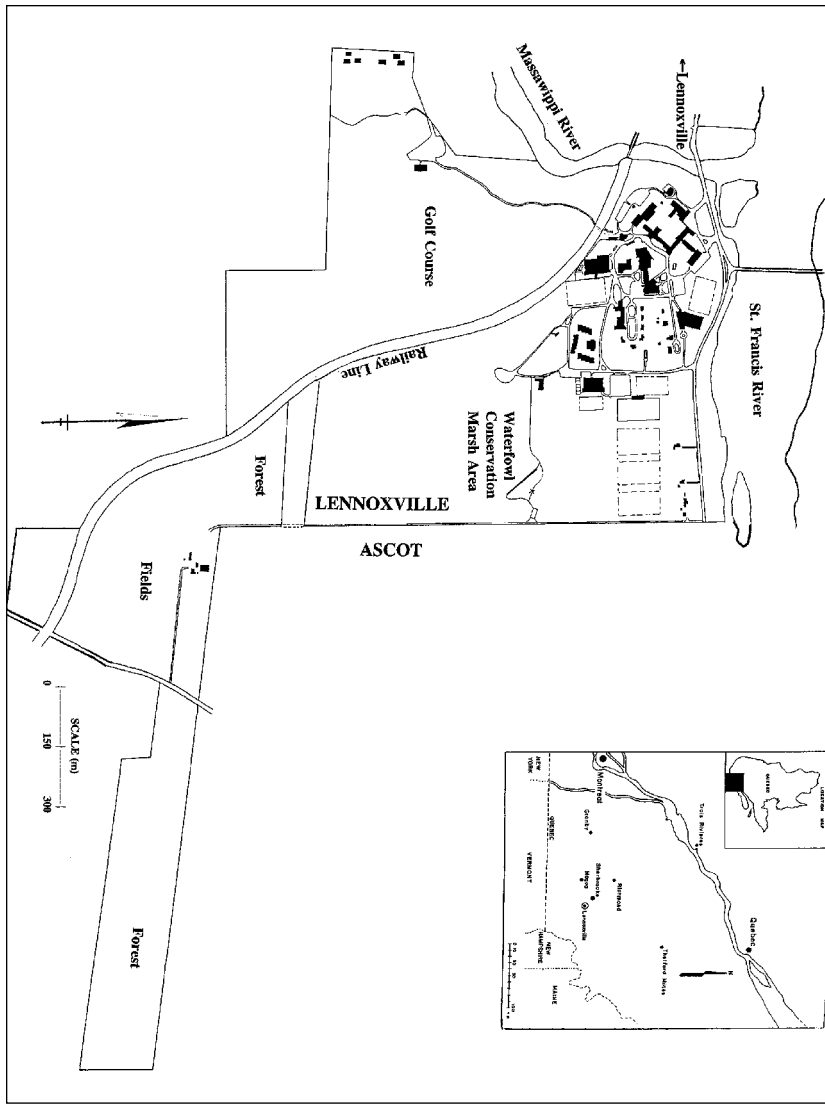

Figure 1
Bishop's University Campus

information dealing with Bishop's ecological impacts and propose solutions to local environmental problems such as waste, pollution, and inefficient use of natural resources. The study resulted in a proposed "Environmental Action Plan for Bishop's University," which is summarized in this paper.

Conceptual Framework

Learning From Industry and Government: The "Environmental Audit"

In response to the increasing stringency in environmental regulations and risk of liability over the last twenty years, the business world has developed the "environmental audit," a planning and management tool to ensure compliance to environmental regulations (A.D. Little, 1989). Somewhat similar to the financial audit, the environmental audit focuses on a particular facility's environmental performance rather than its financial statements. The first environmental audit was performed in 1977 by a US chemical company, when a court order forced the company managers to disclose for potential investors the present and future costs of complying with environmental regulations (Palmisano, 1989; Doran, 1990).

While it would be too lengthy, in this paper, to describe the details of this new kind of audit, it suffices to mention that, since its creation, it has become the corporate management's evidence of "green consciousness" and "good corporate citizen" efforts (Madras, 1992, 20; Deland, 1982, 509a). In fact, environmental auditing has become a common practice among large entities: international organizations (CH2M Hill, 1993; Cahill, 1992), industrial corporations (Reed, 1992; A.D. Little, 1989; Ferguson, 1989; Thurman, 1989), governmental departments and agencies (Downs and Kavanaught, 1992; Currie, 1992; House of Commons, 1990; Environmental Protection Agency, 1986), airports (Aéroports de Montréal, 1993) and power utilities (Peel, 1992).

In 1988, the new Canadian Environmental Protection Act stated that Canada "recognizes the power and effectiveness of environmental audits as a management tool for companies and government agencies, and intends to promote their use by industry and others" (Doran, 1990, 20). The Federal Government, in 1990, proceeded to launch a *Green Plan for a Health Environment*, and a full-scale environmental audit of the Parliament Buildings (Government of Canada, 1990).

In recent years, Canada's industrial and governmental sectors have been moving forward in matters of environmental accountability and performance, yet Canada's universities have found themselves lagging behind in these environmental management and planning techniques. The academic community, having in the past accused industrial and governmental managers of disregarding the environment, is now facing the fact that many of its campuses are glaring examples of the same environmental mismanagement (Abbott, 1992). In this academic awakening, there is a growing movement toward "greening the campus" and making the university setting a place of environmental responsibility.

The "Greening the Campus" Movement

There has been a movement among some larger universities, in recent years, toward increased environmental awareness, and reduced ecological impacts of waste, pollution and other environmental negligence. Traditionally associated with 1960s activism, the environmental movement of today attracts people from all age groups and occupations as more people realize the importance of their actions, and the repercussions of these actions on the environment. The US National Wildlife Federation, in its *Campus Year in Review*, reports 225 educational institutions across North America that have begun environmental projects. The projects have a broad range: energy efficiency, waste reduction and recycling, water conservation, food composting, air quality control, etc. Funding for these projects is provided from a variety of sources: government grants, university subsidies, student groups, environmental clubs, and private donations (Cool it!, 1994).

Inevitably, the campus environmental projects that have been successful have involved communication and coordination with University personnel. For example, the University of Waterloo, Ontario's *WATgreen Initiative* provides students, faculty and staff with an opportunity to make a positive contribution to the resolution of environmental problems. Here are some of their results:

1) A 44% reduction in energy use per square metre from 1972 to 1991.
2) A 20% reduction in waste-weight from 1987 to 1993.

These reductions have resulted in significant financial savings for the University of Waterloo (WATgreen, 1993).

With the goal of creating, at Bishop's University, the sorts of positive changes in environmental management seen at other

institutions across North America, this project first aimed at understanding the regulatory framework in which the University was situated.

Bishop's University: The Environmental Context

Bishop's University operates in several layers of federal, provincial, regional and local jurisdictions and a complex environmental regulation context. As an educational institution, it operates directly under the jurisdiction of the Quebec Ministry of Education. While this Ministry oversees educational aspects of the University, it offers no incentives, at present, for the development of programs to promote environmental responsibility and the conversion to "greener" practices. These concerns are the responsibility of the various environmental jurisdictions in which the University is situated.

At the federal level, Bishop's falls under the *Canadian Environmental Protection Act* and *Canada's Green Plan* which ensure that all Canadians are committed to the protection of the environment. Environment Canada has a Regional Director General for Quebec, to oversee environmental affairs in the province. Within Environment Canada, there are also a number of agencies, such as the Environmental Conservation Service and the Environmental Protection Service, each having jurisdictions over various facets of environmental concerns.

At the provincial level, Bishop's environmental affairs fall under the Ministry of Environment and Wildlife, which has several divisions and branches, much like the federal structure. The *Quebec Environmental Quality Act* ensures that the state of the environment in the province is protected.

Bishop's University is situated in the Sherbrooke Municipalité Régionale de Comté (MRC), the Town of Lennoxville and the Municipality of Ascot. Each of these jurisdictions have specific environmental regulations which apply to the Bishop's University campus. All of the built-up part of the campus is in Lennoxville, and shares its water, electricity, sewage, phone, and road networks with the Town. Up to the present, there has been little cooperation between the University and the Town on issues of recycling, snow removal, waste disposal, and other environmental concerns. On the other hand, the past few years has seen an increase in events and clubs which seek to integrate members of both Town and University communities (ie. Friendship Day, Big Buddies). It is hoped that these successes in community-building social activities

will have positive repercussions for the development of Town-University environmental programs.

Methodology

To determine the level of environmental responsibility at Bishop's University, a preliminary campus environmental audit was performed, based on modifications to the industrial model. The three objectives of the study were:

1) To determine who is responsible for environmental affairs.
2) To determine what environmental policies are in effect.
3) To determine what environmental programs are in effect.

Observations

In August and September 1993, several observational tours were conducted on campus to determine the extent of the physical campus facilities and possible areas of environmental concern. All campus buildings, except for private homes, were explored, including several offices, classrooms, science laboratories, computer laboratories, chemical storage spaces, fine arts workshops, equipment rooms, dining halls, residence halls, sport facilities, health clinics, etc. Campus outdoor spaces were also explored: roads, paths, parking lots, sports fields, waste disposal sites and green spaces. After the observations were completed, in early October 1993, it was determined that environmental data, falling in eight categories would be collected:

1) Environmental management system.
2) Waste generation and disposal.
3) Water Use.
4) Energy Consumption.
5) Air Quality.
6) Food Issues.
7) Procurement.
8) Education and research.

Interviews

Due to the nature of the organisation of responsibilities at Bishop's University, it was determined that answers to questions concerning the campus environmental status would be best obtained through a set of structured interviews with University personnel. The University Principal sent out a note to all faculty and staff informing them of the project and confirming his sup-

port for it (Appendix I: Principal's Letter of Support).

Ten interviews with the following key administrative personnel were conducted between November 16 and 24, 1993:

(1) Vice-Principal.
(2) Dean of Natural Sciences.
(3) Dean of Students.
(4) Director of Buildings and Grounds.
(5) Supervisor of Cleaning Services.
(6) Director of Food Services.
(7) Director of Residences.
(8) Director of Printing Office.
(9) Director of Health Clinic.
(10) Director of Sports Clinic.

Student Involvement

In December 1993, student seminars were held on the topic of environmental auditing and the possibility of using the tool as a model for developing an Environmental Action Plan for Bishop's University. Following each seminar were workshops in which students formed small groups and discussed possible environmental problems that Bishop's is facing. These seminars and workshops provided opportunities for student awareness and participation in the project.

Findings

The campus environmental data, collected by means of observations, interviews, and workshops, revealed a substantial amount of quantitative information concerning campus environmental issues, such as solid waste haulage fees, types and quantity of energy used, weight of daily food waste, number of recycling bins, etc. Equally as important, the interviews and workshops permitted the recording of qualitative information concerning the campus environmental management system, general awareness of issues, and opinions concerning any eventual "greening the campus" program development. It would be much too lengthy to include all of the study findings in this paper. Instead, the following is a syntheses of those findings:

Environmental Management System

There is no readily-identifiable, coordinated environmental management system at Bishop's University. Responsibility for

campus environmental issues is relegated to individuals in many departments, yet no one office is responsible to oversee these issues and ensure the environment is being protected. While some environmental projects are in effect, such as the recycling of paper, and a no-smoking campaign, there is no effort to integrate these into a comprehensive campus environmental management strategy. Despite the efforts of the Active Students for the Environment (ASE) Club to provide a place where people can obtain information concerning these issues, it is limited in its ability to proceed with any "greening" program, since it requires the proper permissions from a large number of uncoordinated departments within the University. Any effort at creating a systematic framework for the development of environmental policies and practices are constrained by the University's existing organizational structure.

Waste Generation and Disposal

There are 35 recycling barrels located on campus, and each office and residence room should contain a small recycle bin. Unfortunately, the Department of Buildings and Grounds is constantly plagued with having to remind staff, faculty and students on the proper use of these barrels and bins. The paper in these recycling containers is hauled by a pulp and paper company free of charge. Some medical waste from the Health Clinic is returned to hospitals for handling. The rest of the solid waste generated on campus is land-filled off-campus, hauled away on contract. While the total annual weight of solid waste is unknown, an estimated 1000 lbs per day (approximately 15 barrels) of food waste is hauled. There is no comprehensive program to recycle glass, plastics, or metal. While sewage is piped off-campus through the Town of Lennoxville network, it is unclear which percentage of campus sewage is treated. Finally, some concern has been expressed about the runoff from fields, where fertilizer and herbicides are used, and roads and pathways, where salt is used in winter, which flows directly into the two rivers adjacent to the university.

Water Use

The water used on campus is provided by the Town of Lennoxville and is not metered or tested on campus. While low-flow shower heads have been placed in the Sports Complex, and

low-flow toilets in the newly renovated buildings (McGreer, Johnson basement), retrofitting the residences and older buildings with energy and water saving devices is considered too costly.

Energy Consumption

Regular campus audits are conducted, and energy consumption at Bishop's has been reduced 17% from 1987 to 1993, representing a cost avoidance of almost $700 000.00 These savings are attributed to a government-enforced energy conversion program. The cost of retrofitting old buildings with new energy-efficient windows and insulation, as well as installation of light-switch timers, is deemed to be too expensive.

Air Quality

There is a campus-wide no smoking policy in effect since January 1, 1994. There are several fume hoods in the science laboratories and the Fine Arts Building which need verification, since air quality has been a problem in some areas. Here is evidence that responsible environmental management leads to a healthy environment. However, as of yet, no studies have been conducted concerning asbestos, radon, and Chlorofluorocarbons (CFCs), and other toxic chemicals at Bishop's.

Food Issues

There are five eating places on campus (Dewhurst, Pub, Faculty Lounge, Bus Stop, Quiet Bar). All food waste is hauled away, which represents a substantial portion of the total haulage fees. A recent proposal to examine the feasibility of developing a composting conversion program was received unfavourably, presumably because of the program's start-up cost, despite its promised long-term savings.

Procurement

There is no policy or program concerning the procurement of environmentally-sensitive products. Purchasing is done primarily based on cost and convenience, rather than environmental responsibility. Approximately twenty five tons (30 millions sheets) of high-grade, non-recycled, white paper is purchased annually through the Printing Office alone. Figures are not available for the other purchasing offices (Bookstore, Library, Student Representative Council, etc).

Education and Research

According to the Vice Principal and the Research and Grants Office, there are no research projects under way at Bishop's dealing with waste reduction, air quality, energy efficiency, water conservation, procurement or environmental education. No efforts are being made to secure funding from outside agencies to be put into the promotion of "greener" practices. While some University courses deal, to some extent, with environmental issues (mostly in Biology and Geography), there is no campus-wide environmental education program to promote awareness and responsibility.

Student Feed-Back

Most of the students who participated in the workshops expressed an interest in becoming involved in the implementation of an Environmental Action Plan. Their comments stressed the need for better indication of the location of recycling bins, the establishment of a comprehensive recycling program which includes glass, metal, plastics and paper. Finally, they expressed the need for a campus-wide environmental education and awareness program with a central "Environmental Office" from which to obtain information.

Discussion

The preliminary campus environmental audit demonstrated a weakness in the area of environmental responsibility at Bishop's University. Campus environmental issues are poorly identified, poorly understood and poorly managed. Since there is no office where these issues can be addressed in a comprehensive manner, it is unclear how Bishop's assesses its own environmental performance. While some environmental programs are in place, they are often inadequately advertised and managed, and there has been little "political will" to change the present environmental practices or to develop new policies. Unfortunately, Bishop's existing organizational structure does not make responsible environmental planning and management easy.

Bishop's University is not alone in its relaxed state of environmental management. Other universities and colleges across North America are facing similar problems. However, the 1990s have brought to the academic community both an opportunity and a challenge to repair some of its past negligence.

This study has outlined a significant number of opportunities

for improving the state of the campus environment. As a public institution with educational and research missions, Bishop's has the potential to provide long-lasting environmental solutions and lead the way toward improvement, having an enormous impact on how students will live and work in the future. The lessons they learn at Bishop's, they take with them after graduation.

Recommendations

In April 1994, the following list of fifteen recommendations was submitted to the University Principal and other key administrators, along with a summary of a proposed "Environmental Action Plan" (Bardati 1994b). These recommendations are possible steps toward improving Bishop's environmental accountability:

Recommendation #1:
Environmental Committee and Coordinator

An "Environmental Committee" comprised of students, faculty, staff and administrators should be set up to examine campus environmental affairs. This Committee should meet regularly to discuss target areas and outline environmental goals and objectives for campus environmental improvement. The Committee would designate an "Environmental Coordinator" to chair the Environmental Committee and should report directly to the University Principal.

Recommendation #2:
Environmental Office

An office in the Student Union Building should be designated "Environmental Office" where the Environmental Coordinator would be accessible for consultation and Environmental Committee meetings would take place. The Office should also be the place where environmental data could be centralized and made accessible to the public.

Recommendation #3:
Environmental Policy Statement

The Environmental Committee should be authorized to draft an "Environmental Policy Statement" which would commit Bishop's to specific environmental actions and dates. This Environmental Policy should be signed by the Principal and publicized widely both on-campus and off-campus.

Recommendation #4:
Launching the Environmental Action Plan

The Environmental Committee should design a detailed "Environmental Action Plan" based on the groundwork provided in this project report, with specific actions to be taken and dates of implementation. Launching of the Environmental Action Plan should begin with a campus-wide educational campaign with a slogan such as "Year of the Environment" or "Greening the Campus" (preferably in the early fall). The local news media (newspapers, television and radio stations) should be contacted. Activities should be initiated to involve the public, both on-campus and off-campus.

Recommendation #5:
Waste Management Policy

The Environmental Committee should design a "Waste Management Policy" which would focus on reducing all types of waste, including: (i) recycling of paper, plastics, glass, and metal; (ii) composting of food waste; (iii) hazardous and medical waste; (iv) sewage and runoff; (v) other wastes. This Waste Management Policy should lead to specific steps to be taken concerning these issues and dates of program implementation.

Recommendation #6:
Waste Reduction/Reuse/Recycling

(a) A full-scale waste stream analysis (garbage analysis) should be a first priority.
(b) The Lug-A-Mug campaign should be expanded to cover all eating facilities and should be better publicized.
(c) The paper recycling program should be expanded and better publicized, especially for offices and residences.
(d) Recycling facilities should be expanded to other materials; plastics, glass, metal, etc.
(e) An inter-office program to promote the reuse of frequently discarded items such as cardboard boxes, manila envelopes, file folders, reverse side of flyers, memos and other office paper can be used a scratch paper.
(f) Inter-office E-mail should be encouraged.
(g) All new photocopiers should be double-sided.
(h) Hazardous waste tracking and inventorying for the entire campus.

(i) Student projects aimed at reducing waste should be encouraged.
(j) Data relating to these waste management programs should be centralized and be made available in the Environmental Office.

Recommendation #7:
Water Conservation

(a) Plumbing retrofit cost-benefit analysis should be conducted.
(b) Water-metering should be investigated.
(c) Water quality should be measured regularly.
(d) A water conservation education program should be initiated.
(e) Student projects dealing with the water conservation studies should be encouraged.
(f) Data relating to these water conservation programs should be centralized and be made available in the Environmental Office.

Recommendation #8:
Energy Conservation

(a) Timers for light switches should be installed.
(b) Retrofitting of windows and insulation should be investigated
(c) An energy conservation education program should be initiated.
(d) Student projects dealing with energy conservation should be encouraged.
(e) Data relating to these energy conservation programs should be centralized and be made available in the Environmental Office.

Recommendation #9:
Air Pollution Reduction

(a) The fume hoods should be verified for proper working order.
(b) Vehicular traffic on campus should be reduced.
(c) A proper monitoring of stationary sources of air pollution should be implemented.
(d) Asbestos insulation should be retrofitted, where necessary.
(e) CFCs in discarded refrigeration appliances should be recycled.
(f) Radon emissions from building materials should be investigated.

(g) Student projects dealing with air pollution reduction should be encouraged.
(h) Data relating to these air pollution reduction programs should be centralized and be made available in the Environmental Office.

Recommendation #10:
"Greening" the Food Places

(a) Food waste should be composted.
(b) Condiments (salt, pepper, ketchup, etc) should not be served in individual wrappers.
(c) Porcelain-ware should be favoured over disposable plastics and styrofoam.
(d) The "all-you-can-eat" policy should be changed to a debit card system.
(e) Organically-grown foods should be purchased.
(f) A food waste reduction education program should be initiated.
(g) Student projects dealing with "greening the food places" should be encouraged.
(h) Data relating to these "greening the food places" should be centralized and be made available in the Environmental Office.

Recommendation #11:
Purchasing "Green" Products

(a) A Procurement Policy should be developed.
(b) Purchase of recycled paper should be investigated.
(c) Purchase of bio-degradable plastics should be investigated.
(d) Alternatives to toxic cleaning substances should be investigated.
(e) Energy-efficient appliances should be purchased.
(f) Alternatives to fertilizer, herbicide and pesticide use should be investigated.
(g) A "Buy Recycled" Program, run by students (in DooLittles, perhaps), offering products made from recycled materials: note paper, greeting cards, gift wrapping paper, cosmetics, T-shirts, etc) should be implemented.
(h) Student projects dealing with procurement should be encouraged.
(i) Data relating to these procurement issues should be central-

ized and be made available in the Environmental Office.

Recommendation #12:
Environmental Education and Research

(a) Develop a campus-wide environmental education program to be launched with the Environmental Action Plan.
(b) Promote faculty-led student projects concerning campus environmental issues.
(c) Integrate campus environmental research in classes.
(d) Develop a program to identify funding agencies that provide grants for conversion to "greener" practices.
(e) Data relating to environmental education and research should be centralized and be made available in the Environment office.

Recommendation #13:
Campus Environmental Database and Network

(a) Develop a computer database for campus environmental issues.
(b) Student projects in designing and maintaining this database should be encouraged.
(c) This campus environmental database should be located in the Environmental Office and accessible on the Bishop's University Computer Network and Internet.

Recommendation #14:
State-of-the-Campus-Environment Reports

(a) Annual State-of-the-Campus-Environment Reports should be written (with information from the environmental database).
(b) Quarterly newsletters about new projects, and updates should be written and distributed throughout the campus.

Recommendation #15:
Conferences and Guest Speakers

(a) Annual Conferences on the Environment should be conducted for educational purposes.
(b) These Conferences should be open to Lennoxville community residents and others.
(c) Guest Speakers should be invited to the Conferences.
(d) These Conferences should be participatory in nature allow-

ing for the sharing of new ideas, technologies and practices in campus environmental management.

Future Implications

In 1993, a preliminary campus environmental audit was performed by a student at Bishop's University to analyze the University's level of environmental commitment. Through observations, interviews and consultation, the study attempted to piece together some campus environmental information. The study confirmed the assumptions that the University is lagging behind industry and government in environmental performance controls, and urgently needs to move in the right direction.

Since April 1994, when the Environmental Action Plan summary report was submitted to various key administrators at Bishop's, some important steps have been taken to address these problems and lead the University toward environmental improvement. The Principal has tabled the report with the Executive Committee of Bishop's University Corporation, as well as the Building Committee. It is hoped that, as these recommendations go through the proper channels, the decision will soon be made to implement a full-scale Environmental Action Plan which would involve changes in the campus environmental management system, the formation of a campus Environmental Committee, the development of a campus Environmental Policy Statement, and concrete community actions toward improving the state of the campus environment and promoting environmental responsibility.

RESUME

Depuis sa fondation en 1843, l'Université Bishop's a participé activement au développement social et économique des Cantons de l'Est. Aspect moins connu toutefois que celui des impacts des activités universitaires sur l'environnemnent; comment peut-on mesurer la notion de responsabilité environnementale dans les secteurs de production et disposition des déchets, d'utilisation de l'eau, d'emploi des ressources énergétiques, de qualité de l'air, de nourriture, d'approvisionnement, de sensibilisation aux questions écologiques et de recherche? Cet article nous montre comment un étudiant sous-gradué, grâce à une bourse du programme "Défi 93," a conduit une enquête environnementale préliminaire, après avoir modifié le modèle généralement utilisé par l'industrie et le gouvernement. Avec l'appui du Principal de l'université, il a donc

procédé, en automne 1993, à une série d'entrevues qui lui ont permis d'accumuler ses données fondamentales; sa recherche a mené au développement d'un Plan d'Action Environnemental, accommpagné de recommendations détaillées, présentement à l'étude par les autorités universitaires de Bishop's.

Appendix I

Principal's Letter of Support

UNIVERSITÉ
BISHOP'S
UNIVERSITY

October 27, 1993

To All Faculty and Staff:

As part of a Geography Honours Thesis course, Mr. Darren Bardati will be collecting various types of data and information needed in assembling an Environmental Action Plan for Bishop's University. I have read the initial proposal and I am pleased to support this initiative.

As part of the collection of environmental data, Mr. Bardati may be contacting you for your input. I would ask all members of the Bishop's faculty and staff to assist him in his work. Ultimately, Mr. Bardati will be reporting his findings to me and the members of the Corporation. I believe that the Bishop's environment will benefit from this study - and even save some money along the way.

This study is under the direct supervision of Dr. Michael Fox, Department of Geography. He would be pleased to answer any questions you might have about this project. I would also like to mention that Mr. Bardati was a recipient of a Challenge '93 Grant aimed at environmental Auditing at various campuses across North America. A copy of this report is available from Dr. Fox.

I know we all wish Mr. Bardati every success in putting this Action Plan together, and we look forward to his results.

Sincerely,

Dr. H.M. Scott,

Lennoxville, Quebec, Canada J1M 1Z7
Tel: (819) 822-9600 Fax: (819) 822-9661

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L'ATELIER-LABORATOIRE DE MONIQUE VOYER OU L'IMAGINATION MATÉRIELLE À L'ŒUVRE DANS L'ŒUVRE*

Françoise Le Gris
Université du Québec à Montréal

> "Dans la forêt, il y a des chemins qui, le plus souvent encombrés de broussailles, s'arrêtent soudain dans le non-frayé.
>
> On les appelle Holzwege.
>
> Chacun suit son propre chemin, mais dans la même forêt. Souvent, il semble que l'un ressemble à l'autre. Mais ce n'est qu'une apparence.
>
> Bûcherons et forestiers s'y connaissent en chemins. Ils savent ce que veut dire: être sur un Holzweg, sur un chemin qui ne mène nulle part."[1]
>
> — *Martin Heidegger*

L'atelier-laboratoire

Le thème de l'atelier-laboratoire sous-entend un art expérimental, où la recherche, la fabrication et le tâtonnement ont une place privilégiée. Tout art comporte ces dimensions, mais certaines œuvres se caractérisent davantage par un aspect matériel, matiériste, plutôt que conceptuel et idéel. C'est le cas de Voyer dont l'art depuis quarante ans se joue au sein d'une imagination de la matière, d'une *rêverie de la matière*, aurait dit Bachelard.

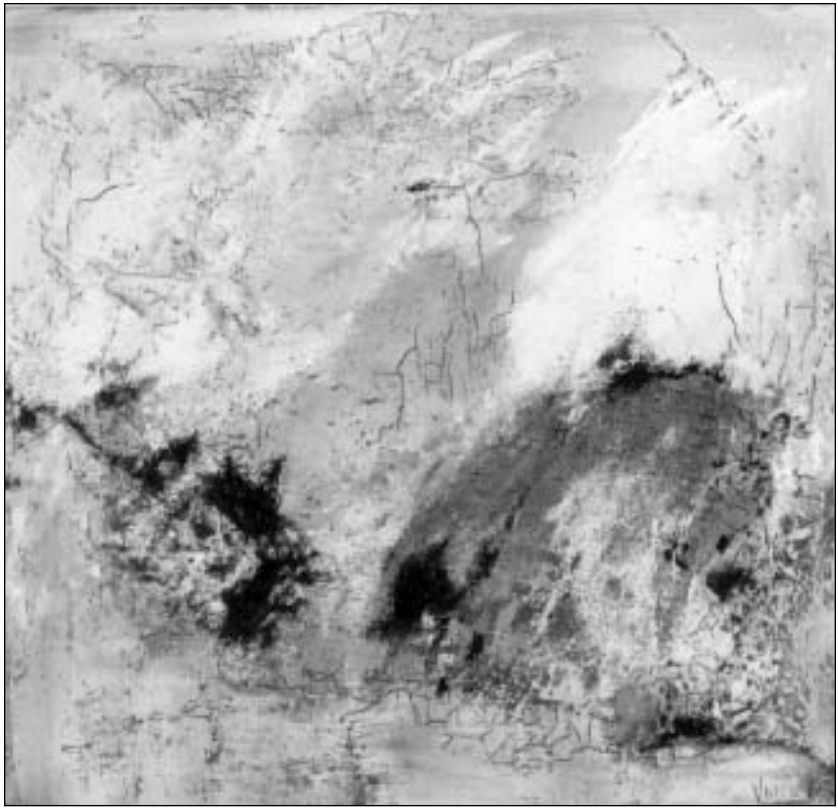
L'atelier de l'artiste d'aujourd'hui est souvent assimilé non plus à un lieu physique localisé, mais à l'interface de l'univers tout entier et de lieux où s'élaborent des images divergeantes, multiples, difractées. S'affirme donc cette dimension métaphysique de l'atelier, son ubiquité, lieu des songes et de la gestation, de la réalisation des œuvres, tout autant que lieu d'intervention performative. Ses limites virtuelles sont désormais aux dimensions de l'univers. Par ailleurs, concrètement, le lieu physique où l'artiste travaille est souvent déterminant dans la composition de son art, dans le choix des matériaux, du faire

spécifique, des formats, des images. Ainsi, il nous semble intéressant de situer le lieu où Voyer s'occupe à poursuivre son œuvre, du moins depuis les quinze dernières années.

N'est-il pas significatif de situer l'atelier de Voyer, attenant à sa maison de Magog, entre cuisine et forêt. Non pas certes pour des raisons féministes faussement complaisantes, ni pour des raisons prosaïques de mise en contexte. Bien plutôt pour articuler deux pôles dans l'élaboration de cet œuvre. Qu'en est-il alors de ce lieu situé entre l'espace de la "recette," où règne l'art culinaire commandé par le savoir-faire, le comment faire, exigeant mesure, précision dans les matériaux utilisés, ordre et succession des opérations dans le temps requis. En rappellant les ouvrages de Carlos Castaneda, les enseignements du sorcier yaki ne portent-ils pas justement sur l'apprentissage du savoir-faire, du comment faire, réglé par la précision et l'exactitude des opérations, de la mesure des quantités utilisées dans l'art de toute sorcellerie, alchimie, médecine et traitement des âmes autant que des corps. Importance de suivre la recette, donc. La cuisine, c'est aussi le lieu où sont transmutées les matières, et tel l'atelier, nous ne dénierons pas ce côté alchimique de la cuisine. L'art n'en serait pas exempt.

D'autre part, la forêt, cette source inextinguible de vie, de matériaux, d'inspiration, d'œuvres de non-art, comporte cette idée d'un infini et sa diversité propre. Heidegger y décrit des chemins de bois, qui s'enfoncent vers des fouillis, où chacun doit tracer son propre chemin. L'opacité de la forêt, possible de mille chemins, demande à chacun de tracer sa propre voie, pour sortir des "chemins qui ne mènent nulle part."[2] L'autre face de l'art serait donc définie par cette exigence du défrichement et du déchiffrement.

Ainsi, entre cuisine et forêt, entre le faire réglé et les matériaux profus, se situe l'imaginaire, ou plutôt cette imagination active qui rêve la matière, entendue de façon toute bachelardienne. Quant à Heidegger, il avance, dans "L'origine de l'œuvre d'art": "Ce qui donne aux choses leur consistance et leur drue fermeté, en provoquant ainsi, du même coup la qualité de leur afflux sensible, cela, la couleur, la sonorité, la dureté, la massivité, c'est leur matérialité."[3] Il ajoute plus loin, insistant sur l'importance et le caractère de chose dans l'œuvre d'art: "Le côté chose de l'œuvre, c'est manifestement la matière en laquelle elle consiste. La matière, c'est le support et le champ d'action de la création artistique."[4] Ce dont nous voulons rendre compte ici, c'est justement cet aspect matiériste, cette imagination agie par la



Photographe : François Lafrance

"Joie de vivre," huile sur tole et sable, 65,5x68,3cm, 1961, collection de l'Université de Sherbrooke.

matière dans l'œuvre de Voyer. Car en effet, croyons-nous, c'est l'œuvre entier qui en est traversé. On ne peut trop rappeller à quel point Voyer, de façon récurrente, introduit et réintroduit dans ses œuvres des matériaux divers, les façonnant, les triturant, les amalgamant afin qu'ils participent du sens de l'œuvre tout en affirmant leur expressivité première. Cette tendance matiériste ne la quittera guère puisque ses œuvres actuelles en sont encore empreintes.

La pulpe de la peinture

Mais bien avant l'atelier de Magog, évoquons les œuvres de jeunesse, issues d'une tradition figurative, et plus particulièrement celles élaborées pendant son séjour en Europe, en 1953–1954. Dans le Paris des années d'après-guerre, si Voyer se nourrit de tout ce qu'elle observe, c'est-à-dire des courants récents tels le tachisme,

l'informel, elle s'en tient toujours à des tableaux figuratifs, très travaillés dans leur facture. Comparons ainsi trois tableaux dégageant une ambiance toute expressionniste: il s'agit de "Maison à Gentilly,"[5] "Rue de Paris,"[6] "Rue St-Julien-le-Pauvre."[7] On y voit "des scènes de rues à la Vlaminck, des ambiances sombres, des perspectives fuyantes, tranchées, des pâtes texturées, des couleurs salies qui dominent", toutes qualités reconnues par Rodolphe de Repentigny.[8] En effet, une grande simplicité constructive se remarque malgré les effets expressifs de la matière des "vieux murs" de maisons, facades, que Voyer rend avec des nuances subtiles, témoignant d'un intérêt, pour ne pas dire d'une véritable fascination pour ces couches multiples que les siècles ont superposées les unes sur les autres. Ces murs palimpsestes, en effet, comportent autant de taches, salissures, graphismes, accidents que le peintre peut en imaginer, c'est pourquoi ils sont privilégiés dans le tableau en tant que surface d'inscription, tout autant que matière à rêver et à peindre. La facture toute en variations et nuances, les textures différentes et emmêlées de la couche, parfois épaisse, parfois mince, n'en finissent pas de produire des effets sombres, obscurs, où toute une vie fait néanmoins signe. Les mélanges de la pâte picturale et les surfaces ainsi recouvertes sont tout proches d'une imagination romantique.

Ces œuvres empreintes de mélancolie donnent prise à l'expérience directe de la dimension existentielle et affective de la peinture. Ainsi, rappellons comment René Passeron rend compte de cette capacité du pictural à faire sens. Il écrit:

> "Si le pictural est capable de fasciner, c'est qu'il est porteur de thèmes affectifs. Le beau, le sublime, le tragique, la grâce... ne sont rien que des mots vides, s'ils ne sont éprouvés, comme des coups de foudre, devant ce que l'œuvre porte en elle de plus intime. Le pictural n'est donc pas un territoire confus [...]. Joie de la fête, volupté, violences de toutes sortes, spleen, nausée, calme et sérénité, tristesse, affliction, vertige funèbre, tous les états affectifs qualifiables dans le répertoire des sentiments peuvent être suggérés par lui, en dépit, parfois, d'une figuration qu'il trahit."[9]

Une fois franchi le passage vers la non-figuration, l'attention aux valeurs tactiles et matérielles de la peinture va en s'accentuant, le sujet n'étant plus retenu par le prétexte figuratif ou narratif, mais au contraire, réfugié dans la matérialité même du tableau, son objectalité, sa capacité à faire sens, à émouvoir, à

Photographe : François Lafrance

"Pierres sonores," eau-forte, 30,5x30,5cm, 1990, collection de l'artiste.

toucher en dehors de toute allégorie ou histoire. La production de 1960, montrée à la Galerie Agnès Lefort, témoigne de cet approfondissement du travail des éléments matériels de la peinture rehaussés par la couleur. Jean Sarrazin en rend compte ainsi:

> "Monique Voyer a des couleurs froides et fortes, non seulement dans les blancs, qu'elle travaille avec beaucoup d'expérience; mais elle sait très légèrement nuancer sa matière. Elle a le secret de certains blancs gris, blancs verdâtres, où la pâte prend un relief vivant. J'aime également les teintes de goémon, de vert-de-gris, de salpêtre, dont elle fait la tache principale, presque le fond, de certaines de ses toiles, le tout souvent électrisé, secoué par de dynamiques touches de rouge, de feu auxquelles Monique Voyer sait donner un éclat particulier, une présence obsédante au milieu de tant de blancheur.[10]

La capacité expressive de la matière picturale et le traitement qu'en fait Voyer oriente la perception des œuvres et les commentaires vers la saisie de formes/forces de la nature, permettant d'associer les composantes du tableau aux éléments et aux formes naturelles.

> "Floraison sous-marine" est une sorte d'aquarium dans lequel un Niagara saisi par les frimas laisserait sourdre des couleurs d'enfer. "Eveil du rivage" est quelque oiseau-racine, épave blessée, vibrant encore au bord d'un océan de neige, d'un infini de poudrerie, "Jaillissure" est une houle surgissant d'une immensité plombée pour rejoindre la fusion du soleil."[11]

Dorothy Pfeiffer est particulièrement sensible aux nuances colorées subtilement amalgamées, qu'elle définit comme l'essence onirique même de cette joyeuse imagination poétique. On croirait lire le *Traité de la peinture* de Léonard de Vinci à la façon dont elle décrit la subtilité des ambiances naturelles ou cosmiques qui s'y déploient.

> Sensitively attuned to intangibles of air and of sunlight, her interpretative work veers somewhat towards that of the earlier Japanese.
>
> From several of Miss Voyer's strongly feminine painting seems to come the sensation that daylight and fresh air invigorate the room. Other works appear to suggest sun-drenched fog and sea-spray. […]
>
> It is interesting to follow the definite evolution of expression and technique, from Miss Voyer's earlier and somewhat derivative- although never hesitant, work, to its present individual and enchanting expression of atmospheric space and nature.
>
> The latter (sic) qualities may easily be observed, for instance, in her larger painting, "Calao." The textural effect of this upward-rising expression, has been attained by the use of sand which has been rubbed into a foundation of flake-white paint, and over which have been laid soaring dashes of transparent color.
>
> Painted in deeper and more dramatic tones, "Eveil du Rivage" evokes the isolation of a beach in fog. In the foreground, can be perceived a solid stump of driftwood. / Several of Monique Voyer's vigorous and colorful, yet always floating and rhythmical (sic) designs, in gouache, evoke the sensation of hearing the wind in the trees, or of listening to far-away, symphonic music."[12]

Photographe : François Lafrance

L'artiste dans son atelier de Magog, juillet 1994.

De cette époque, la qualité des fonds blancs des tableaux sur lesquels surgissent les événements plastiques appelle spontanément le spectateur à les constituer en écran de projection. N'est-il pas intéressant de voir comment se développe ainsi la métaphorisation de toute figuration, dont la définition ultime serait le rapport d'une forme sur un fond. C'est ainsi que, dans ces œuvres non-figuratives, autant de descriptions surgissent, faisant références aux éléments de la nature, alors même que toute figure, toute forme naturalistes en sont bannies. "Mais chaque fois les blancs de Monique Voyer nous obsèdent, nous assimilent, nous diluent, nous saisissent, pour nous tenir en suspens dans une immensité de neige, dont elle sait faire surgir de brusques failles écarlates de soudaines zones de bronze."[13] Ainsi s'élabore la problématique du signe pictural et sa capacité à faire image en dehors de toute volonté figurative. C'est donc dans l'expérience de la non-figuration que s'allient, dans un même élan lyrique, les étonnements de la matière, l'imagination qui la forme, l'élabore, la pétrit et le monde émotionnel que l'artiste et le spectateur sont appellés à partager. Voyer explique alors: "Mon expression tend vers le contrôle et la fixation de mes émotions, de mes sentiments, de mes états d'âme, de mes débats. J'accorde

beaucoup d'importance à la matière même, à la texture.[14] Mentionnons à titre d'exemples "Prométhée"[15] (1961) et "Agrotide"[16] (1961) où l'on reconnaît, dans l'une l'aspect tellurique de la surface ensablée, dans l'autre le contraste ardent du rouge sur blanc.

Dans ce sens, Voyer affirme son allégeance à l'automatisme dont le programme valorise l'authenticité, l'exploration des profondeurs de la subjectivité, l'importance du geste et l'expressivité de la matière. Des ajouts de matériaux tels le sable, la jute, emmêlés à la pâte picturale dans nombre d'œuvres des années soixante, ("Faille embrasée"[17]) et soixante-dix, ("Terre brûlante"[18]), introduisent des variations de textures, surfaces tantôt lisses, tantôt rugueuses, tissées ou noueuses, qui affirment ou nient, par endroits, la nature composite du matériau de la peinture. L'aspect organique ou cosmique de ces œuvres appelle une méditation toute empreinte d'images terrestres tout autant que astrales. Guy Robert écrit en effet: "… et souvent de belles nébuleuses nous convient aux rêves sidéraux, aux magiques naissances d'univers; et parfois des méditations soutenues, une contemplation orientale inattendue, …."[19]

Tellurisme et cosmicité

C'est autour de 1962–1963 que se manifeste de plus en plus explicitement l'intérêt matiériste de Voyer et l'insistance qu'elle met d'une part dans l'exploration de sa dimension cosmique, tellurique et aérienne, et d'autre part dans le langage de l'accident. Des tableaux ou gouaches tels "Floraison sous-marine,"[20] "L'oiseau de feu," "Ivresse," accentuent la composition lyrique, tachiste, mouvementée, tout en misant sur la présence de sable, colle et autres matières extra-picturales. Celles-ci intensifient la couche expressive, donnant l'aspect d'écorce, lave, cendres, liquides coagulés dans l'épaisseur même de la pâte. Par endroits, comme dans "Gecko" (1963), "Glaise d'automne" (1963), surgissent des épaisseurs matiéristes fortement élevées en relief. Par ailleurs, des réseaux fins et serrés s'insinuent, résilles qui pénètrent en tons contrastés les couches superposées, ainsi dans "Joie de vivre,"[21] donnant l'impression de craquelures ou de fendillements de la couche picturale.

Voyer se plaît à expérimenter tous ces effets du lisse, du granuleux, du noueux, du tissé, sous la peinture et amalgamée à elle. Les qualités tactiles s'allient à la préoccupaton spatiale. Dans des œuvres telle "Eruption" (1963), l'espace optique s'adressant à

l'œil, cède entièrement la place à l'espace haptique, appellant la réponse du corps entier. Dorothy Pfeiffer remarque, en 1963:

> "However, the longer one studies her abstractions apparently based upon Canadian flora and landscape, the deeper one is drawn into their ever-receding, luminous depths. […]
>
> Many of her works in oils and gouaches have been built up in an almost sculptural manner, with sand and gesso. Her paintings have a sensuous quality one longs to touch. […]"[22]

Jusqu'en 1965, Voyer expérimente ainsi les qualités de la matière, ses contraintes, de même qu'une gestualité ici plus spontanée, là plus réfléchie, presque pétrifiée, qui repose et s'endort dans la matière, à la manière de "Gecko" (1963), Chant du coq" (1963), "Lunaire" (1964). Les œuvres peintes de Voyer, dans cette première moitié des années soixante, justifient largement ce que René Passeron entend par

> "… une puissance propre du pictural (la pulpe de la peinture, quel qu'en soit le goût), liée à ce qui, dans toute émotion qualifiable, ne peut être appelé que secousse, ou choc, et fascination. Ce qu'il y a d'émotionnel en toute émotion particulière et thématisée. Ce que Bergson appelait un 'ébranlement du moi-profond.'"[23]

La poursuite de cette exploration d'une gestuelle et d'une matériologie soutenues par un fort sens du colorisme s'effectue tout au cours des années soixante. La troisième exposition de Voyer chez Agnès Lefort,[24] en 1965, se déroule en duo avec le sculpteur Yves Trudeau, sous le signe du cosmos et de la lumière. Les impressions que donnent les tableaux de paysages abstraits, d'une indéniable concrétude, entraînent toute une métaphorisation cosmique et astrale.

> "Avec Monique Voyer, nous sommes baignés de lumière. Tous ses titres parlent du temps et de la lumière. On dirait une chambre noire habile à capter des corps naissant en pleine clarté. Les formes n'y sont pas encore définies, mais la densité, la direction, l'énergie nous apparaissent, comme les énigmes que proposent les cieux à l'astronome.
>
> […] *Soleil captif* et *L'Aube*, ce sont des moments du monde. Les formes naissantes sont en suspens dans des espaces extraterrestres. Ailleurs, la nébuleuse a pris forme: des mouvements se croisent; on prend conscience de l'horizontal et du vertical. Tels semblent *Paysage de lumière* et *Danseur dans la Lune*.

> Cette poussière d'astres, ces galaxies en gestation, ce *Passage de lumière*, cette *Nuit givrée*, ces écrans gigantesques, ces nuages flottant entre les mondes, je me demande s'ils ne sont pas la peinture même."[25]

C'est ainsi que par des moyens tels que l'emploi de substances diverses mêlées à la pâte picturale, des variations de facture et de texture, l'alternance de l'épaisseur et de la minceur, Voyer s'emploie à donner un autre visage à la peinture, celui que Paul Gladu dénomme l'INCONNU, et Borduas le COSMIQUE.[26] Le commentaire élaboré à la même époque par Robert Ayre est, en effet, entièrement traversé par l'allusion cosmique.

> "Mlle Voyer's intimate and intense art is founded on earth and sky. "Bleu Hivernal" is a wintry landscape, the fathomless blue of "Nuit Marine" and the yellow of "Soleil captif" are the essences of night and day. But she is concentrated rather than expansive. Her colors and textures are of the earth, studied with a close and prolonged gaze, and she often finds that the best way to realize them is to glue ravelled fabrics to her canvas and paint over them. She may call a painting "Vers un (sic) autre planète" and it may evoke the dry seas and the craters of the moon, but it also recalls the fungus on the tree and the lichen on the rock. It is William Blake all over again."[27]

Les qualités visionnaires ou hallucinatoires des œuvres, proches d'un esprit surréalisant scrutant la matière et son expressivité propre, y détectant un "charnier de signes," sont largement commentées par la critique d'alors. Voilà sans doute ce qu'entend Louise Desnoyers en écrivant: "L'abstraction a tellement de force qu'elle est presque figurative."[28] Ainsi, l'imagination matérielle en jeu dans l'art de Voyer permet de saisir comme figuratives des œuvres qui ne s'emploient à aucune figuration, ni représentation d'objet reconnaissable en tant que tel. C'est dire que ces œuvres permettent de mettre en action la fantasmatique propre au spectateur de l'œuvre, tout autant que celle de l'artiste engagée dans la création.

Par ailleurs, une série de tableaux, produits entre 1965 et 1972, exploite le schème structural d'un nœud/astre central, autour duquel se déploient de larges aires de couleurs uniformes, brossées de larges coups de pinceau, ou travaillées à la spatule, avec coulisses. Citons par exemples "Concentration", "Nuit endiablée", "Prélude bleu," "L'aube infernale," "Promeneur de nuit." Par ailleurs, "Mur au soleil," et "Crépuscule bleu," compositions en

hauteur à la verticale, sont quant à elles, plus resserrées par des frontières latérales enfermant la partie centrale, où le motif du nœud/astre s'impose avec prégnance. Guy Robert en tire une conclusion: "… il ne serait pas étonnant de voir l'œuvre de Monique Voyer déboucher sur une figuration nettement avouée et qui émerge graduellement des matières nébuleuses de ses tableaux du début des années soixante, à travers plusieurs périodes ponctuées de paysages abstraits et de plus en plus envahies par des hymnes à la lumière et à sa source ensoleillée."[29]

Cette préoccupation formelle/structurelle, augmentée de ce thème épisodique dans l'œuvre de Voyer, nous rappelle comment Gaston Bachelard définit ce double oculaire entre l'homme et le monde. "Le rêveur devant une telle image est alors en état d'imagination ouverte."[30] Un principe d'inversion permet cette réflexion orientée dans les deux sens: "Innombrables sont chez les poètes cosmiques les métaphores qui nous disent que le soleil est un œil ouvert sur le monde. Avec une conviction singulière l'imagination affirme que ce qui illumine voit. La lumière voit."[31] il s'agit donc ici d'un œil-paysage, mais d'autant plus sidérant qu'il s'agit de paysages abstraits, qui rendent plus forte cette recherche de la lumière, sorte de quête de la voyance, ou peut-être de l'illumination.

Dans une série d'acryliques et collages de 1975–1976, on constate un déploiement de figures surréalisantes apparaissant au cœur même des textures nuancées et fines des algues collées. Dans "Je," "Lueur d'ombre," les compositions alternent entre un surréalisme semi-abstrait et un art informel, privilégiant le langage de la tache et les effets de l'accident. Cette qualité de voyance s'affirme dans un dépaysement, sorte de détournement de la matière et ses textures/surfaces, qui les rendent à l'univers poétique. Relisons à ce sujet Michèle Drouin:

> […] et la matière et les matériaux y sont interrogés pour leur puissance à déterminer un univers émotionnel cohérent. Ce sont ici les procédés du collage et de l'acrylique qui rendent possible l'apparition des textures et des coloris nuancés, lesquels déclenchent à leur tour ces rêveries de la terre chères à Bachelard. Ces images nous ouvrent à une expérience esthétique, à la fois sensuelle et spirituelle, du monde végétal et minéral, celui qu'on peut facilement ne pas voir si jamais on ne se promène dans les bois ou sur les plages les yeux rivés au sol: mousses mouillées, filets d'eau, transparences, cailloux brillants, coquillages enfouis, roches veinées, champignons éphémères, neiges fondantes, sables envahissants."[32]

Par ailleurs, dans une série de petits formats contemporains des collages se déploie toute la maturité de l'art de Voyer dans un esprit clairement informel: dilution de la forme par taches et coulées, glissement aléatoire des liquides et précipitation, superposition et mélange trouble des couleurs, les effets du hasard empêchant toute fixité. C'est l'emprise de la matière liquide livrée aux pigments qui s'éclaircissent ou se densifient. "Entravé par la vie"[33] (1975), "Rêve obscur"[34] (1975), et plusieurs autres œuvres participent de ce paysagisme abstrait ou encore imaginaire, où se lisent des vallées inconnues: "[…] tantôt graines d'astres ou nébuleuses spirales, tantôt valonnements voluptueux. Chez Voyer, la nature n'est jamais loin, et on devine la forêt derrière son regard."[35]

De 1978 à 1981, on remarque de nombreuses œuvres sur papier, des huiles ou acryliques sur toiles, où des effets nouveaux apparaissent. "La neige ronronne" (1978) ménage des espaces inédits par des effets de textures et matières microcosmiques. Des reliefs gaufrés et appliqués sont introduits dans "Nuit ailée" (1980) et "Une porte et un soupir" (1980). Des petits signes d'allure hiéroglyphique s'introduisent, par endroits, témoins d'un intérêt nouveau pour l'inscription d'écritures, de graphies, ainsi dans "Heure bleue" (1981). Les fonds maintiennent leur blancheur quasi homogène pour mieux permettre l'inscription et la saisie des autres éléments/événements.

Estampes

Avec l'estampe, l'imagination matérielle s'adapte, s'inscrivant avec des exigences toutes autres commandées par le matériau. Bachelard écrit:

> "Avec quelle vigueur et avec quelle netteté le graveur retrouve la préhistoire de la main! Du premier trait sur la pierre des cavernes au monde gravé sur le cuivre, on le sent véridique et prophète. Son métier est vrai parce qu'il est énergique, parce qu'il est au contact de la matière réelle et forte."[36]

Si Voyer s'adonne plus à l'estampe qu'à la gravure en tant que telle, il n'en demeure pas moins qu'elle sait éprouver "le grand domaine de rêve qu'une plaine de cuivre!"[37] Bachelard fait aussi remarquer que, pour le graveur, "la matière existe tout de suite sous sa main œuvrante. Elle est pierre, ardoise, bois, cuivre, zinc. Le papier lui-même, avec son grain, avec sa fibre, provoque la main rêveuse pour une rivalité de la délicatesse […] Le graveur

véritable commence son œuvre dans une rêverie de la volonté."[38]

Faut-il évoquer le retour de Voyer à Magog, à la fin des années soixante-dix, pour comprendre dans sa production d'eaux-fortes l'émergence de séries à thématiques animale, végétale et minérale. En effet, malgré le fait d'une décennie marquée par le retour à la figuration pour de nombreux artistes, Voyer n'opte pas d'emblée pour une nouvelle figuration, puisque la plupart de ses œuvres d'alors demeurent non-figuratives. Mais elle réintroduit des figures de façon toute sporadique, marquée sans doute par une grande proximité à son environnement naturel, forêt, lacs, montagnes, qui constitue cette source infinie d'éléments où s'alimente l'artiste.

Des eaux-fortes à thématique animale, évoquons "La bête du Memphremagog" (1984), "Loup-garou" (1982), toutes deux évocations de légendes populaires. Quant à "Envol"(1989), "Là-haut sur la montagne" (1992), elles célèbrent force, mouvement et grâce de l'oiseau. À l'instar de la dernière, où l'oiseau de proie s'agite en tourbillons, dans "Oiseaux migrateurs" (1990), le titre autant que les formes, lignes, et vifs mouvements inscrits sur la plaque suggèrent ces êtres ailés, mais plus dans des configurations de forces que des figures réelles.

Par ailleurs, l'imaginaire botanique chez Voyer se dessine de même, entre une figuration évocative et des configurations où la métaphore est plus active que la description. Il en est ainsi de "Gerbes folles" (1978), "Falaise (1984), "Racinal" (1985) où finesse et solidité imprègnent "cet herbier intime, au fond de l'inconscient, où les forces douces et lentes de notre vie trouvent des modèles de continuité et de persévérance."[39]

D'autre part, voit-on à côté de cette méditation végétale des rêves de pierre, déjà présents dans les titres "Pierrres sonores" (1990), "Pierres silencieuses" (1985). "Rond-Point" (1978) évoque mur, dalle, ciment où sont inscrits taches et autres signes énigmatiques. "Rituel" (1978) et "Pénombre" (1980) s'apparentent formellement, l'une eau-forte et l'autre photogravure, dans l'attachement à développer ces rondeurs, reliefs à-travers lesquels des lignes se tracent, des fentes s'ouvrent. "Frasiles" (1980) présentifie ces pierres dormantes parcourues de traits, animées en surface d'une écriture secrète et indéchiffrable. "Sol grouillant" est ainsi parcouru de textures étranges qui en fait un rocher quasi mythique. Ces résurgences minérales ne vont pas sans évoquer mythiquement des souvenirs ancestraux et territoriaux de pierres qui parlent et de rochers habités d'âmes.

On ne peut ici faire la somme de toutes les variantes de cette imagination de la matière dans l'œuvre de Voyer, mais on ne pourra passer sous silence les rêveries d'images lacustres dont sont empreintes les eaux-fortes des "Grandes Eaux de l'Estrie." S'il est des œuvres évocatives de la région chère à Voyer, elles sont plus explicites dans l'œuvre gravé. En effet, le livre d'artiste "Les Grandes Eaux de l'Estrie," par ses paysages de lacs et rivières, met en scène ces grandes surfaces d'eau, leur plaine miroitante et les forces qui les agitent en remous, sources, cascades, rivières. L'artiste s'emploie ainsi à faire alterner les surfaces lisses des immensités dormantes et les surfaces striées des forces mouvantes qui les agitent. Les consonnances des textes de Marcel Fortin, construits par une recherche patiente, et les noms abénakis pleins de magiques sonorités, viennent faire écho à ces éclatants reflets des surfaces liquides.

De cet attrait de l'estampe pour Voyer, remarquons l'importance qu'elle accorde à la plaque gravée, qu'elle conserve précieusement même si trouée, à la facon d'un relief de bronze ou cuivre, aux reflets et textures particulièrement chaudes et attrayantes. Les procédés particuliers de morsure et d'empreinte propres à la gravure sont aptes à engendrer de nombreuses variations de parcours, et des cartographies diversement dispersées sur la plaque et sur le papier

Toiles/bois/carton

S'agissant des œuvres récentes, celles réalisées depuis 1988–1989, une autre manière s'élabore où, par le transfert d'images, l'artiste réintroduit dans son œuvre des éléments figuratifs, animaux, personnages, qui ne se trouvaient pas dans les œuvres ayant précédé les gravures. De plus, elle adjoint à ces transferts d'images des objets réels, comme coquillages, ou des matériaux comme le bois et autres végétaux. Ces expériences vont tout à fait dans le sens de son goût du bricolage, et cette fois, l'artiste mélange volontiers éléments naturels et éléments industriels. Pour ces derniers, mentionnons, en particulier, les reproductions d'images et les cartons ondulés, de nature différente mais également présents. Cette fois, Voyer travaille en un même dessein supports et matériaux, les mélangeant et les confondant courramment dans un libre jeu formel et structurel. Peignant sur bois ou sur toile, elle épaissit les supports de cartons ondulés, de bouts de bois, baguettes, fragments de cadres, qui créent par le fait même de nouveaux fonds, de nouvelles textures.

Ces techniques mixtes impliquent mélange de matériaux, hybridité des supports, textures riches et variées, imagerie fragmentaire. La composition, les éléments constructifs de l'espace pictural proches d'une dimension plastique, sculpturale, se situent en continuité par rapport à l'œuvre antérieure, alors que s'accentue la richesse des matériaux dans le sens d'une rutilance, où brillent les ors et les reflets de bronze. Voyer explique, en 1992, lors de l'exposition de ses œuvres au Centre d'art Orford: "La multiplicité des matériaux, le climat intimiste et les traces amènent le visiteur à participer d'emblée à mon imaginaire."

Les tableaux sont souvent rehaussés par des baguettes de bois en relief accentuant la vectorialité des traits de peinture tout en s'y fondant. "L'Antilope," "Le retour d'Artémis," "Diptyque médiéval," travaillent sur le même principe d'apparitions fragmentées d'images dans des zones cernées, alors que les matières picturale et graphique, les reliefs des cartons collés, se déploient tout autour en vagues et remous, nimbés de nuances colorées et texturales.

Le travail sur et avec le bois peint, support ou élément intégré, conduit Voyer à élire, comme objet trouvé, un petit coffret en bois, conçu pour garder le matériel d'artiste. La valeur sentimentale attachée à l'objet, son premier coffret de matériel, puis le côté "boîte de Pandore," machine à rêve et moyen de création que constitue la boîte de couleurs, sont associés aux imageries fantastiques de Bosch, dont elle s'inspire alors dans plusieurs œuvres contemporaines. C'est ainsi que par transferts d'images, collages d'objets trouvés, intégrés aux fonds peints dans des verts bleutés, des orangés, le coffret s'ouvre sur toute une mythologie fantaisiste, sorte de musée imaginaire, qui s'étale sur trois panneaux amovibles et à l'intérieur du coffret. Ce mélange se construit savamment entre les fascinants paysages boschiens et les chasses et cueillettes de Voyer: crânes de petit gibier, branchailles, cailloux figés dans les petits compartiments. Le coffret se présente aussi à la façon d'une vitrine d'objets pétrifiés, comme on les trouve dans les Musées d'histoire naturelle. Objet à fonctionnement hybride, il symbolise à la fois le point de départ et le point d'arrivée de l'œuvre d'art et du Musée, boîte à fabriquer le rêve, et boîte à abriter les œuvres.

Dans ce petit coffret, un crâne de perdrix, des branches, des cailloux sont venus trouver refuge, directement extraits de la forêt qui entoure l'atelier de Voyer, figés à jamais auprès des délires boschiens. Ayant cuisiné la perdrix et fait bonne chaire, Voyer

s'en est retournée à l'atelier, afin de poursuivre son labeur artistique de célébration autant que d'extase, même si parcouru de portes secrètes, qui cachent autant de mystères existentiels, et qui s'ouvriront ou peut-être resteront closes, car…

ABSTRACT

The theme of the studio/laboratory underlies a form of experimental art, where research, fabrication, trial and error are commonplace. All forms of art are subject to these activities; however, certain works are more characterized by their material components than their conceptual aspects. This is true of the art of Monique Voyer, which, for the past forty years, has been invested with what could be described as an "imagination of material things."

Nowadays, an artist's studio is more than a determined physical space—it interfaces with the whole universe, with places where multiple and diversified images are created. Nevertheless, in reality, the physical space of the studio is often a determining factor in the components of an artist's oeuvre: i.e. size, choice of material and pictorial elements. Thus, it is important to describe the locale of Voyer's artistic production for the past fifteen years.

Voyer's studio, adjacent to her Magog residence, is situated between her kitchen and the forest. Kitchen is a place of "recipes," implying order, know-how, measure and precision, in short a form of alchemy where exactitude is of great importance. On the other side, the forest, source of life, of materials, of inspiration, implies the idea of the infinite. The opacity of the forest asks for each person to find his/her own path. So the other aspect of Voyer's art is defined by the need to clear and decipher.

This article surveys Voyer's artistic production, from her early figurative works dating from a study period in France in the 1950s, to her abstract paintings of the 1960s, her printmaking production and her recent work, which relies even more on material components.

Between kitchen and forest, between the precise rules for creating and the profusion of materials, one finds the imaginary, which invests material things with dreamlike qualities. This metaphor serves to describe Monique Voyer's artistic production, firmly rooted in her immediate environment, yet characterised by an ongoing preoccupation with the formal aspects of art.

NOTES

* Ce texte est la version abrégée d'une conférence prononçée au Musée des beaux-arts de Sherbrooke en novembre 1994 dans le cadre de l'exposition rétrospective des œuvres de Monique Voyer.

1 Texte en exergue de Martin Heidegger, *Chemins qui ne mènent nulle part*, collection Idées, Editions NRF, Gallimard, traduit de l'allemand par Wolfgang Brokmeier, Paris, 1962, p. 5.

2 *ibid.*

3 Martin Heidegger, "L'origine de l'oeuvre d'art," dans *opus cité,* p. 25.

4 *ibid.*

5 Huile sur toile, 61x51cm, 1953.

6 Huile sur toile, 56x51cm, 1953

7 Huile sur toile, 61,5x39cm, 1954.

8 Rodolphe de Repentigny, "Figures, formes et graphismes," *La Presse*, 11 décembre 1954, p. 76.

9 René Passeron, *Peindre*, Revue d'esthétique, 1976/1, collection 10/18, Union Générale d'Éditions, p. 68.

10 Cf. Jean Sarrazin dans un compte-rendu de l'exposition dans *La Presse*, 22 octobre 1960.

11 Cf. *loc. cit.*

12 Cf. Dorothy Pfeiffer, "Monique Voyer," *The Gazette*, Saturday, October 29, 1960, p. 19.

13 Cf. Jean Sarrazin, *loc. cit.*

14 Cf. Interview de Monique Voyer par Guy Robert, *Le Devoir*, samedi le 25 novembre 1961, p. 10.

15 Huile et sable sur toile, 33x25cm, 1961.

16 Huile sur toile, 31x20cm, 1961, anciennement de la collection du poète Gatien Lapointe, aujourd'hui disparue.

17 Huile et toile collée sur toile, 71,2x91cm, 1965, collection Musée d'art contemporain de Montréal, don de l'artiste.

18 Huile sur toile et toile collée sur toile, 56x122cm, 1974.

19 Guy Robert, *École de Montréal*, Editions du Centre de psychologie et de pédagogie de Montréal, Montréal, 1964, p. 28.

20 Il s'agit du tableau de 1962 exposé au Musée des beaux-arts de Sherbrooke, du 5 novembre 1994 au 5 janvier 1995.

21 Huile sur toile, 65,5x68,3cm, 1961, collection de l'Université de Sherbrooke.

22 Cf. Dorothy Pfeiffer, "Voyer At Galerie Lefort," *The Gazette*, 9 février 1963, p. 20.

23 René Passeron, *Peindre*, p. 68.

24 Robert Ayre mentionne "an exhibition of 31 paintings in oil and acrylic…", dans son article "Trudeau and Voyer At Galerie Lefort," *The Montreal Star*, Friday, February 19, 1965, p. 27.

25 Paul Gladu, "Les vrais artistes nous entraînent hors du monde," *Le Petit Journal*, 21 février 1965, p. A-34.

26 "La matière chante. Invitation aux artistes pour une exposition collective", *L'Autorité du peuple*, 10 avril 1954, p. 7, cité dans François-Marc Gagnon, *Paul-Emile Borduas, biographie critique et analyse des oeuvres*, Editions Fides, Montréal, 1978, p. 349.

27 Cf. Robert Ayre, *loc. cit.*

28 Cf. Louise Desnoyers, "Galerie Agnès Lefort", *La Patrie*, 25 février 1965.

29 Cf. Guy Robert, *L'art au Québec depuis 1940*, Éditions La Presse, Montréal, 1973, p. 149.

30 Gaston Bachelard, "La dynamique du paysage", dans *Le droit de rêver*, P.U.F., Paris, 1970, p. 90.

31 *ibid.*, p. 90–91.

32 Michèle Drouin, "Le lyrisme de Monique Voyer," *Vie des arts*, vol. XXI, no 84, automne 1976, p. 65.

33 Cette oeuvre mesurant 41x41cm est reproduite sur le dépliant de l'exposition à l'Apogée en 1976, où elle est exposée.

34 Oeuvre mesurant 51x40cm, collection privée.

35 Cf. Guy Robert, *La peinture au Québec depuis ses origines*, Éditions Iconia, Montréal, 1978, 3e édition France-Amérique, 1985, p. 133.

36 Gaston Bachelard, "Le 'Traité du Burin' d'Albert Flocon," dans *Le droit de rêver*, p. 94.

37 *ibid.*, p. 95.

38 Gaston Bachelard, "Matière et main," dans *op. cit.*, p. 67.

39 Gaston Bachelard, "La dynamique du paysage," dans *op. cit.*, p. 82.

BICULTURAL COHABITATION IN WATERLOO, QUEBEC, 1850–1925

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Presenting the outlines of a research project and some scattered, skimpy and tentative findings rather than comprehensive, definitive results would seem to require some justification. My purposes in publishing the following pages not in my own country, Germany, but in Canada, and more specifically in this journal, are twofold. I hope to attract scholarly comment and criticism to assist me in a field that, despite all research efforts, is still in many respects unfamiliar to me, and where I am certain many important angles have escaped me so far. And I hope for suggestions and offers of source material—especially with regard to personal letters, diaries, reminiscences, etc.—from an interested public that has the advantage over me of having "roots" in the Eastern Townships, Shefford County, and especially the Waterloo area.

Perhaps it would also be useful to say what I am not after. I am not trying to start getting even with those many North American scholars who did studies of our European villages, with a respectable contribution of Quebeckers: Gérard Bouchard of UQ Chicoutimi being one of the first, and Karl Wegert of Bishop's one of the freshest off the press (though not on the micro-history level).[1] Though it might be a good idea to reciprocate, for various reasons, that thought occurred to me only after I had long decided to focus on Waterloo.

That decision also had nothing to do with any filiopietistic, kinship, or other personal ties to the village and later town in Shefford County, which I had never even heard about, let alone visited, before selecting it as the object of my study. Rather, I started out with the idea of analysing the everyday relationship between anglophones and francophones in a mixed small community, a face-to-face society, and I began with a list of some twenty villages in Quebec, from Gaspé to Beebe Plain. Guided by the criteria of "if not typical, at least not untypical," "the minority must be sizeable for at least two generations," and primarily the quality

and quantity of solid documentation, I finally chose Waterloo.

I

The project has two main parts, which are clearly different from one another, but not quite as distinct and separate as it would seem at first sight; in fact, they not only complement one another, but converge at several essential points. The first one is quantitative or demographic, in a very extended sense, and aims at comparison; the second one is qualitative and consists of an analysis of the actual relations between the two language and cultural groups.

The quantitative part tries to produce group profiles for a number of areas. One will be demography proper: population, migration, reproduction (e.g. number of children, spacing of children, age of mothers at first birth, births out of marriage, infant mortality, marriage patterns and exogamy, etc.). Another one is education: level attained, school attendance, illiteracy, knowledge of the other language, "crossing," i.e. choosing "the other" school system, etc. A third category will be economic standing: property and income; a fourth, social rank: occupation; self-employed or salaried; owner, tenant, occupant; political, school-board, church, militia, and associational office-holding, membership in occupational and social associations. And, drawing on all four of the preceding, the role of women, with an emphasis on their role as head of household or single parent, gainful employment before and during marriage and in widowhood.

It is obvious that the major sources for these analyses are the federal census and the church registers. It is equally clear that they are not sufficient and must be supplemented by school records, tax evaluations and assessments, church and militia records, and local newspapers.

What looks rather simple at first glance, what with the capacity of data banks and modern computers, is in fact quite complicated. Just about every step is beset by the vicissitudes of linkage: changed spelling of names, different preferences of first names, random shifts of age, and most of all, simple illegibility are the most frequent obstacles. But there are others as well, like the occupation of Waterloo inhabitants. If—in the 1881 Federal census and in the 1881 Waterloo Collection roll—the undoubtedly identical individual appears as "carpenter" and as "joiner," as "tanner" and as "laborer," as "farmer" and as "gentleman," there is no problem. The "carpenter" who is also a "farmer" (and property-owner) or

the "farmer" appearing as "laborer" (and tenant) can also be sorted out. But what of the "farmer" and "engineer", the "mechanic" and "joiner," the "sawyer" and "advocate," the "jeweler" and "professor," the "laborer" and "gentleman," the "schoolteacher" and "trader"—all in the very same year? One can certainly philosophise on the fluidity of occupations in the 19th century—but a quantitative survey requires decisions one way or the other.

Yet, once one has gotten all those complaints off one's chest, one can live with them. A far more serious impediment to the sort of quantitative work envisaged is the constant in- and out-migration. I am not referring to the basic shift from 100% anglophone in 1850 to 65% francophone in 1931; that is central to my project and will be properly accounted for. It is rather the high migration rate as such. Let us take, for example, the decade from 1871 to 1881. The overall picture is deceivingly simple. Population rose from 1241 to 1618, the proportion of francophones from 39% to 44% But of the original population, only 441, or 35%, were still to be found in Waterloo in 1881 which, with the boost of 199 children they had during the decade, gave them 39% of the population in 1881 (27% without their children). Far more, 710 persons (or 58% of the 1871 population) had left; and even more than that, 972 (60% of the figure for 1881), were newcomers to Waterloo.[2]

The population growth of Waterloo slowed down in the next decade—from 1618 in 1881 to 1733 in 1891, but the migration continued at a level quite similar to that of the previous decade: 1057 persons left (a small portion of them died), 1032 moved in, and only 561[3] of the inhabitants of 1881 were still present in 1891 (32%), who with their children born during the decade made up 39% of the 1891 population.

If one takes the two decades together, the impact of migration appears even more drastic: only 185 persons listed in 1871 were still present in 1891 (with a handful who had left and came back in the intervening period), who made up not quite 11% of the 1891 group or—including the 76 children born to them in the first and the 81 of the second decade—barely 20%.

Trying to establish group profiles, one cannot simply ignore the fact that a large majority of the population had disappeared in ten years and an even larger one after twenty, and even more had come in from elsewhere. One is on safe ground if one sticks to the "sedentary" inhabitants. Dealing with the rest is much more complicated, if only because there is scanty information on when they

left, let alone why and where to. Concentrating on those who stayed would be a more solid endeavor, but it would obviously be slanted toward the property-owning, successful, older, and maybe the less enterprising or generally immobile portion of the inhabitants. There must be ways of dealing with this dilemma, but so far we have not found a convincing one—except, of course, taking the static picture of 1871 and then 1881, etc.

The comparison of the group profiles will be important, of course, for the momentary result of the census years, particularly if correlated with what we find out about the actual relations between them in daily life. But I am even more interested in the development of these comparisons over time. Is there sufficient proof for my hypothesis that at least between 1871 and 1901 there is a considerable convergence in the quantitative performance of the two groups, i.e. do they become more alike, or particularly do the francophones show a demographic behavior more like local anglophones? And if so, does the convergence—as I expect—exceed the corresponding development between the dominantly francophone regions of Quebec and, say, rural anglophone Ontario? In a nutshell: does cohabitation in a face-to-face society tend to make people behave more alike? Are standards and values, as far as they become quantitatively accessible, transmitted from one group to the other in a small community? Or does daily contact leave basic attitudes unaffected?

II

I have already alluded to at least two points of contact between the quantitative part and the qualitative one—sources, and the question whether and how statistical data affect concrete intergroup behavior. There are more, and I will point them out, but first I would like to describe my qualitative approach. Here again, the starting point must be momentary pictures—like the political situation in 1867 (when, almost certainly unrelated to what happened on the Federal level, the village of Waterloo was incorporated); or the economic make-up of the village when the railway arrived, or the spectrum of clubs and associations in, say, 1901. But then they have to be put together, and the development of these and other aspects, taken alone and especially taken together, will yield the more worthwhile results. My basic question will always be the same. Where are the areas of full cooperation and maybe even amalgamation? Where, on the contrary, was strict segregation—or the solitudes—observed? And where can one find

in-between stages, from token integration to grudging coexistence, or compromise solutions?

In the area of work and the local economy, such questions as the occupational repartition and for example the proportion of "laborers" in each group[4] (and the development of those proportions) belong to the quantitative part. Here we are interested in such phenomena as the considerable number of partnerships (albeit frequently short-lived) across the language barrier in the crafts and retail stores; the degree of "mixing" in the clientele of physicians and notaries as well as of customers of local stores, craft shops, and banks. Apprenticeship and tenancy can also be viewed from the "relations" angle, and more and more importantly over the years, entrepreneurship and the hiring of labor. Are there employment "reserves" other than the quasi-monopoly of the English-speaking on the railways? Where is there competition, where is one group particularly strong or weak, how does ethnicity affect the purchasing or patronage of institutions (e.g. school boards), businesses or individuals? Who consciously solicits business from the other group, e.g. by advertising in the latter's newspaper? Membership and office-holding in the two trade organisations—Shefford Agricultural Society and Cercle Agricole—both of them quite integrated, will permit quantifying cooperation in the important farming sector. What is already quite clear is that at least in Waterloo, there was no one group exploiting or exploited by the other across the board.

Politics form another important part of the "relations" analysis. World, federal, provincial, county, and municipal politics are the distinct levels at which this area should be studied. Apart from the Boer War and World War I, there were no deep internationally political cleavages between the two groups induced in Waterloo, but the general outlook on world affairs contributes to the clarification of what relations were. The federal and provincial levels are not only the stage for rather early gentleman's agreements as to alternating or allotting candidates for the legislature in Ottawa and Quebec, but also can show dividing lines in, and the intensity of commitment to, specific issues. In all three areas, my impression is that differences are not so acute, emotions held more in check, radicalism more eschewed, and compromise or understanding more eagerly sought then in other parts of Quebec or Ontario. At the local level, not only the agreements made, but especially the time sequence and the mechanics of the transfer of power, with its time lag vis-à-vis the demographic shift and greater

responsiveness to the shift of economic power, will be looked at in detail. Discrimination and obvious catering to one group on the part of municipal government will also have to be examined carefully, as has to be the frequent complaint that one group is being discriminated against in setting up street lighting or constructing side-walks.

The social area is a large field, comprising churches and schools as well as their social activities, clubs and associations, residential patterns, lodgers and servants, casual encounters in the street, the store and the waiting room, friendships and mixed marriages, and as a most important prerequisite for all intensive contacts, a working knowledge of each other's language. I suppose the administration of justice belongs partly to the political sphere, but it certainly has a social aspect as well.

Church and school are traditionally the bulwarks of separation, but crossing of the line, mostly with regard to schools, occurs frequently enough to encourage pursuing the relevant research further. Establishing the residential patterns at any given time, and observing their development, require highly complex chores in a village, since neither the census nor parish registers nor municipal files give street addresses. The latter are contained in directories (for at best a third of the population); the cadastre indicates the lot numbers of proprietors but not which one they live on. But adding to that the itinerary of the census taker as shown by the order of families listed, the jigsaw puzzle can be solved to a large degree. We have not reached that point yet, but progressed far enough to state that there was no strict segregation. Rather, apart from professionals and storekeepers on Main, Foster and Court Streets who intermingle freely (67 anglophone and 47 francophone households in 1881), there are some ethnic clusters of varying density, but in most cases there was some admixture of the other group.[5]

The sample analysis of clubs and associations in 1901 prepared by a student assistant[6] on the basis of that year's *Waterloo Advertiser* and *Journal de Waterloo* registers 25 organizations (apart from the two farmers' associations already mentioned). Eighteen of them observed the language line consistently: the nine Protestant church affiliates, the two Temperance clubs, the Literary Society for Young Ladies, the Dancing Club and the Rifle Association on the anglophone side, the Société St-Jean Baptiste, the Société St-Vincent de Paul, the Association Catholique de Bienfaisance Mutuelle and Les Forestiers Catholiques with the

francophones; no more than a token participation of the other group could be found in the English and the French Dramatic Clubs, the Waterloo Lodge (Oddfellows) and Court Shefford (Foresters). But there were three (besides the two farmers' organisations) that were truly integrated as far as membership and officers were concerned: the Library Association, the Literary Society, and the Waterloo Amateur Athletic Association in the case of each perhaps surprising one way or the other. Clearly, this study calls for continuation forward and backward in time. But it already strongly suggests that, just as club membership and especially functions show a strong slant toward the "better sort," it is particularly the professional and business elite that feels free to cross the line or integrate.

While clearly Catholic or Protestant institutions like the school boards have a marked tendency to place their orders or have work done by their own group, there is considerable "promiscuity" as far as patronizing stores or consulting professionals - physicians, lawyers, notaries public—are concerned. The details will have to be worked out, but it is already clear that some lawyers and some physicians had a clientele mainly of their own group, but others were frequented by a what looks like even a majority of "the other" group.

Examining the administration of justice for cultural differences and bias is a very intricate matter, and that not only because so many essential facts are lacking in the files. But if one Fred Savage is tried before the Queen's Bench at Bedford on an indictment of rape on 11 September 1879;[7] if the alleged victim is French-Canadian; if her deposition and those of her brothers and mother sound quite convincing to the reader 115 years later; if the statements of an English-speaking physician are skeptical, but sound biased against the plaintiff; if the jury is composed of 12 English-speaking men; and if, finally, the defendant is acquitted, one may entertain legitimate doubts whether only the principle of *in dubio pro reo* came into play here. No more than doubts, of course; many more similar cases must be examined before a general statement, and probably still tentative at that, can finally be made.

The two weekly newspapers probably provide most of the material for the mutual images of the two groups. Clichés as well as more sophisticated views of "the French" and "les Anglais" can be drawn from their news items and editorials—but in some subtle ways even from the advertisements. Comparing the ads of local enterprises in the *Advertiser* and the *Journal* one may differentiate

between four clear-cut categories:

- Those that appeared only in the English-language weekly;
- those that appeared only in the French-language one;
- those that appeared in both, but were precise translations. (I hope to find out why some professionals and merchants confined their ads to the paper of their own language, or were so unimaginative as to simply translate.)
- But the really interesting category is that of such ads from the same advertiser as appeared quite differently in the two papers.

Here is a mild case, though one might find at least five points of difference—in style, but also in content:

FRESH **COD LIVER OIL!** The Best of This Year's Norway Crop TO BE HAD **AT DuBERGER'S!** —AT— $2 a Gallon, or 25¢ a Pound **Fetch a Bottle!**	HUILE DE **FOIE de MORUE** FRAICHE LA MEILLEURE DE NORVEGE CHEZ **A. E. DuBERGER** —Pharmacien— VIS-A-VIS le MARCHE **Waterloo, P.Q.** APPORTEZ VOS BOUTEILLES

Or take the ads of A.F. Savaria's general store. In the French version, more than half the space, and two thirds of the eye-catching lines in large print, are devoted to clothing, shoes, hardware, and groceries, while grain and flour is mentioned just in passing, except for a special recommendation of "Célèbre Fleur o.k." The ad in the *Advertiser*[8] is only half as large, but the different size does not explain the difference in emphasis. "Hats, Ready-made clothing, Groceries, Hardware, Boots and Shoes, etc." take up just two lines in small print. The rest of the text is dominated by "SEED GRAIN" (five different sorts are listed) and "Flour! Flour!" (with six specifications). The last line reads "Citizens' Telephone No. 33"—an item withheld from the French readers.[9]

Parallel advertising in the two weeklies during the 1880s and 1890s tends to show several differences. The tone of the French ads is comparatively calm if not dignified, that of the English ones

more agitated, more aggressive, full of exclamations and exclamation marks. "Traditional" and "conservative" would characterize the one, "trendy" and "progressive" the other. The print tends to be more elaborate, or Gothic, in *Journal* ads, simpler or leaner in the *Advertiser*. And illustrations in French ads are frequently quaint and reminiscent of things past, their counterparts rather emphasize modernity or future-orientation.

III

These impressionistic remarks would seem to support well-established clichés reaching back at least to Lord Durham's excursion into the study of mentalities. But I believe that there is more to advertising and especially cross-cultural advertising. Self-image and expectation of a positive response from one's own group, the estimate of the mentality and expectations of the other group and thus its presumed reaction, and that in both directions - this material, made more tangible and less erratic by the commercial interest behind it, should yield more than just support for clichés if pursued systematically.

The large and essential area of self-images and images of the other group—of which cross-cultural advertising is but a small though perhaps particularly revealing segment—is one that does not fit into the pattern of either quantitative comparison or qualitative relations. As a "Qualitative comparison" it figures as either a third category or as a bridge between the other two—along with values, beliefs, basic attitudes and behaviour, tastes, habits—and their possible changes over time.

The major sources for this kind of non-qualitative analysis and comparison are the newspapers and the wide gamut of notarized contracts preserved in Quebec's greffes de notaires. While the "mutual image etc." field prevents the study from developing into two neatly divided segments, at least by adding a third one interrelated with both, there is also a strong tie holding the quantitative and the qualitative parts (as far as this differentiation makes sense in the age of "hypertext") together: their mutual dependence. While the personal data bank is initially established on the basis of the census and the parish registers, it is constantly being added to and enriched from the qualitative sources, e.g. references to individuals in the two weekly papers, in militia and tax rolls, in school board and judicial files, and certainly not least in the notarized contracts. Inversely, the data bank serves as a kind of biographical dictionary whenever a name appears in all those and

other sources in a context that asks for identification of an individual.

* * * * *

I have been working on this project since 1990. If this report contains far more plans than results, two reasons may be presented for that. For one thing, the work over four years had to be spread rather thin: very limited means were available, and the time I could spend on the project was confined to about four weeks in Canada and another month of work at home per year. Even that limited or backburner effort could have yielded more if concentrated on one or two aspects. But instead I tried to locate and then to get a good look at, or "sample-research" every part of the wide spectrum of available sources, so as to assess or evaluate not only their nature and worth, but also the time and money needed to go through (and partly copy) them all. Thus, I now have a fairly clear idea of the work ahead of me, and I believe I can see most of the problems ahead realistically, without fear of major unpleasant surprises. But, having no more than nibbled at a dozen source categories and research questions, what I have to show so far by way of results is not particularly impressive, which is why I hid them away in the course of the project description rather than presenting a "Part Two: Results."

When all I have planned will have been done and written down—by the spring of the 2000—I hope and believe that something significant will have been said about the bilingual and bicultural experience of Waterloo, Que. Of course, the findings of a micro-historical study cannot be "generalized" in a comprehensive sense—for Quebec, for Canada, or even the world. Some generalization will be possible for similar places with similar population and migration at similar times as long as one is extremely cautious, especially with regard to features that are unique to otherwise comparable configuration.

But most practicians of micro-history would agree that they do not do their research in order to reveal macro-historical developments but rather to find out about details, particulars and nuances that are left out in general studies—and particularly in order to *test* accepted generalizations or the conventional wisdom by a close look—so close as general historians cannot possibly indulge in. Closeness and narrowness of the perspective will—unless one falls into the trap of "local history" in the sense of positivistic, anecdo-

tal, with a shaky methodology and unfounded on theory—also yield more accuracy, quite apart from the significant detail that is inaccessible for studies that do not descend to the level of the individual.

Ever since I had made my choice of Waterloo, the name of the place struck me as highly ironical. The town was given the Flemish name to commemorate one of the most important British victories over the French—but it became the place of a decisive demographic defeat of the British element. Should I add what Wellington is supposed to have said at a very critical point in the battle? "I wish it were night, or the Prussians were coming." Puns may be intended, but I should make clear that I may be Prussian by birth, but the Napoleonic wars are over, and one of the major qualifications I may have for this project is that in every formal and measurable way I can consider myself neutral between the Waterloo anglophones and francophones then and now.

NOTES

1 *Le village immobile. Sennely-en-Sologne au 18e siècle* (Paris 1972); Karl Wegert, *Popular Culture, Crime, and Social Control in 18th-Century Württemberg* (Stuttgart, 1994).

2 Of the "sedentary" group (without post-1871 children) 289 were anglophones, 150 francophones; but although the proportion of women was even more lopsided—145 to 67—the latter gave birth to 115 children, the former to only 84. Thus, regardless of migration, the proportion of francophones increased by reproduction from 34% (1871) to 42% (1881) of the "sedentary" population.

3 This figure may be still increased somewhat: the search for women who are "hiding" behind the name of a husband they married during the decade has not been completed.

4 By way of illustration, in the census of 1871, 29% of the male working population was listed as "laborers" or "journaliers." Of the latter, 56% were francophone, 44% anglophone. Ten years later, that category had shrunk to 17% But now, the proportion of francophones had increased to 74%, that of anglophones diminished to 26% (Calculations by student assistants Karola Gaede and Stefanie Schulenberg.)

5 I have drawn these figures from the painstaking compilation and calculation of Petra Dolata, a student assistant, who continues filling the gaps and removing uncertainties.

6 Barbara Lorenzkowski, "Clubs und Vereine im Spiegel der Lokalpresse 1901".

7 Court of the Queen's Bench, Bedford, Rôles: Plumitif et Judgements, V.I, p. 456, and depositions, Archives nationales du Quebec, Sherbrooke.

8 *Waterloo Advertiser* 4 Feb. 1892; *Journal de Waterloo* 5 Feb. 1892.

9 *Journal de Waterloo* 7 Jan. 1892, *Waterloo Advertiser* 8 Jan. 1892.

HISTOIRE DU THÉÂTRE À SHERBROOKE 1940–1968 : DE LA FRAGILITÉ À LA PERMANENCE

par Serge Malouin
Sherbrooke, Les Éditions de l'Université de Sherbrooke et les Productions GGC ltée, 1994, ISBN 2-89444-005-7.

Jean Levasseur
Université Bishop's

L'auteur de cet essai, Serge Malouin, n'est pas étranger à la scène théâtrale sherbrookoise: professeur au Collège de Sherbrooke, il fut, dès les années soixante, impliqué en tant que comédien, directeur technique, metteur en scène et auteur avec la troupe l'Échiquier de l'Université de Sherbrooke, puis avec la célèbre troupe de l'Atelier. Son ouvrage *Histoire du théâtre à Sherbrooke 1940–1968. De la fragilité à la permanence* est le résultat d'une recherche effectuée en vue de l'obtention d'un diplôme de maîtrise et, en tant que travail universitaire ponctuel, il possède à la fois les qualités et les défauts reliés à ce type d'entreprise académique. Qualités parce qu'il démontre une grande rigueur dans la recherche et l'organisation, et défauts parce que le contenu en demeure fort limité, et laisse trop souvent le lecteur sur sa soif de connaissances.

Les délimitations temporelles proposées par M. Malouin dans sa recherche pourront à prime abord paraître surprenantes à l'amateur de théâtre sherbrookois; l'auteur prend toutefois le soin d'expliquer que le choix de 1940 comme année de départ lui permet d'intégrer le contexte historique et culturel contemporain à l'émergence en 1944 du Cercle théâtral de Sherbrooke, et que celui de 1968 comme année de clôture souligne à son avis l'état de permanence de ce théâtre local, incarné par la solidité du Théâtre de l'Atelier, fondé en 1961. Le lecteur retrouvera dans cet essai historique de précieux renseignements fondamentaux sur de nombreux aspects de la production théâtrale des animateurs et pionniers Antonio Montour, Marguerite Leclaire (Cercle théâtral), Lionel Racine (Union théâtrale), Roger Thibault et Pierre Gobeil

(L'Atelier), sur le rôle de catalyseur joué par les festivals d'arts dramatiques (D.D.F. et A.C.T.A.), et sur les multiples lieux de production (dont la salle du His Majesty's, le Granada, les auditoriums Saint-Charles et de l'Université de Sherbrooke, et le Théâtre de Poche). La "réception théâtrale," toutes théories linguistiques et sociologiques exclues, est également abordée dans cet ouvrage, dans un chapitre consacré aux producteurs de cette réception, i.e. les journalistes ayant couvert les diverses créations dramatiques de cette époque. L'auteur destine également une portion de sa recherche aux rares écrivains locaux ayant écrit, à l'intérieur de cette période, plus d'une pièce: les oeuvres des Adolphe Brassard, Euchariste Paulhus, Roger Maltais, Maurice O'Bready, Yves Hébert (pseud. Yves Sauvageau), Roger Thibault et de l'auteur lui-même, Serge Malouin, sont ainsi brièvement analysées.

Grande rigueur dans la recherche, mais contenu très limité puisque l'auteur a procédé à un dépouillement exhaustif de tous les articles traitant du théâtre local, mais "seulement" de *ces* articles, parus dans le quotidien régional *La Tribune* entre le 1er janvier 1940 et le 31 décembre 1968. Il ouvre ainsi une multitude de portes qui nous apparaissent tout à fait fascinantes mais, cadre universitaire exige, les referme aussitôt; cette ouverture sur la culture théâtrale sherbrookoise se voit ainsi limitée à la perception qu'en eurent les journalistes de ce quotidien, et sur l'importance, ici inconnue, qu'accordait ce quotidien à la couverture de la culture locale. Un titre d'ouvrage plus approprié, tenant compte de ce point de vue restrictif, aurait sans doute évité partiellement ces douces frustrations. À simple titre d'exemple, le premier chapitre, qui s'ouvre sur le pionnier Antonio Montour, un "précurseur" nous dit Serge Malouin, "un des animateurs importants de la scène sherbrookoise," un homme qui "a travaillé plus de quarante ans sur toutes les scènes y compris celles de la rue" (17); à la surprise du lecteur toutefois, ces chaleureux et louangeurs qualificatifs ne suffisent pas, semble-t-il, à justifier une recherche biographique excédant l'antre des relevés journalistiques, puisque là bien sûr n'était pas le projet académique de l'auteur. Et le lecteur de demeurer sur sa faim.

Cette faiblesse bibliographique, qu'il faut sans doute comprendre et respecter dans le cadre de la nature de cet exercice universitaire, entraîne toutefois une autre conséquence tout aussi malheureuse: l'auteur ne tire pas véritablement profit, dans ce qui aurait pu être une tentative de mise en perspective d'un aspect de

la production théâtrale de cette époque (thématique, historique, littéraire ou autre), des réflexions et recherches passées sur le sujet, dont l'*Histoire de l'Union théâtrale (1946–1988)* de Pierre Hébert et Réjean Chaloux (publié en 1991) et de divers articles parus dans *Les Cantons de l'Est*, *L'essor culturel de Sherbrooke et sa région* et *A l'ombre de Desrochers*, textes qu'il mentionne occasionnellement dans son ouvrage, mais qui ne font même pas partie de sa bibliographie.

Histoire du théâtre à Sherbrooke 1940–1968. De la fragilité à la permanence de Serge Malouin n'en demeure pas moins un important travail de dépouillement et de remise en ordre, trop souvent chronologique et légèrement aride peut-être, mais résultat impressionnant d'un immense labeur qu'Antoine Sirois qualifie à juste titre, dans la préface qu'il signe, de "quasi monastique" (4). Les frustrations que sa lecture entraîne sont somme toute un compliment aux intérêts et questions qu'il procurera inévitablement au lecteur et chercheur.

CROFTERS AND HABITANTS: SETTLER SOCIETY, ECONOMY, AND CULTURE IN A QUEBEC TOWNSHIP, 1848–1881

by J.I. Little.
Montreal & Kingston: McGill-Queen's University Press, 1991.

Peter Gossage
Université de Sherbrooke

Most readers of *JETS* will need no introduction to Jack Little. A native of the Eastern Townships who now teaches at Simon Fraser University, Little's interest in this region's history is well known, as is his impressive record of publications in the area. The volume under review here appeared in 1991, two years after *Nationalism, Capitalism, and Colonization*, a book which recently sparked a lively debate in this journal.[1] In 1992, Little was awarded the prestigious *Prix Lionel Groulx* by the *Institut d'histoire de l'Amérique française*, recognizing *Crofters and Habitants* as the most accomplished study in Quebec history to be published in the preceding year.

In this book, Little picks up on many of the concerns he introduced in *Nationalism, Capitalism, and Colonization*. The settlement history of the Upper St Francis District in the 19th century, agriculture and forestry as the economic bases for regional development, the consequent importance of land distribution policies and infrastructure projects (mainly roads and railways), the roles of economic, political, and religious elites, the differences and similarities between British and French-Canadian colonization efforts in the area: all of these themes are recurrent. Yet the differences between the two volumes are just as striking. Paramount among them is the geographic scale at which the analysis is carried out. Whereas the earlier book had dealt with the entire Upper St Francis District—some 21 townships with a total population of almost 8,000 in 1861—*Crofters and Habitants* tightens the focus sharply, zeroing in on Winslow Township, located in the heart of the district, with a population of about 1,600 Scots and French-Canadian settlers at the same date. The narrowing of focus per-

mits a depth of analysis and an attention to detail which are rare in studies conducted through a wider window.

Little's objectives, moreover, are well served by this strategy. His main goal is to compare the settlement experience of the township's two main cultural groups during its early history, between 1848 and 1881. The southern part of Winslow Township was peopled mainly by Gaelic speaking expatriates from Scotland's impoverished Isle of Lewis; the term "crofter" refers to the particular combination of subsistence agriculture and kelp gathering or fishing they had practised on the seaside "crofts" of their native island. The northern part was settled primarily by French Canadian habitants, most of them migrants from the Lauzon seigneury south of Quebec City. By restricting his attention to this one township and its evolution over the span of some thirty years, Little is able to conduct his investigation at a grass-roots level, exploring frontier life in detail from the point of view of those who lived it.

This exploration is structured, as it were, in parallel. Eight chapters document as many aspects of the settler experience for both the Scots and French-Canadian populations. Little first sets the scene by discussing the conditions that first prompted the migrations and by sketching out the initial patterns of settlement in an area of marginal agricultural potential. He then looks in sequence at demography, family patterns, farming, local entrepreneurship, and at the religious, educational, and political institutions that emerged in this township in the 1850s, 1860s, and 1870s. The approach is consistent with that of historians—those of the French *Annales* school, for example—who have attempted to reconstruct historic communities by examining as many aspects of their experience as the surviving sources allow. As the author explains in the introduction, the aim of the book, "… is not to test a social-science theory or model, but simply to examine the people of a particular place at a particular time in as multifaceted a fashion as possible." (p. 7)

The sustained comparison between the two communities is based on an extremely broad range of sources. From dirt dry registers of land concessions to the colourful poetry of Angus McKay (Oscar Dhu), Little has left no stone unturned in his search for primary materials. He makes particularly good use of manuscript census schedules and of Catholic and Presbyterian registers of baptisms, marriages, and burials. These are the kinds of routine, standardized documents that, when patiently sorted and cross

indexed, allow scholars to analyze communities at the level of the individual family. Little has not lost this opportunity. Nor has he failed to contextualize his study with respect to a broad range of secondary literature. Indeed, the sheer number of themes broached in this book—from demography to local politics and from household economics to religious revivals—makes a rather high level of erudition indispensable.

In the resulting analysis, one is struck both by the similarities between the two communities and by some clear differences in the ways they adapted to life in Winslow Township. On the one hand, family and kin were extremely important social networks in both communities. Furthermore, Scots and French Canadian family structures were remarkably similar. Fertility levels were uniformly high, though Scots youths tended to marry later and were more likely than French Canadians never to marry at all. On the other hand, though both groups engaged in subsistence agriculture, there were important differences in their economic strategies that Little attributes, correctly I think, to their distinct cultural backgrounds. French-Canadians, for example, were much more likely to supplement their farm income with forest-based activities such as trapping, logging, and maple sugar production than their Gaelic speaking neighbours. These would have been traditional pursuits for migrants from the Quebec City region, and totally unfamiliar to crofters from the Isle of Lewis, who used other tactics to supplement their inadequate farm incomes.

Readers of *Crofters and Habitants* will discover many other ways in which the Gaelic and French speaking inhabitants of Winslow Township both resembled each other and drew on their respective cultures to find distinctive solutions to common problems. But those interested in learning more about how, when, and why the two groups interacted, whether peacefully or otherwise, may be less satisfied. The book only hints at the kinds of contacts that surely must have existed across cultural lines. What of intermarriage, for example? Did it occur? If not, how does one account for the presence in North Winslow of francophones named Jean-Baptiste Cameron and Marie McKenzie, a farmer and a schoolteacher respectively (p. 177, 239). What of inter-ethnic credit and commercial relationships? Did a merchant like Colin Noble deal exclusively with a Gaelic speaking clientele in his store in Stornoway, South Winslow? His rival, the Irishman Thomas Leonard, seems to have been rather well served by his familiarity with English, Gaelic, and French, suggesting at least some degree

of ethnic mixing in the village's modest places of business. (The fact that Leonard's was apparently the only local establishment serving alcohol may be relevant in this connection.) And what of animosity and conflict between the two ethnic groups? The only hints one gets are in the discussion of the Donald Morrison affair[2] which in Little's view hastened the Scots' exodus from the region "by intensifying their sense of alienation in an increasingly French-speaking district and a hostile political environment." (p. 201)

Surely these topics merit further attention. Still, there is no doubt that Jack Little's *Crofters and Habitants* makes a unique contribution to our understanding of the social, economic, and cultural history of the Eastern Townships and deepens our knowledge of Quebec history in general. The book fully deserves the accolades it has already received. Given the universality of its themes—frontier, tradition, ethnicity, environment, culture, survival—and the sophistication of its method, *Crofters and Habitants* surely transcends anything as simple as "local history." Yet it remains the best kind of local history, partly because the example of Winslow Township is set so effectively in the context of the settlement experience all over North America, but mainly because descendants of French Canadian and Scots colonists alike will recognize in its pages the resourcefulness, religious conviction, family cohesiveness, community spirit, and occasional churlishness of their ancestors.

NOTES

1 J. I. Little, *Nationalism, Capitalism, and Colonization in Nineteenth-Century Quebec: The Upper St Francis District* (Kingston & Montreal: McGill-Queen's University Press, 1989). See Guy Boisclair's critique in *JETS* 3 (fall 1993): 71-85, and Jack Little's response in *JETS* 4 (spring 1994): 75–86.

2 Since the publication of this book, Little has written more extensively on the Megantic Outlaw. See Jack Little, "Popular Resistance to Legal Authority in the Upper St. Francis District: The Megantic Outlaw Affair of 1888–89," *Labour/Le Travail* 33 (spring 1994): 97–124.

LA GRIPPE ESPAGNOLE À SHERBROOKE ET DANS LES CANTONS DE L'EST

par D. Rioux
coll. Histoire des Cantons de l'Est, no. 9,
Sherbrooke, Métrolitho, 1993, 133 pages.

Laurent Rodrigue
Sherbrooke

Le volume recensé est le neuvième de la *Collection Histoire des Cantons de l'Est* publiée par l'Université de Sherbrooke. Rédigé initialement dans le cadre d'un mémoire de maîtrise présenté en 1985 au Département d'histoire de l'Université de Sherbrooke, cet ouvrage s'adresse à un public assez vaste. En abordant le cas de l'épidémie de grippe espagnole qui a sévi à l'automne 1918, on peut penser que le livre de Denise Rioux sera particulièrement apprécié des chercheurs ayant un intérêt pour l'histoire de la santé publique au Québec.

L'objectif visé par l'auteure est d'étudier les manifestation de la grippe espagnole à Sherbrooke et dans les Cantons de l'Est, ainsi que des mesures prises pour l'enrayer, à partir de témoignages, d'articles de journaux et de diverses publications sur la question. Rioux essaie aussi de mesurer l'impact de l'épidémie dans la région, par les statistiques dépouillées dans les paroisses catholiques et protestantes des comtés de Sherbrooke, Stanstead et Wolfe. Cet objectif détermine l'organisation générale du plan, qui lui, s'articule autour de deux principaux thèmes (même si l'ouvrage est divisé en trois chapitres). La première partie décrit la progression de l'épidémie, son caractère subit, ainsi que les mesures que prirent les autorités municipales et le corps professionnel des médecins pour l'enrayer. Dans la deuxième partie, qui correspond au dernier chapitre, les effets de l'épidémie sont mesurés par le nombre de victimes et par leur répartition démographique, géographique et sociale. La situation de Sherbrooke et des Cantons de l'Est est d'ailleurs comparée à celle de l'ensemble du Québec.

En général, le texte est surtout descriptif. C'est d'ailleurs là la

principale force et tout l'intérêt du livre. À cet égard, les témoignages recueillis auprès de personnes qui ont vécu l'événement de près représentent un atout précieux. L'auteure ne prétend pas reposer son propos sur un traitement complet de la question, l'objectif premier étant d'informer et de susciter la réflexion, non d'interpréter et de débattre. Denise Rioux a le mérite de présenter de nombreuses statistiques que d'autres chercheurs pourront reprendre. Écrit dans un style sobre, reposant sur une documentation principalement composée de journaux, d'archives de l'administration municipale, de chroniques et de registres d'état civil, l'ouvrage est agrémenté par plusieurs tableaux et graphiques. Les appendices qui font suite au texte principal s'avèrent également fort utile pour de futures recherches.

Extrêmement prudente dans ses propos, l'auteure affirme que l'intervention rapide des dirigeants municipaux et du "Comité du salut public," pour contrer l'épidémie, doit être replacée dans un contexte où on commence à accorder de plus en plus d'importance à l'hygiène publique. Alertés par l'information parue dans les journaux, ainsi que par les rapports du bureau provincial d'hygiène, les membres du Conseil municipal de Sherbrooke, de concert avec les médecins de la ville, tentent d'organiser les secours dès les premiers signes d'épidémie. Dès le 27 septembre 1918, une série de mesures d'urgence est mise sur pied. Les médecins doivent signaler tous les nouveaux cas de grippe au chef de police. Un échevin est également chargé de communiquer avec le Département d'hygiène provincial afin de s'informer des moyens à prendre pour enrayer l'épidémie. Par ailleurs, cet événement devint pour les médecins une occasion idéale pour réitérer, auprès du Conseil de ville, leur ancienne demande concernant la nomination d'un des leurs comme officier sanitaire pour Sherbrooke. De 1875 à 1918, aucun médecin n'avait réussi à siéger au sein du bureau de santé municipal.

Une des toutes premières tâches de l'officier sanitaire, dès son entrée en fonction, fut de former un comité de citoyen (le Comité du salut public) et d'aménager un hôpital d'urgence. La fermeture des lieux publics, qui a contribué à paralyser la vie social et économique, a sans doute joué un rôle important pour limiter la propagation de l'épidémie. Malgré le nombre élevé de victimes par rapport à la moyenne provincial, Sherbrooke fut l'une des premières municipalités du Québec à affirmer s'être défait de l'épidémie de grippe espagnole.

De cet ouvrage se dégage la conclusion suivante: les efforts

déployés dans le but d'éliminer l'épidémie de grippe à l'automne 1918 montre bien la gravité de l'événement et l'urgence du moment. D'ailleurs, l'une des principales qualités du livre de Denise Rioux est de nous rappeler le caractère soudain de l'épidémie, le sentiment d'impuissance des médecins et le souvenir douloureux qu'en ont conservé tous ceux et celles qui l'ont vécu.

L'auteure réussit également à interpréter avec brio les statistiques recueillies en rapport avec l'épidémie. Elle affirme, par exemple, que le nombre relativement élevé de décès à Sherbrooke peut être le signe d'une organisation municipale ayant réussi efficacement à rapporter les victimes de l'épidémie. De cette analyse résulte un questionnement à savoir si les régions rurales n'étaient pas sous-représentées dans les statistiques officielles du fait d'une organisation déficiente.

En somme, l'ouvrage de Denise Rioux est étayé d'une argumentation solide. La conclusion présente toutefois quelques petites faiblesses. Notamment, l'évolution des mentalités face à l'émergence des mesures d'hygiène publique pour expliquer les efforts en vue d'enrayer l'épidémie de grippe à l'automne 1918 se présente comme une affirmation lourde de sens. Les mesures drastiques prises durant l'épidémie de grippe espagnole à l'automne 1918 sont moins le résultat d'un changement d'attitude face à l'hygiène publique que la conséquence de la gravité de la situation. Bien avant ce triste événement, des gestes significatifs sont posés en matière d'hygiène publique dans les grandes villes. On a qu'à penser à l'oeuvre de la goutte de lait par exemple.

Mais outre ce petit détail, l'oeuvre de Denise Rioux s'avère être un travail bien fouillé et solide dans sa démonstration. Cet ouvrage constitue une pierre d'assise à partir de laquelle il est possible d'entreprendre de nombreuses autres études portant sur l'histoire da la santé et de la médecine à Sherbrooke et dans les Cantons de l'Est. L'ouvrage donne d'ailleurs d'excellentes pistes de recherche quant à l'inégalité sociale devant la mort.

HISTORICAL ATLAS OF CANADA

Volume I From the Beginning to 1800, edited by R. Cole Harris with cartography by Geoffrey J. Matthews, University of Toronto Press, Toronto, 1987, xviii + 198 pages., (ISBN 0-8020-2495-5).

Volume II The Land Transformed, 1800–1891, edited by R. Louis Gentilcore with cartography by Geoffrey J. Matthews, University of Toronto Press, Toronto, 1993, xxxii + 184 pages., (ISBN 0-0820-3447-0).

Volume III Addressing the Twentieth Century, edited by Donald Kerr and Deryck W. Holdsworth with cartography by Geoffrey J. Matthews, University of Toronto Press, Toronto, 1990, xxii + 197 pages., (ISBN 0-0820-3448-9).

J. Derek Booth
Bishop's University

The publication in 1993 of Volume II of the *Historical Atlas of Canada* brought to final fruition the project, almost a quarter century in the execution, which has yielded the single most comprehensive, unified corpus of cartographic, textual, diagrammatic and statistical insight on the historical geography of Canada ever assembled.

It was an undertaking at once massive in scale, multidisciplinary in approach, and yet sharply focused on processes relating to national synthesis.

Each of the three volumes is presented in similar structural format. The broad time frame is sub-divided on the basis of regional or thematic topics and within each of these individual full-page plates are devoted to selected themes and topics intended to shed light on the weaving of the Canadian national fabric. The consistently high quality of the cartographic and other visual representations of each Plate are a tribute to the conceptual skill and execution of Geoffrey Matthews and this clarity of visual expression ensures that the *Historical Atlas of Canada* is no mere compendium of sterile maps. Indeed, many of the Plates consist not only of cartographic representations but they also include graphic and diagrammatic elements, superbly executed drawings, artistic repro-

ductions and, by no means least, a body of elucidating text.

One of the objectives of the *Historical Atlas of Canada* was to create a scholarly reference tool and in this the editors have succeeded. Each Plate is accompanied by a list of primary and secondary sources from which, in part, the Plate was constructed and which at the same time provide a starting point for further research on any of the processes and patterns depicted in the Plate.

Volume I of the *Historical Atlas of Canada* contains six parts: Prehistory, The Atlantic Realm, Inland Expansion, The St. Lawrence Settlements, The Northwest and Canada in 1800. Each section is introduced by an overview of salient events and processes.

Volume II, after an Introduction which sets the scene for Canada in the nineteenth century, contains two parts. Part One, Extending the Frontier: Settlement to Mid-Century, focuses on the settlement processes in eastern Canada and on the economic foundations laid in the first half of the nineteenth century. Part Two, the longer of the two, is centred on the theme Building a Nation: Canada to the End of the Century.

Volume III begins with an overview of Canada from 1891 to 1961. Its two parts, separated chronologically by the Depression of the 1930s, are The Great Transformation 1891–1929 and Crisis and Response 1929–1961. In Part I the emergence of national and regional economic patterns provides a dominant focus while in Part II the impact of the Depression, World War II and the emergence of the modern Canada in the post-war period form central themes.

While the Eastern Townships does not, in and of itself, form the subject of detailed regional analyses, it is included in the broader cartographic representations of southern Quebec. The depiction of the Townships, whether in terms of early settlement patterns, the development of transport systems, or within the many other socio-economic frameworks that it appears, is clear and accurate.

The three volumes of the *Historical Atlas of Canada* present a dynamic human historical geography. The focus throughout is on the people of Canada rather than on institutional frameworks whether political, economic or other. The one hundred and ninety-three plates of the Atlas' three volumes depict the creation of the human geographic landscapes of Canada, of the occupation of the northern half of the North American continent. The process is examined from the time of the earliest appearance of pre-historic settlers, through the successive waves of immigration

in the nineteenth century, to the creation of the complex modern landscape. The emphasis of the work is on process rather than on static cross-sectional description and the reader cannot escape the dynamism inherent in a work that focuses on creation and change and readjustment.

In a work which comprises almost two hundred separate Plates, each one of which represents a synthesis, there may be latitude for discussion of omissions and lacunae. However, as is pointed out in the Foreword to Volume I, the *Historical Atlas of Canada* offers a "deliberately moulded visual approach to the Canadian past." The selection of the themes and subject matter for the individual Plates that make up the atlas must ultimately rest upon scholarly editorial judgement. In this respect there is little to reproach the editors.

The *Historical Atlas of Canada* is a success at all levels. It is a reference source for all students of the Canadian identity, a thorough compendium of the dominant themes and strands in Canadian history and it is a vibrant visual representation of Canadian historical geography.

MULVENA PAPERS

By Henry Mulvena
Presented by Esther Healy, Richmond County Historical Society, 1993, 79 p.; illustr.; notes.

Marie-Paule LaBrèque
Acton Vale

Ce petit livre nous parle des pionniers et de l'histoire de la ville de Richmond, des cantons de Cleveland et Shipton. L'auteur, Henry Mulvena (1891–1991), a rédigé ses souvenirs de famille et il a eu recours à quelques documents et journaux anciens. On y trouve des récits sur les premiers colons, le terrible climat de 1816, la fondation et le développement de Richmond, l'arrivée des chemins de fer. La généalogie y reçoit aussi son compte par les nombreux rappels de l'histoire des familles et des vieux cimetières. Les notes ajoutées par l'éditeur apportent des précisions utiles pour le lecteur contemporain.

En histoire régionale, on est toujours à l'affut de sources de cette nature et les *Mulvena Papers* présentent les avantages et les limites de ce genre. On peut y déceler des renseignements inédits, mais les erreurs y abondent aussi et commandent la plus grande prudence. Par exemple, de nombreuses mentions du Port-St-François sont anachroniques; ce port a été construit par la British American Land Company, donc pas avant 1832. Le duc de Richmond n'appartenait pas à la famille royale et dans le récit officiel de son décès, il n' est pas question de son passage dans les Cantons de l'Est.

Quand on sait que Henry Mulvena a quitté Richmond à 18 ans et qu'il a passé toute sa vie à Winnipeg, sauf de nombreuses visites dans sa famille, on doit considérer ses écrits comme le témoignage de sa fierté envers ses ancêtres et de son attachement au coin de terre qui l'a vu naître.

THE B.SC., THE M.SC. AND RELATED TOPICS AT BISHOP'S UNIVERSITY, LENNOXVILLE, QUEBEC : PART I – THE MCGREER YEARS

Arthur N. Langford
Port Rowan, Ontario

The challenge to one who is not an archivist at heart to write a story of the development of the B.Sc., M.Sc. and related topics at Bishop's University is one that cannot be met fully, primarily because the writer is the only surviving Science instructor from that day in May 1938 when the first student to receive the B.Sc. degree, E. Roger Boothroyd, now a retired Professor of Genetics from McGill University, mounted the stage of old Convocation Hall, which brings back assorted memories to surviving students of that day, memories of Convocation itself, of social functions, of visiting lecturers, of long tables set on trestles for examinations, and even of C.O.T.C. (Canadian Officers Training Corps) lectures during the war. My knowledge of the personal recollections of this day that might have been supplied earlier by Professors Home, Kuehner and Richardson are scant indeed, nor have I had available to me much help from others with better memories or closer contact with events of these early days. This record will thus have disproportionate references to developments in Biology and even there memory will be of more importance than archival material, although all pertinent University records have been made available to me and former Principal Christopher H. Nicholl,* B.Sc. (Queen's, Kingston), M.A.Sc., Ph.D. (Toronto), Ph.D. (Cantab), has helped me considerably by digging out certain dates and events that needed clarification, as has Anna Grant of the Bishop's University Archives.

** The full name and university affiliations of each player in this account are identified once, usually at the first reference to each player, otherwise surnames only are used.*

The McGreer Years

Gestation and Birth

September 1935 marked the first time that students entered the then University of Bishop's College to begin a three year programme in pure science, leading to graduation with a Bachelor of Science degree. When registration was completed that year there were 117 students in Arts and Science, 15 in Divinity, 13 in Education and one M.A. student, a total of 146 students, taught by 13 instructors. The ferment that led to the B.Sc. initiative had been working slowly since 1925, when Albert L. Kuehner, M.A. (Queen's, Kingston}, a Chemistry and Physics graduate, was asked by the Principal, Arthur H. McGreer, M.A. (Toronto), B.A. (Oxon), D.D. to accept the post of Lecturer in Science. Assessing the subject of development at Bishop's, as elsewhere, it is difficult to weigh the influences of need, ambition, judgment and the availability of funds but it is clear that McGreer and Kuehner were two men of strong character, fundamentally different in most respects but both builders, the Principal with a minor concern regarding academic standards, the chemist with high academic standards and a strong desire to see a successful educational enterprise. Although Science had been a part of the curriculum for many years there was no such thing as a proper, regularly-scheduled laboratory period. In an early discussion McGreer was dismayed at Kuehner's statement that such laboratory periods were required and retorted, "Why, in the afternoon we play football." Kuehner held his ground, however, and won sanction for regular full-afternoon laboratory periods. That moment, I believe, marked the real beginning of effective Science education at Bishop's. Until then, also, "Natural Science" had been taught by a single instructor. Within his first year Kuehner was able to persuade McGreer to engage a second scientist. Maurice Home, M.Sc. (McGill), a brilliant physicist as competent in the handling of materials as ideas, but with less constructive drive than Kuehner, was engaged to begin his lifelong tenure at Bishop's, starting just one year after Kuehner's arrival.

As for the "availability of funds" issue, in 1939 or 1940 McGreer showed me sketches for building plans that he had drawn up shortly after his arrival in 1922, rather costly plans for that day, saying "When I showed these plans to the Corporation, most of whose members were clergymen, they threw up their hands in

holy horror. I resolved, then and there, to replace them with businessmen, as opportunity offered." As recorded elsewhere, McGreer did just that. He delved into the occupational records of earlier Bishop's graduates and sought help from a number of them who had become prominent, particularly in the business and professional life of Montreal. As I recall, he told me that when he contacted George H. Montgomery he found that he had virtually forgotten his early days at Bishop's. Nevertheless, he and others were recruited by McGreer, who exuded constructive enthusiasm. As the years of the decade passed the nature of the Corporation of the University of Bishop's College changed markedly. And so that day arrived, in 1935, when two strong men, supported by a greatly strengthened and willing Corporation, launched the B.Sc. programme at Bishop's.

In that first year of the B.Sc. programme, which differed in no way from an equivalent B.A. programme with Science courses except that neither Year 1 Latin nor Quebec Grade XI Matriculation Latin was required, three instructors, Kuehner, Home and A.V. Richardson, B.A. (Queen's, Cambridge), offered to Arts and Science students alike seventeen full-year courses in Biology, Chemistry, Mathematics and Physics. In addition to the Chemistry (Introductory, Qualitative Analytical, Quantitative Analytical and Organic) Kuehner taught a General Biology course in each of Years 1 and 2 and offered a single course in Geology. This workload, relieved only by Home's teaching of Physical Chemistry, is a good measure of the willingness of Kuehner to take on what would have been clearly recognized later as an impossible load, to fulfil his determination to see covered the subjects that were standard in the pure science programmes of the day. As far as it went, the programme was a reflection of the programme Kuehner knew well from Queen's. Unable to secure the services of a biologist for the 1936–37 session, he carried this load for an additional year. At this time Honours programmes were offered in Chemistry, Mathematics, Physics and Mathematics/Physics.

For many years Bishop's proudly advertised itself under the banner, "The only University in Canada following the Oxford and Cambridge system of three long years for the degrees of B.A. and B.Sc. Residential college for men. Women admitted to lectures." Granted that each instructor wanted his courses to be equivalent in accomplishment to similar ones elsewhere, the students were the victims of the absurd notion, freely stated within its walls, that Bishop's could accomplish in "three long years" (approximately

two weeks of additional lecture time per year above the Canadian average) what others took four years to accomplish. The Year 1 Science programme required seven full courses, including compulsory Divinity (two divisions and two exams) and English (three divisions and three exams) and three or four of Biology, Chemistry, Mathematics (three exams) and Physics. The accompanying multiple examination system seemed designed to compete for a student's time. I am convinced that introductory Biology, Chemistry and Mathematics were as demanding as those I knew as a Queen's undergraduate, where five courses only were required. The Bishop's course was indeed very heavy if conscientiously applied and followed. The pass mark was a low 40% but this had no real bearing on the standard of the education. Each instructor subjectively decided how high that 40% hurdle would be. This litany of unreasonableness does not necessarily reflect upon the quality and accomplishment of students or upon the value of the youthful Bishop's B.Sc. Every University has its relatively weak areas and its strong areas and a certain class of students is adept at finding the weak spots. A certain Bishop's student who found three lectures and a three-hour laboratory per week in Biology too demanding could and did transfer in February to Psychology (not taught by a psychologist), with one lecture per week, on Mondays, with Monday a favourite day for holidays. In general, students faced up to the programme. There were fewer distractions for them in those early days, no demand for students to be part of the University administration. A remarkable number of well-trained Science students, who showed up well in their chosen careers, emerged from the Bishop's B.Sc., even from its beginning.

Primitive Facilities

As the B.Sc. programme began, approximately 3700 sq. ft. of floor space was available for the laboratory and lecture room activities in the three experimental sciences. Chemistry occupied 1705 sq. ft. of space on the ground floor of the rear wing of the "Old Arts" Building of that day, a space exactly equal to that occupied by the library above until its move during the summer of 1959. A narrow corridor in the center of this space led from the hallway to a nearly square space with three of the standard high Chemistry work benches of the day on the west side and on the other enough long narrow benches and kitchen chairs to seat approximately 45 students. On one side of the corridor was a narrow room with a single counter and locker installation to accommo-

date four to six students. On the other side was a room of 13 ft. x 20 ft. or less. This served as a combined balance room (balances on a long central movable table), store room (cupboards and shelving on three sides) and an office alcove for Kuehner (a 3 x 2.5 ft. desk and a tiny bookcase). Kuehner was close to the action at all times. If the space where he often sat can be dignified by the term "office" then I am sure he was the first Bishop's professor to keep regular office hours, namely all day, every day, and until noon on Saturday, with few exceptions. No wonder, also, that, reliably present, Kuehner became McGreer's closest advisor and confidant on campus.

To discharge his duties in Biology Kuehner moved over, as required, to Home's domain, the cavernous basement space below the Convocation Hall wing of the "New Arts" Building of the day, a single room 32 x 59 ft in size. Home more or less rattled around in this undivided space, which allowed him to have out for simultaneous use a considerable variety of physical apparatus. On any one day many of these pieces of apparatus would be in use as he jockeyed the students from one exercise to another rather than have them all working on one topic at the same time. Here, too, were benches and kitchen chairs for lectures and some space had been set aside for biological materials. Recognizing the need to include Biology in a pure science curriculum, Kuehner had taken a Summer School course in Biology at Queen's and indeed offered the first two years of Biology, concentrating on macro studies in both years, but giving Year 2 students some experience with the microscope. This was a very difficult task since the University owned just one first class compound microscope and three of lesser quality. Kuehner's hope had been to engage a biologist to begin in September 1936 but his plans were delayed. During the 1935–36 session Professor W.T. MacClement of Queen's mentioned to my father that he had just recommended me for a teaching position at Bishop's but the session passed without any further word regarding it. I asked no questions but, in the course of a motor trip to Nova Scotia during the summer of 1936, did arrange to pass through Sherbrooke and Lennoxville and to glance, just from the road, at the old-fashioned buildings at the confluence of the St. Francis and Massawippi Rivers. It was well along in the session of 1936–37 that I finally heard from Kuehner. I was soon invited to visit Bishop's and to be considered for a position as the first biologist, who would give the third year of instruction to those who had already completed two years of Biology. Fresh from

the recently and greatly expanded facilities of the Department of Botany at Toronto, my heart sank when I saw the Bishop's facilities in the spring of 1937.

First Biologist Appointed

Some years passed before I understood the ins and outs of my appointment at Bishop's and especially of the correspondence that preceded it. My employment ambition had been to function as a plant pathologist, preferably breeding agricultural crops for disease resistance. Positions were scarce. I was advised to accept the teaching position, if offered, with hopes that employment opportunities in plant pathology would improve in a couple of years. When Kuehner had satisfied himself that he wanted me to be appointed he advised me of a final hurdle to be met during the afternoon following our interview. He advised that when I went to meet McGreer he would surely make reference to the fact that all members of the faculty were expected to attend Anglican chapel services twice a week, that he would ask me if that circumstance was acceptable to me and that, if I wished to join the Bishop's faculty I would indicate my acceptance of the circumstance. At tea, just as indicated, McGreer referred to the chapel services, said both students and faculty were accustomed to attend, turned to Maurice Home and asked "How often do you go to chapel, Professor Home?" "Twice a week, Sir," replied Home and, as McGreer turned back to me, I indicated by some expression, detail now forgotten, that that suited me. That and small talk are all I remember from this first meeting with the imposing McGreer.

The timing of some of these events is vague now but in one letter Kuehner wrote that the "appointee might be required to give some assistance in the Chemistry laboratory." In a following letter he enquired if I might be able to teach some German. I replied that although I had studied some German for a few years it would be a very poor arrangement to inflict me upon those aspiring to learn German. The matter was dropped. Later, I learned what had happened. Kuehner had been able to add a physicist to his Department of Natural Science and was about to add a biologist. Professor Frank O. Call, M.A. (Bishop's) was overburdened with teaching duties in his Department of Modern Languages and, having failed to obtain help therein, made the attempt to get "a piece of the new man." My surmise is that when he petitioned McGreer on this subject, McGreer asked Kuehner to see if I would be able to teach some German, possibly knowing the answer in advance.

(Parenthetically, it may be noted that when Call secured the services of Eric Yarrill, M.A. (Toronto), just one year later, his own salary was debited by enough to pay Yarrill's salary.) I learned also, some time later, details as to choosing the particular scientist who might be grafted into the Department of Natural Science. There were two biologists on the short list of candidates, J. M. Honeyman, an Anglican zoologist, and myself, a Presbyterian botanist. Kuehner leaned to the botanist, possibly partly because he, too, was a Queen's graduate but probably more because of the botanist's likely choice of materials to work with. Dear knows what a zoologist might wish to do with animals! McGreer solved the problem and the position was offered to Honeyman. Unfortunately, by the time this decision had been made, Honeyman had signed a contract with Commissioners High School in Quebec City, a contract that the Commissioners would not rescind. Thus the Presbyterian botanist was appointed.

On the eleventh day of September 1937 I arrived in Lennoxville with the mandate to develop the programme in Biology. On the twelfth of September Kuehner and I visited the nearby Johnville peat bog, with its protected open lake in a black spruce-tamarack forest, an area destined to serve generations of our students as a field trip locale and, later, as a study area for undergraduate ecological projects, a research locale for three M.Sc. candidates in Biology and, still later, as an excellent entomological research site for Dr. Donald F. Hilton B.Sc. (Alberta), M.A. (Kansas), Ph.D. (Alberta), D.I.C. (London).

Facilities, Costs and Fees

Home and I settled into the joint occupancy of that large New Arts basement room which had to accommodate all the Physics lectures, most of the Biology lectures and the laboratory work in both subjects. Biology got established in one corner with six or eight four-legged tables, each large enough to seat four students for microscope work. The one major provision of biological equipment before the opening of classes had been the purchase of 25 first class Spencer compound microscopes (400x) at a cost of $65 each, F.O.B. Lennoxville, from Central Scientific, Toronto. The manager, Mr. F.J. Dudycha, had explained to me the arithmetic error in quantity discounting whereby we had been quoted the same total price for 25 as for 20 instruments. With a quotation for Leitz microscopes of similar quality at $65 in hand I said we would not hold Cenco to its quotation. As I was about to leave, Dudycha

said he wished to call Spencer in Buffalo. They promptly agreed to the $65 price. So it was that the Spencers arrived during the summer and we had the satisfaction of buying on the North American continent instruments with a reputation equal to those of Leitz and closer to repair facilities. These sturdy compact microscopes were still in use in the late seventies and I do not recall any need for repair of a single instrument.

The use of the microscope was quite another matter. This was a day when Christie Sorensen, the carpenter/maintenance man, was not allowed to have any power tool (also the period in which night workers moved from building to building stoking seventeen furnaces) so materials for the four-legged tables were fashioned at Mark Bennett's shop across the Massawippi and put together by Sorensen and Bennett. Permission to purchase adjustable stools for microscope use had been denied, in spite of all I had said about them being a necessity. Instead, we had kitchen chairs. My solution was to place between pieces of corrugate from cartons enough newspaper to make firm cushions ranging from about two to six inches high and bound in two directions with heavy cord. I caused each student to determine the height of cushion that would bring the eye to the correct spot just above the microscope eyepiece, so that the student could use the microscope for extended periods of observation without back strain and with arms comfortably placed on the table for convenience in drawing. Each day each student would pick up from the pile in the corner a cushion of the height found to be appropriate. Twenty students thus seated presented an unusual sight! The news traveled. Not too many weeks into that first term Kuehner came in to a Year 1 Biology period, watched quietly for a while, queried "You really need those stools, do you?" I replied "That's what I said." It was not long after this visit that I received authorization to buy 25 adjustable stools. I still have a record, in a card index of equipment sources, which reads "special revolving stools with 13" dished seat, piano stool adjustment, minimum height 18", maximum height 24", plain round legs, rodded diagonally with two rods, walnut finish, $3.80 each (Quantity discount from $4.15), F.O.B. Lennoxville, tax paid. S. Webster, Esq. Special Contract Division, Robert Simpson, Toronto." How our concepts of price and value have changed! Years later, when we needed additional stools for larger laboratory facilities, I phoned this same Mr. Webster, who could only report that such a simple effective stool was no longer made.

As my first year started there were perhaps a dozen prepared microscope slides that I considered useful. Until such time as proper slides could be obtained, and in quantities enabling simultaneous study by 24 students, we used slides borrowed from the University of Toronto and made freehand sections of some materials. Preparing freehand sections from material mounted in a slit piece of pith, using a straight razor, is difficult for most people. However, I will always remember the interest of Andy H. (Bud) Visser in the procedure. I demonstrated the method. He immediately started producing first class thin sections, demonstrating, perhaps, the touch that led him into surgery.

In that first year there were certain days when the biologists might be working in the north-east corner of the room while Home had part or all of his Year 2 Physics class moving freely throughout the rest of the space. On most occasions it seemed that several students had to crack a lot of ice for their experiments. There was no privacy for voice or buffer against noise.

The year passed, students were trained. Memory of the fine quality of most of these students remains. As that year passed equipment was gradually assembled to enable our offerings to be improved somewhat.

The funding of the experimental sciences was strange indeed and perhaps inadequate. There was a levy of $2.00 per student per course in each of the year's three terms and from this we were expected to buy whatever was needed for laboratory studies. The bookkeeping in the Bursar's office was complicated, causing Stuart Sanders to bill parents three times a year. This primitive system continued until 1953, although the charge per term was increased to $2.50 in 1950 and to $5.00 in 1953. It then ended with the imposition of a flat extra fee of $35 per year for each Science student, this figure representing a reduction of charges to most students. Departmental budgets in the modern sense came some time after 1959. We managed. Home, by general consent the most brilliant of the Science instructors, was noted particularly for his skill in building equipment that the University could otherwise not afford, as well as for his recognition and nurture of the brilliant among his students. When a large shipment of surplus material became available to him at the end of the war his scope in improvisation was remarkably extended. Home was quiet, even somewhat retiring, and few would know of his skill as a pianist, enjoying his hobby quietly at home. He was also competent as a photographer and in this capacity was called upon to photograph the

first $1,000,000 cheque to reach Bishop's, from the government of Maurice Duplessis. A true physicist, when he came to suspect that his weight loss might be due to diabetes, he eschewed any chemical test for sugar in his urine: he simply diagnosed his condition by running a test on the optical rotation of polarized light caused by sugar in solution. He had a very acute sense of humour, expressed chiefly in recognizing humour just as it presented itself. I do not recall him ever telling a joke that was second hand or known in advance. His was on-the-spot humour. One example must suffice. In my first year of teaching the maximum score made by a certain young woman in three separate Year 2 Biology examinations was 21. During the year-end review of examination results I asked "How did Miss X ever get into Year 2 Biology?" The reply came promptly, "Because she failed Year l," and just as quickly Home added "And now that she has failed Year 2 I suppose she has to take Honours...." The explanation, given later, was that at that time all Arts students proposing to become teachers were required to include two years of a Science subject, it being provided, however, that gaining a second class standing in Year 1 exempted the student from the Year 2 course; so, having failed Year 1 with Kuehner, Miss X did indeed have to register in Year 2 Biology.

Kuehner was a great conservationist, saving everything that could be useful later. His supply of empty bottles had been thoroughly cleaned, even to several rinses with distilled water. He was the advisor to the Science Club, which lasted several years, until the spring of 1938. At one of its meetings he would publicize a whole series of events and inventions in the chemical world that were relevant to every day living. He did his best to control the population of mosquitoes in the environs of the University, lightly equipped to dispense into the numerous water-filled hollows of that day, when a tiny stream coursed between the theatre and the future site of the Johnson Science Building, a single drop of a compound he had calculated would make a monomolecular surface film, robbing the mosquito larvae of the surface tension needed for them to keep respiratory contact with the air above. In spite of his heavy academic load he came to the assistance of Mr. Bob Boright, owner of Quebec Maple Products, working out a method for the removal of lead from maple syrup. He arranged field trips for Science Club members, notably to the mines at Thetford and Eustis. Trips to the Eustis copper mine had to be abandoned as the company moved towards closure, the mine so deep that it was no

longer feasible to allow students to descend to the working level unless they were prepared to stay below all day in a mine said to be the second deepest in the British Empire at that time. When the mine finally closed Kuehner obtained for a pittance the entire remaining large supply of chemicals. Similarly, later, the biologists were able to obtain cheaply a large proportion of the equipment of the Hendry Connell Research Laboratory in Kingston when it closed. Kuehner was able to divert some of the laboratory fees towards the purchase of Chemical Abstracts. His far-sightedness in this respect was appreciated many years later during the flowering of Science. In those early years the annual library allotment was ridiculously small, as little or less than $50 per individual. (I do believe the amount was as low as $35 but am positive of the $50.) The available total was divided simply on a per capita basis, with no assessment of need. Richardson of Mathematics typically under spent his allotment and was the best bet in begging for unused funds. The judgment that the use of the library by Science students was not very great must be accepted. There were very few Science periodicals available to students; indeed some of us subscribed to more journals than did the library in corresponding subjects. Selected items from our holdings were drawn to the attention of students. The one relief from these financial constraints was that a new faculty recruit was normally given a once-only extra library allotment, mine being $500 for the year 1937–38.

The summer of 1938 brought separate laboratory space for Biology and Physics. Where to erect the separating partitions presented a problem, with both participants presenting overlapping claims to the jurisdiction of Kuehner, still the Head of a Department of Natural Science. From the 1888 sq. ft. of available space a lecture room of approximately 458 sq. ft. was to be cut out next to the basement corridor and equipped with the unaltered complement of long benches and kitchen chairs. That left approximately 1430 sq. ft. to be apportioned between Biology and Physics. At the on-site meeting to deal with the problem, Kuehner finally ruled that since the physicist, Home, had been on staff for some years his view should prevail. So the division was made, approximately 400 sq. ft. for Biology and 1030 sq. ft. for Physics.

Steps away from Insularity

The University of Bishop's College of 1938 was indeed an insular institution. At this time the small structure that stands between the Norton and Pollock Residences at the south west corner of the

quad was a "gymnasium." It also served as a locale for University plays and for musical events such as presentations of the Hart House String Quartet. Some of the general public attended these two sorts of performances. Otherwise the University seemed to be a thoroughly introverted organization. Canon E. K. Moffat, M.A., B.D., whose parish was in east Sherbrooke, walked to and from the University on the back road, even in winter, in his well-known Persian lamb cap, to get to his lectures. Education's Dr. W.O. Rothney, M.A. (Chicago), B.D., Ph.D. (Hartford), who was little seen on campus except at faculty meetings, lived in Sherbrooke but Maurice Home was the only one of the remaining faculty of fifteen who did not live on campus.

Bishop's went its way, virtually independent of the community. One year of residence in quarters in Divinity House, together with a growing appreciation of this insularity, was enough to persuade me that my wife and I should seek living accommodation in the town, and this we did, followed soon by the Prestons. Even in church matters Bishop's was isolated from the Lennoxville parish. Kuehner advised me of this situation as soon as he learned that I was to be married, advising that my wife would be asked to join the campus Church of England Women's Association and adding, "It's practically a command performance." Faculty wives of any denomination were drawn into this small isolated unit which carried on independently from a similar unit in the Lennoxville parish of the same denomination.

I remember well when Alex Sims of Macdonald College appeared at a faculty meeting soon after my arrival to explore our interest in Adult Education. His presentation drew no spark of enthusiasm, no offer of co-operation. Sims rented a room on Clough Avenue and for some time sought to foster Adult Education from that point but nothing of any moment developed and his participation did not extend far into the war years.

Two years after the initial inclusion of the above three paragraphs I noted, in Christopher Nicholl's *Bishop's University 1843–1970*, the critical 1876 statement of Henry Roe, one of the most loyal and hard-working alumni of Bishop's, directed to the Bishop of Quebec, claiming that the institution "has hitherto stood before the people of the country as a sectarian institution, full of narrow prejudice, foreign in its tastes and feelings, animated by no generous sympathy with the great body of the people in their struggles, and feeling no desire to come down among them, adapt itself to their wants and win them." Little had changed in

sixty years until McGreer gained momentum.

Back to the late thirties. Still later, at one of those minute-less faculty meetings, McGreer advised us of an invitation to send a delegate to Montreal to hear about the Province's plans for provision of health units throughout the Province. No one responded to the invitation so finally I spoke up and said I would attend. It was that meeting that opened my eyes to the desirability of the University developing more relations with the outside community.

Some dates of the following items are vague and some extend beyond the McGreer era. My next external foray of any consequence was in connection with the organization of the Lennoxville and Ascot Community Association, the self-designated mandate of which was to delve into any aspect of community development, to make recommendations and to try to influence the actions of the Town Council and the School Board. This association wrestled with the problems of bilingualism and inertia and passed into oblivion soon after its most capable President, a Mr. Melton, decided he could not waste his time with a School Board as unresponsive as that of Lennoxville.

In 1955 the Biology Department was involved in the formation of the natural history group that eventually incorporated under the name "St. Francis Valley Naturalists." Meetings were held in the University. The group not only brought outstanding wildlife film makers to University audiences but for many years organized visits by such professionals to schools and other groups geographically as separated as Quebec City and Toronto.

By contrast, leadership in the Faculty of Arts to move out into community involvement was first provided by Donald C. Masters M.A. (Toronto), D.Phil. (Oxon), the historian who joined the University in 1944. Not long after his arrival he promoted the organization of the Sherbrooke/Lennoxville chapter of the Canadian Institute of International Affairs, which brought many of the community into intellectual rapport with University faculty. The chapter endured.

When a second post-war attempt was made by Macdonald College to promote Adult Education in the Eastern Townships it was members of the Science group, McCubbin, Mrs. MacIntosh and I, that co-operated with community members to set up the Eastern Townships Committee for Adult Education. We recruited instructors and speakers and managed the finances. After three years or so we decided we could expand the offerings, take programmes to rural areas in the entire district and engage an

Executive Director, recommended highly from Macdonald College. We helped to raise the $5000 needed to start the new dispensation, with an agreement that the Director would be housed in the University and that we would develop, among other things, a Film Society promoted among the general public. Dr. Jewitt was to be present at the initial meeting, to which all in the area who had ever shown an interest in Adult Education had been invited and at which the Executive Director would be introduced. They came in excellent numbers, delighted with this initiative in the University. However, the Principal failed to appear, the Executive Director was most unimpressive and it was soon apparent that the leadership from Macdonald College had not assessed well the man praised as just what we needed, a man who had not appeared before the Executive, whose members were absent during the summer months immediately before the appointment. Interest in the entire programme wilted and in a year's time neither the University nor the Committee was willing to provide or seek funds for it's continuation.

Biology exhibitions, discussed elsewhere, were another important action from Science to involve the community in the University. The insular attitude of the day is perhaps best characterized by the remark of an internal visitor to the laboratory during the intense preparations for the first exhibition in 1946: "I don't know why you are spending all this time preparing; no one will bother coming."

McCubbin stepped into the community with his very successful development of the "Deep Purples," an accomplished group of choral singers who not only performed within the University but in Montreal and at various High Schools. Without doubt, McCubbin's outstanding success in this venture helped to draw students to Bishop's.

As is well-known today the University's initial insularity gradually disappeared. The story of its extensive involvement in the community in later years, e.g. in the provision of night courses, Summer Schools and many other activities, initially stimulated by Bursar Lyman Tompkins, is of course recounted elsewhere.

Space, Programmes and External Support

As the 1938–39 session opened, Physics was contracted to a little less than 75% of its former space. Biology had moved from its open corner into its little rectangle, able to seat 24 students at once, with a few feet of loose space and the luxury of a small

Chemistry-style sink and running water. There were no lockers but we had a run of shelving, a wall cabinet holding 24 microscopes and a bank of open pigeon holes above this cabinet for the storage of dissection sets, slide boxes, microscope cloths and sundries for all students. There was no such thing as a lock in either the Biology or the Physics quarters, yet the years passed with no thefts of dissection sets or any similar action to make the system unsatisfactory.

One hundred and sixty students were in attendance during the academic year 1938–39, 86% of them resident in the Province of Quebec, but few of them from greater Montreal. The percentage of students registered in Arts and Science was similar, 86%. Of these 138 students 113 graduated that year or later, 75 of them in Arts and Theology, 38 in Science. Of the 68 course registrations in Biology that year 50 were registered in Science, 16 in Arts, one in Theology and one was a partial student. With a reading course and four courses requiring regularly scheduled full afternoon laboratory periods per week, that of Year 1 in two sections, my teaching load included five laboratory periods per week, without providing for Genetics. The Genetics work was done on a project basis, on the student's own time, with consultation as needed.

Nowhere among the three experimental sciences of that time was there a secretary, any preparer of laboratory materials or any cleanup help beyond the dusting and sweeping carried out by scarcely supervised janitors.

Biology's challenge at this time was to catch up with the stable and well-organized programmes in Chemistry and Physics, a process that could never be completed in the small space then available. How to teach the Plant Physiology section of one senior course in such a situation presented a real problem. I decided to concentrate on a few simple things, with major effort going into determination of the rate of water uptake by potato discs suspended in water, various sugar solutions and auxin solutions, in ten-gallon aquaria. The equipment needed was, in addition to potatoes, a cork borer, a home-made guillotine, frames fashioned from silver wire and our one and only triple beam balance. The two students learned care and precision of observations. Gradually, in later years, we acquired the equipment necessary to carry on such a course with more traditional laboratory work. In retrospect, however, our primitive situation was quite effective from the point of view of training scientists, even if their practical experience was narrow.

The Science courses offered at this time were almost parallel to those given in the medium sized Canadian universities of this period, reflecting considerably the undergraduate experiences of the instructors, still numbering one per discipline.

Biology. After Year 1 General Biology and a Survey of the Plant Kingdom in Year 2, biologists took a Survey of the Animal Kingdom, Genetics and a combined Plant Anatomy and Physiology. Although a botanist, I sought reasonable stress on matters zoological, the balance being achieved partly by the almost exclusively zoological practical work in Genetics. Consultation with others led me to select the dogfish shark as the most effective vertebrate material for dissection after Year l. Before the supply of dogfish arrived I had not yet seen my first specimen, dead or alive. During the approximately five weeks allotted for dogfish study I carried out my own familiarization studies in the evenings, just one step ahead of the students and found the material both interesting and rewarding. Biology students found great stress placed on competent microscopy and on drawings of microscopic observations and dissections, this drawing requirement proving to be a great stumbling block for many students who found Biology otherwise an interesting subject.

Chemistry. Following Introductory Chemistry of Year 1 and Qualitative Analysis of Year 2, chemists took Organic, Quantitative and Physical Chemistry. In this situation Kuehner shone as a dedicated and careful analyst and expositor who encouraged students at all levels to do their best. His lectures were particularly lucid and delivered at a very moderate speed, which he said was thrust upon him as the only one that would fill the lecture time with the amount he could prepare properly when he had so many new lectures as a freshman lecturer. In addition he had sat, chemically, at the feet of Arthur C. Neish of Queen's, who was normally accompanied in lectures by his lab assistant, Paddy Doolan. While Neish lectured, Doolan assisted in the preparation of visual demonstrations of many of the reactions Neish was considering. Kuehner, alone, carried this system into the lecture room and, particularly in Qualitative Analysis, demonstrated a whole battery of procedures as he lectured.

Mathematics. Mathematics students, following the three-part, three examination Year 1 and Year 2 courses in Mechanics (taught by Home for many years) and Analytical Geometry and Calculus, were all required to take six third year courses, not succinctly named but including Algebraic Series, additional Trigonometry,

Curves, Advanced Calculus, Applied Mathematics and Modern Pure Geometry. A course in Applied Calculus was provided for Chemistry/Physics students and one more course for Honours students.

Physics. Physics students, following the introductory year, took Heat, Light and Sound in Year 2, Modern Physics and Electricity and Magnetism in Year 3. I have already referred to Home's ability in improvising equipment and his management of a several-ring circus of experiments and measurements in his laboratory. At this point, in all of the three experimental sciences, there was no offering that could be described as innovative.

The B.Sc. programme had been launched near the middle of a relatively long period of stability at Bishop's. Far-reaching trends were simmering towards its end but the big change was still to come. Following his early plan, McGreer had added such prominent business and professional men as Edward W. Beattie, George Chahoon, Grant Hall, Frederick E. Meredith, Andrew S. Johnson, Walter Mitchell, Walter Molson, George H. Montgomery, Harry A. Norton, John H. Price, F.N. Southam and Senator Smeaton White to the Corporation by 1930 and was undoubtedly happier dealing with the altered Board than with the clergy-dominated Board in place when he arrived. There followed a period essentially without change until John Bassett Sr. and Steven Newton were added in 1940. The B.Sc. was launched with the participation of a Board that was receptive to the plans and aspirations of scientists. The faculty complement had been stable for ten years at 13 or 14 and, apart from my arrival in 1937 and that of Eric Yarrill in Modern Languages in 1938, it remained stable until 1945. Not even the war disturbed the stability and tranquillity of this period except in a quantitative way. Indeed the stability continued after the war until 1949.

Reasonably, Geology had been dropped as an option in the Science programme and a few courses were added through the coming of a biologist. Otherwise, the course offerings in Mathematics and Science were essentially unaltered until 1948, when a course in Thermodynamics and Kinetic Theory was added to the Chemistry programme. In most of the years in question not a word of the calendar descriptions of Science courses was changed.

The War Years

With the coming of the war, registration in Science declined drastically, as did that of the University as a whole, but the programmes were maintained. After all, apart from English and Theology, there was one instructor only in each discipline. As nearly every student was enroled in the C.O.T.C. programme, which required of all ranks three half days of drill and/or instruction, the outstanding effect of the war upon those still in attendance was an almost impossibly heavy combined military/academic load. The course load in Science, as we attempted to produce adequately trained graduates under the "three long years" system which the University advertised as if it was an advantage, had already been too heavy. During the war years an Honours student in Biology and Chemistry or in Chemistry and Biology, the two programmes most demanding of a student's time, had the equivalent of five full afternoons of laboratory study per week, in addition to three half days of C.O.T.C. The only way to carry on was to adjust the time table so that students had 9:00–12:00 and 2:00–5:00 laboratory periods on Tuesdays and Thursdays and one of the C.O.T.C. sessions at night. In addition to these eight major sessions such Honours students had more or less back to back lectures. My admiration of their dedication is unabated. This was a time of great accomplishment and of exceedingly close relationships between faculty and students.

It was approximately half way through the war when a military delegation from Ottawa met with the Science instructors in McGreer's office, urging us to dissuade Science students from enlisting in the armed forces. I recall asking the Officer-in-charge if he was aware that service in the armed forces gave an applicant for a Civil Service position 50 points of a possible 100 (He was.), then asking if it would still be appropriate for me to dissuade students from enlisting. He replied that that was no problem as there would be no reason for such graduates to apply for Civil Service positions. I then said, without further explanation, that I was a biologist. (I had been reflecting upon the fact that nearly all employment of biologists at that time was in teaching or in government service.) His rejoinder was simply, "Oh, too bad." Our students continued to enlist from a good, active C.O.T.C. programme and the number of students, mostly women, remaining in the University declined to 97, from 37 to 40 of them in Science, in 1943–44. (The records of this period are incomplete.) This was the low ebb in the development of the B.Sc. programme.

Mathematics and Chemistry were compulsory subjects in both Year 1 and Year 2 and during this period more students chose Physics than Biology, with more in the Chemistry/Physics combination than any other. In this ebb year, but only in that year, there were no Year 3 students in Biology, with the result that I relieved Kuehner's load by teaching his Qualitative Analysis course for the year, fourteen years after my last contact with the subject at Queen's. I gave it the "dogfish treatment," working very hard to keep ahead of the 16 students.

The Latin Problem

McGreer had embraced the concept of a B.Sc. degree, but not for the reasons that would appeal to a scientist. He was a strong advocate of the teaching of Latin, particularly at the High School level. For many years he opposed vigorously and successfully any idea of accepting Latin-less students into the B.A. programme. However, High School Matriculation with Latin had been perceived as a declining attribute of those who might otherwise have sought entrance to Bishop's. A B.Sc. programme with no Latin matriculation requirement was seen as a device that would bring more students to Bishop's without compromising the Arts programme. Without doubt McGreer was a builder and through the B.Sc he could continue to build without sacrificing a concept that was dear to him. The "uncultured scientists" could proliferate as long as the Arts students continued to come, suitably prepared. However, McGreer's Professor of Education, Rothney, sole and effective supervisor of teacher training, worked assiduously at cross purposes to the Principal, sending out to become Principals of many of the off-Island High Schools of Quebec, a series of able teachers, almost entirely men, who helped to reduce the teaching of Latin towards zero. One of his ploys was the distribution of a list of fifty absurd reasons for studying Latin. His campaign was effective.

It is probably true that in 1940 and thereabouts the best qualified students were likely to have Latin as a matriculation subject if it was still offered in the High Schools they attended and some of these chose to enter the B.Sc. programme. In those days McGreer registered each student personally and wherever possible he pushed high-standing Science aspirants into a B.A. course identical with the B.Sc. except for the requirement of Latin in Year l. One day I asked Stuart Sanders, the Bursar and Registrar, for a transcript of the record of Elizabeth Macdonald, II B.A., in connection with

her application for summer employment at Ottawa. Sanders assured me that Elizabeth was a B.Sc. student, that her father had come to him in the first place, arranging that his daughter would enter the B.Sc. programme, yet he finally found her record under II B.A. Later, I learned from Elizabeth that the situation was exactly as reported by Sanders but, at registration, McGreer simply registered her as he wished, I B.A. After all this, and having gained a certain aplomb in the interval, Elizabeth had her registration changed to B.Sc. Constance Loveland of Sherbrooke had a related experience. She and her father visited Kuehner during the summer of 1945 to discuss the feasibility of entering the B.Sc. Kuehner asked many questions until such time as he had apparently decided he would like to have this young lady as a student. Then he advised her to be very firm and determined to make sure that McGreer did not register her in Arts. She was firm. Kuehner's judgment was also good. She was my first marking demonstrator in Biology, she accompanied me to Kingston to serve as an undergraduate demonstrator at the Queen's Summer School, she graduated with Honours Biology and Chemistry, took a Masters degree at the University of Toronto and served many years in Ottawa as a mycologist.

The fundamental Latin problem did not disappear with the development of the B.Sc. programme. The proportion of students arriving without Latin continued to decline but this was no guarantee that they would all fit nicely into Science. It is perhaps not surprising, given the diversity of Arts programmes, that a student who had not done well in what we referred to as the "hard sciences" of High School, especially Mathematics and Physics, had a better chance of finding an easy path through some B.A. programme than through two of Biology, Chemistry, Mathematics and Physics, with Chemistry and Mathematics compulsory in all Year 1 programmes. Without Latin, choice was limited and the prognosis of failure seemed greater in Science than in Arts. And so, I believe to keep the numbers coming in the face of declining Latin matriculation and to retain the mystique of Latin-requiring Arts programmes in general, a B.Sc.(Econ.) programme was designed as an avenue for those Latin-less entrants who were not prepared to face the regimen of the standard B.Sc. programme. What a hybrid programme it was! Listed under an altered departmental name, Philosophy and Economics, it included three Economics courses in Year 3, Economic History and Theory (exclusively European), Political Science and a Reading Course, all

taught by a philosopher/theologian, and with no engagement of an economist to develop the programme. The programme began in September 1942 and was advertised in the calendar without change until 1948, appropriately disappearing on the eve of the big change at Bishop's. Very few good students had entered the programme and they stood out remarkably from the general run of their classmates. A B.Sc.(Econ.) student who included Biology in her programme faced the question included in the annual survey of the status of students beginning Year 1 Biology, "Are you satisfied with the programme you have embarked upon?" She gave a clear "No." Later, I asked her how she happened to get into the B.Sc.(Econ.). A local farm girl, she had attended the Ascot Consolidated School, where Rothney supervised the practice teaching of prospective teachers. This young lady told Rothney that she wished to enter the B.A. course at Bishop's and enquired about the necessary Latin. Rothney assured her that by the time she reached Bishop's there would be no requirement of Latin for entrance to Arts. All I could say was that I thought Rothney was two or more years out on his prediction. In 1949 the B.Sc.(Econ.), the last vehicle to be used to attempt to save Latin in the Arts course, ended its short and undistinguished life. *Sic transit gloria!*

Simple arithmetic was responsible for the final assault on Latin as a compulsory subject for the B.A. During the autumn of 1947 W.O. Raymond, M.A., Ph.D. (Michigan), long-time head of the English Department, brought to a faculty meeting a set of figures for the past ten or so years showing the numbers of Quebec Grade XI matriculants and the numbers of these with matriculation in Latin. The trend was so obvious that he was able to convince McGreer that if the current regulations were continued for a few more years the Arts programme would no longer be viable because of a lack of qualified students. It was proposed that A.W. Preston, M.A. Edinburgh), M.A. (Oxon), Professor of Classics, teach a course in Greek Civilization and a course in Roman Civilization as compulsory courses for Arts students. This plan was accepted. In Mathematics and Science five of the total faculty of 15 had supervised the studies of the 23 students who graduated in Science in 1948 while 20, 3 of them students of Science, graduated in Arts. For the next two years the corresponding figures were 23 Arts/29 Science; 22 Arts/26 Science, as the Latin-less students worked through the system. The new regulation once again placed Arts on an equal footing with Science in the recruitment of students and almost immediately the relative numbers of Arts students

increased dramatically. So McGreer, close to the end of his long tenure as Principal, embracing Latin with might and main, accepted the inevitable, the universal trend away from classical studies. Preston's Civilization courses proved to be very popular and without doubt did more for the culture of students than the Latin courses of previous years. Furthermore, various students in Science took one or both of Preston's courses as electives.

Space and Isolation

Biology, seeking to develop a Biology and Chemistry Honours programme, had the greatest need to seek additional space after the 1938 partitioning of New Arts space. Not long after that we fell heir to a tiny unused basement space entered from behind the stairs. A floor was put in to cover some pipes. We had enough room for a home-made tentest incubator, regulated by a commercial chick-brooding thermostat, perched on one of the old examination tables, room for two genetics students to work at once, a run of shelving and an old desk that helped to provide the feel of an office and sometimes a degree of privacy. Later, down the hall in an abandoned toilet room from the days when Bishop's College School occupied the building, we were able to take over two marble-sided denuded toilet stalls and fit them with shelving, to serve as a storeroom. Still later, when I had become 2 i/c of the local C.O.T.C. contingent under Major C. Howard M. Church, I was, because of my dual duties, able to get, at the other end of the basement corridor, a small room which constituted the first private office for any member of the faculty, a room also provided with a telephone, paid for by the C.O.T.C. When the C.O.T.C. was disbanded Dr. Jewitt, the new Principal, would not allow the phone to be paid for, stating that a phone for one would mean phones for all. Through all these earlier years the Science instructors, with their needs for ordering equipment, some of it locally, had been obliged to go to one of the two phones in administrative hands, that of the Bursar being the most accessible. It was many more years before each instructor had a private office and telephone.

In general, the four Science instructors of this period carried on in almost complete independence, even though three of us were in a single department, Natural Science. There were no interdisciplinary questions about course content, or even about the choice of courses to be taught. One effect of this independence was that each instructor developed the sequence of teaching in his subject partly as normally done elsewhere and partly as a reflec-

tion of his own choice. The result was what the instructor conceived as the best sequence for training a student in his discipline alone. Little attention was given at that time to the needs of one's subject by students of other subjects. Of course the pure mathematician had no need of knowledge of Physics, Chemistry and Biology but these three had their individual external science needs. If students in one discipline could be assisted by knowledge in another discipline it was largely chance that brought this knowledge at the most appropriate time. Well-trained biologists have an early need for a grasp of organic chemistry and later need knowledge of statistics, for example in the study of genetics. In the forties there was no teaching of statistics at Bishop's except for the little that was included in the genetics course. There is no possibility of understanding cell biology without knowledge of diffusion through membranes and of knowledge of organic chemistry but first year students registered in Biology and Chemistry met organic chemistry, at the hands of chemists, relatively late in the year. As the years passed, basic biology, as taught, became more and more chemical. The result was that the best textbooks in biology increasingly presented more and more chemistry immediately after the introduction to biology. So it is that an introductory biology text which we used much later, which I have before me as I type, introduces biology with 14 pages, follows with 30 pages of mostly organic chemistry and, in addition to a portrayal of cell structure and function, has 35 more pages dominated by chemistry before getting down to the functional biology of organisms.

Once the year's time table had been agreed upon, there was no call for a meeting of the four instructors in Mathematics and Science before the formal meetings of the entire faculty, one in December, the other at the end of the session, at which the academic fates of the students were decided and names of award winners determined. I am unaware of any records of deliberations of the four. Richardson, of Mathematics, collected all the year-end lists of the marks of students, preparing the material for the decisions of that crucial faculty meeting. So far as I am aware, there are no records of any faculty meetings of this period other than those dealing with the December and final examinations. The faculty did meet regularly during the McGreer years after dining in hall on Monday evenings, retiring to the crowded smoke-filled room southwest of the main corridor crossroads of the Old Arts (now Champlain's) Building. Behind a closed door coffee was served and the Principal chaired an informal meeting at which current issues were raised.

Tact and the Gathering Storm

One very personal event in one of those meetings bears relating, just for the record. The University Calendar for 1937–38, which I studied carefully before arriving at Bishop's, was indeed a confusing document, at least to the uninitiated, including the total absence of course numbers. I felt that it needed an extensive overhaul and, one day, went to see the Principal about it. He said he would bring the matter before the next faculty meeting. I said that I knew very well that a freshman lecturer should be very quiet at the outset and would he please make no reference at the faculty meeting to my visit. At that next faculty meeting he began by saying "Dr. Langford has been to see me about a need to revise the calendar." The fat was in the fire, any hope of being considered tactful gone. Several members of faculty pounced on me verbally for my unwarranted attack on perfection. When I had been thoroughly chastised some others ventured the opinion that it might nevertheless be a good idea to re-consider the content of the calendar. The Principal appointed a committee but we never heard back from them. During the spring term we were called upon for calendar material and, in due course, informed that the galley proofs were available for checking in the Principal's side office. The confusion had not disappeared: and so I reappeared before the Principal to say that an extensive overhaul was still needed. He asked to be shown details. I obliged. He turned to me and asked, "Langford, will you take over the job of seeing the calendar through with the printer." I agreed and did so, even to the choosing of consistent type style and indentation to present a logical, orderly view of the University and its offerings. Not until some years had passed was I told that producing the calendar had been the personal responsibility of the Principal. He just happened to be too busy with more important matters to give it much attention. My effort in tact had failed and he had figuratively thrown me to the wolves at that early faculty meeting. I edited the calendar for many years after that time.

The treatment accorded to a single Science student at the year-end faculty meeting of 1945 and immediately thereafter catapulted the faculty into a crisis situation which changed some relationships permanently. When the time came to award the G. Howard Ferguson Cup, one of my students, Clifford A. Dobb, stood highest with an average just over the minimum requirement of 75% for this award. Dobb was our Quartermaster Sergeant in the C.O.T.C., so involved with this extra duty, as well as his regular eight half-

days per week of military and academic sessions and his daily travel from and to a farm near Waterville that even if he had been athletically inclined he would have had no time to take part in athletic or other non-academic student activities. When his name was proposed I said that I was sure that Dobb would feel that selecting him for an award that called for accomplishments similar to those of Rhodes scholars would be quite unsuitable. The faculty agreed with my assessment and, no other first class average having been obtained by any of the few other men who had not enlisted, it was decided not to make this award. However, the Governor-General, the Earl of Athlone, was to be at Convocation and I believe McGreer wanted as many prestigious awards as possible to be given in his presence. At any rate, the next day's *Montreal Gazette* announced that Dobb had won the Ferguson award. Dobb saw the report and told me that it was ridiculous to give him this award. I phoned the Rev. Dean G. Basil Jones, B.A. (London), M.A. (Oxon) and asked if the faculty had not decided the previous day to withhold the award. He agreed we had.

It did not take long for Jones to visit the Principal and challenge him for autocratic action on this and other issues. McGreer said he would raise the whole matter with the faculty. Jones said that he had an engagement in Montreal and asked that the meeting be delayed until after his return so that he could speak. With Jones in Montreal, McGreer called the faculty together quickly, gave his version of the challenge by Jones, invited each person present to comment openly on the problem without fear. The performance of several faculty members was memorable and it is best that no specific reference be made to some remarks that were less than honest. However, it is appropriate to summarize the comments of three people in sequence, as given. Preston, of Classics, stated, inter alia, that he had come from an Anglican background and a love of his church but that he felt that, in his treatment of chapel services for students, McGreer showed his chief interest in numbers. (Four recorded attendances per week at chapel were required by all resident non-Catholic males.) I stated that I, too, was fond of my church and would have liked to attend the services of my own denomination. I added that "I did not do so as I knew that if I did you would shortly find cause to remove me." This was not denied. Eivion Owen, M.A. (Oxon), Ph.D. (Harvard), of English, delivered a forceful condemnation of the behaviour of the Principal, the details being unimportant. Owen may have completed his arrangements to move to the Quebec Department of

Education at that time: at any rate he moved within a year. Not long after this momentous faculty meeting, which joined the McGreer-Jones fight as a fight to the finish, McGreer made attempts to dislodge Preston and me from our positions and precipitated a closer interest of the Corporation in the internal workings of the University.

Not long after this time I learned that Jones had been able to block McGreer's first attempt to simply fire me. His second attempt at removal was less blunt. Kuehner appeared at my house one morning to state that the University had received enquiries about me from a very prestigious United States university but that it was specified that I should not be told the name of the university. As a matter of fact I knew from other sources, without the name having been specifically mentioned, that Cornell was seeking a plant pathologist for a department-bridging appointment to look after a difficult situation and I also learned much later that no appointment was made. I let Kuehner know that I considered the investigation most interesting. He asked if I would take the appointment if offered. I replied that, in the absence of details of the position and its location, there was no way that I could determine my response in advance. I maintained this stance when he reiterated his opinion that the opportunity would be a very fine one. Making no progress, he then came to the point, delivering McGreer's message that if the position were to be offered to me I must take it.

Tidbits

There was some sensitivity within the University community for animal welfare and some distrust of the veterinary profession. When there was occasion to "put away" a faculty member's domestic animal the task had fallen to Kuehner, who announced, upon my arrival, that he would retire from such action now that there was a biologist on staff. And so it was. During this period first-year biology students, in Canada generally, dissected preserved frogs. Although a botanist, I felt that the standard experience with frogs was inadequate and that students should study breathing, etc. of live frogs, should see the normal colours of the internal organs of freshly killed frogs and also examine the beating hearts of specimens that had just been killed. Introducing this procedure seemed risky in the community in question so I invited McGreer to see, in advance, exactly what I intended to do. In his presence I anaesthetized a frog heavily, dissected it, had him

observe the beating heart. He found this interesting and gave his blessing to the procedure. Only then did I discount the result of any complaints that might reach him.

Another topic with possible attendant difficulty was the theory of evolution. Kuehner had advised me that a local anti-evolutionist, a Dr. Olive Vaudry, had for years sought out the names of local students registered in his Biology course, sending them various anti-evolution pamphlets. He indicated that I would be hearing from this protagonist. The pamphlets were sent, as usual. Soon after registration in the fall of the following year I sent Dr. Vaudry a note reading, "In order to save you the trouble I am enclosing a list of all local students registered in Biology l." With no one to fight with, Dr. Vaudry ceased her mailings to my students but continued some friendly contact with me for awhile and that was the end of any *outside* concern regarding my teaching of evolution. It is also interesting to note that one of my honours biologists, who seems to have been provided with a question or two to pose during my teaching of evolution at the first year level, proceeded to graduate studies in botany in a field full of evolutionary considerations and, at last word, was serving as a professional consultant in anti-evolution litigation in the southern United States.

When the B.Sc. was initiated the University could boast eight scholarships in Theology, four in Arts, four for general proficiency and one in Mathematics. There were none specifically for the experimental sciences and this situation continued until 1953, when two science scholarships became available, accompanied by twelve in Theology, five in Arts and thirteen for general proficiency. We lacked the ability to draw outstanding science aspirants through scholarship awards and the administration turned a deaf ear to my suggestion that we emulate the young University of Western Ontario by offering University Scholarships of full tuition, on a regional basis, to the highest ranking students.

In this period there was a lively rivalry between Kuehner and myself to attract good students to our respective disciplines. Many High Schools offered no Biology, many offered Physics, while all offered Chemistry and Mathematics. In this competition I felt that Biology was considerably handicapped but we did have a substantial number of students who were headed to Medicine and, in general, likely to be very good students. I would estimate that approximately half of my best students went into medicine. The chemists found ready employment in sizable developing corporations of the country. They were particularly well prepared as careful analysts.

The Stir of Change and Biological Exhibitions

The first break in the long tradition of not providing more than a single instructor in a Science discipline occurred in September 1945. Roger Boothroyd, B.Sc. (Bishop's), M.Sc., Ph.D. (McGill), the first student to receive a B.Sc. in 1938, was stationed that summer at Ottawa, still in the Armed Forces. There he received a telephone call from McGreer, who stated that Kuehner had not been well that summer and would need some assistance in Chemistry. (His teaching load was such that he needed help much earlier.) "If I could expedite your release" from the Army, asked McGreer, would you provide the assistance? He added that the recompense would be $1000. Boothroyd's father had died in April of the same year, his mother was living alone in Lennoxville and he had not yet had time to find employment in genetics. He replied that he would be ready to accept the offer. Within approximately one week his discharge notice arrived. One may presume that Douglas C. Abbott, well known to McGreer as a freshman in the class of '18 (He enlisted after one year, returned to study law at McGill.), at the time Minister of National Defence, received a call from McGreer asking for speedy action. The action was indeed speedy! The adjutant dealing with Boothroyd's discharge was a chemist and a Bishop's graduate. He suggested that the terms of Boothroyd's appointment were ridiculous, that he should be paid $5000. Boothroyd replied "You have forgotten that I am a biologist, not a chemist." Boothroyd did have some further conversation on this matter with McGreer and McGreer said he would try to better the $1000 and finally provided $1500 for that full year's work. As his goal was genetical and as I had taught Qualitative Analysis two years earlier it was arranged that I would do so again, leaving Boothroyd to teach my Genetics course and gain experience more useful for his plans.

After one year Boothroyd moved on into Genetics and, in 1946, J. Wallace McCubbin, M.Sc. (Queen's, Kingston), Ph.D. (McGill) arrived as a full-time instructor in Chemistry, providing Kuehner with significant relief from the heavy academic load he had borne with such distinction for twenty one years. Private offices had still not appeared so McCubbin staked out a semi-private spot by blocking off the narrow corridor that led to the combined chemistry lecture room/laboratory. Sitting at his tiny desk against one wall he could lean back against the other wall behind him. With ambition and devotion equal to Kuehner's, McCubbin's coming strengthened our offerings greatly. Physics did not offer a Major.

Biology did and continued as a one-man department into the next administration.

In those days the compulsory subjects for a first year Science student were English, Divinity, Mathematics and Chemistry. The descending magnitude order of Quebec High School matriculants was Chemistry, Physics, Biology. A survey from the Quebec Department of Education indicated that the matriculation requirements for Applied Science at McGill were the major factor determining the High School offerings in Science, with extra Mathematics much more likely than a single course in Biology. Both before and after this period Biology found it very difficult to get any agreement that a University with Science offerings as limited as those at Bishop's should require a single course in each of Biology, Chemistry, Mathematics and Physics, so that students would be able to make choices based on experience of the four subjects at the University level. It had long been very plain that the physicists could not get along without mathematical training, that the ideally trained chemist should have a good background in both Mathematics and Physics. It had been becoming more desirable that a prospective biologist, to be free to travel in any direction within the discipline, should have Physics, as well as the obviously necessary preparation in Mathematics and Chemistry. Thinking in the other direction, however, the chemist saw little necessity for biological knowledge, the physicist saw none and the mathematician did not even need to consider the matter. He did not stop to consider that he produced very few pure mathematicians and that his major role was rapidly becoming one of providing the Mathematics needed by physicists, chemists and biologists. The idea of four compulsory sciences in first year at Bishop's fell, then, largely on deaf ears.

When, during the summer of 1945, Biology moved from one end of the New Arts basement to the other, and to two rooms with over twice the previous space, viz. 945 sq. ft., the stage was at last set for modest development, with students having more reasonable work space: one room, a little larger than the total space of 1938, for microscopic studies and dissections, and a space of equal size opposite, partitioned into a very adequate storeroom and a space for senior students, with Biology-style sinks on two sides and, for the first time, cabinet space. We were delighted, as was Home, recovering for Physics the space he had lost in 1938. Space-wise, we were a very contented group of Science instructors, ready for the influx of more mature veterans that were to be grafted into

our undergraduate body, stimulating its development greatly and enabling the increase in instructional staff which soon followed.

As graduate students at the University of Toronto, a number of us were caught up in helping with the "Annual Conversazione," mounted by the Department of Botany to show the Toronto public what was going on in our new building. I was very impressed by these exhibitions and now, with reasonable space, a competent group of undergraduates, a recently formed Biology Club and a genetically-oriented Chemistry instructor, Roger Boothroyd, available to participate, we proposed a public biological exhibition for the general public and area schools. Enough students were soon committed to the enterprise, which had to be planned far in advance. They rose to the challenge. I know of no other association with students at Bishop's that was as fruitful as this and subsequent preparations for an exhibition.

As the day of that first exhibition drew closer the preparations became more intense: I remember clearly driving students to Sherbrooke as late as 2:00 A.M. on several occasions after an evening's work. The exhibits overflowed into the basement corridor on the long examination tables so well known to students of the 20s, 30s and 40s, at least, with a special electrical line rigged up to provide reasonable illumination in the dingy corridor. The students excelled. The attendance was about 400, so stated in a note that went to the *Gazette*, but someone there must have thought that John Basset Sr., as Chancellor, would like to hear of a much larger attendance. The only change in the news item as printed by the *Gazette* was that 400 mysteriously became 800. The Easter trip of three carloads of Biology students for a week in New York was something of a reward for those who had mounted this first Biology exhibition. It involved visits to the N.Y. Botanical Gardens, the Bronx Zoo and the Hayden Planetarium, with time to take up advance reservations for various plays. We all stayed in the Y.W.C.A. and Y.M.C.A. It is sobering to recall that the basic expenditure for this trip, Friday to Friday, including shared cost of transport by car at 5.5¢ per mile, accommodation and meals, but not plays, was $35.00. At intervals thereafter, Biology students engaged buses for a variety of trips to Macdonald College, Ottawa, Montreal Botanical Gardens, Quebec City. University of New Hampshire and, notably, Bowdoin College in Brunswick, Maine, where, time after time the facilities of the laboratory were made available to us and from which site we sometimes brought back living marine life suitable for exhibition or class purposes.

In the early days the entire woodwork of the University was of a dark colour referred to as "Bishop's Brindle Brown" and the bricks, where visible, were painted in a buffy yellow colour. During preparations for a subsequent biology exhibition I found the condition of the New Arts basement distressing, with peeling paint conspicuous in the corridor where the public would walk. I was certain that if I asked the Bursar, Stuart Sanders, to do a paint job the answer would be "No." Instead I dreamed up an excuse to have both McGreer and Sanders see something in the Biology lab. I then asked Christie Sorensen, the maintenance man, if he had a 250 watt bulb (Yes.) and would he place it in the hanging fixture at the bottom of the stairs. (Yes.) I met McGreer and Sanders in the latter's office at the appointed time. As we walked down the stairs the peeling paint caught McGreer's eye and with a wave of the hand he ordered, "Sanders, get this place painted" and it was done in good time for the exhibition. Nothing like shedding light on a subject!

Biological Exhibitions became a feature at Bishop's. They were extended to last two days and large numbers of High School students, including those from several Montreal schools, attended. They were very useful in attracting students not only to Biology at Bishop's but to Bishop's as a whole. During the period 1946–1972, in addition to participating in a single trial Science Exhibition in 1948, we mounted 11 exhibitions. Participation in them was a voluntary but very important part of the training of a biologist at Bishop's. The arrangement in later years, and I believe in that first year, was that the instructor(s) who had helped mount the program would disappear just before the opening, leaving students wholly in charge, and re-appearing only at a later hour. The students knew in advance that they would be wholly in charge in dealing with the public and responded appropriately. Looking far ahead in this narrative, it may be noted that, all of us being nicely situated in the new Johnson Science Building, Biology, Chemistry and Physics combined in 1975 to offer a Science Exhibition that drew large numbers of the public.

Transition Standards and Changes

So the McGreer years drew to a close. In that final year of the McGreer period the first step was taken to strengthen the admission requirements in both Arts and Science, with 60% rather than 50% the normal standing in each subject. One year later this figure was increased to 65%. Two years later it dropped again,

replaced by a required average of 60%, with no mark less than 50 or an average of 65% with one mark as low as 40 allowed. Failures continued at a high level and it appeared that Quebec might be prepared to provide whatever we required for admission by use of the "rubber ruler." There were proportionately more failures in Science than in Arts and in the experimental two year Calendar 1956–58 we required an average of 70% in Science, 65% in Arts. This, however, seemed to suggest a weaker program in Arts than in Science and the Arts-dominated faculty caused a requirement of 65% in both Arts and Science to be presented in a later supplement to the 57–58 portion of that two year calendar. The failures continued. In 1960 we were able to have adopted a qualified 70% requirement, 65% average being allowed for an Arts student if the Arts marks were high, or for a Science student if the Science marks were high. This left the Science group with a reasonable degree of initiative in selecting Year 1 students. The system continued unchanged until 1968 when the requirement was posted as 70% average in ten Junior Matriculation papers or 60% in Senior Matriculation. A softening qualification was introduced the following year, to be followed in the 70–71 session by a retreat to the 60% requirement, which at that time was for entrance to our CEGEP-similar (College d'enseignement general et professionel) course, which is dealt with elsewhere. Looking at the entire flow of events one must conclude that varying admission requirements were influenced not only by desires to raise standards but by purely financial considerations. When the supply of students was adequate the desire to raise standards won the day, but only then. Survival in Science seemed to require higher marks, on the average, than those required to enter, as was well shown in an analysis prepared by Kuehner.

Grades are purely subjective in the sense that each instructor makes a subjective attempt to determine the level of attainment in any subject that will be rated as "pass." When I arrived at Bishop's the pass mark was 40, 50 was a third, 60 a second, 75 a first and a mark of 85 was rated as First Class, with Distinction. In the fall of 1937, before setting my first mid-term test, I met Kuehner in the hall one day and casually said that I presumed the pass mark was 50%. Learning that it was 40% I altered my subjective sights as to what would constitute a pass. It does not matter that my judgment of that level was bad, that I set a 40 minute test of two words, "Discuss proteins," failing 65% of the class and gaining an immediate reputation as a tough marker. When the year was over

I had learned a good deal, as had the students, and ended up with: 1st class—5 (2 with distinction), 2nd class—6, 3rd class—7, Pass—13 and Fail—9, 5 of them being asked to withdraw from the University. As the years passed I remained convinced that a University's pass mark bore no necessary relation to its standards, but that if the pass level standard was moderately high or high, then those students who received a "distinction" at Bishop's were indeed superior students, having been differentiated from other passing students in the 40–100% range. Time has shown that these students were indeed students of distinction. With a 65% or 70% pass mark, found in some Universities, there is little room for designation of the excellent, as distinct from the good.

While on leave of absence in Wisconsin in the 40s I was asked to set a test in such a manner as to produce an average mark of approximately 85%. I did just that but returned to Bishop's more convinced than ever that the 40% pass mark, of itself, was no sign of academic weakness. In 1959 I presented the Faculty with a survey of Canadian University grading systems. It showed that Bishop's and the University of New Brunswick were out of step with Universities generally and suggested that outsiders would not interpret our grades correctly. At that point we changed to the 50-65-80 system that certainly remained into the eighties. At about that same time, also at the University of Wisconsin, Dr. Leonard Huskins, one-time head of Genetics at McGill, intervened on behalf of two Canadian applicants for admission to graduate studies in Biology and about to be turned down because of their low averages, viz. approximately 85%. At the urging of Huskins they were accepted. They led their classes. The moral of all this is that the standards at Bishop's were related less to any pass marks and more to the standards of the instructors. Bishop's graduates moved elsewhere, even from the three year program, and compared favourably in graduate studies with students from other sources. After writing the above I learned that before I reached Queen's in 1928 it, too, had moved the pass mark from 40 to 50 for the same reasons that appealed to Bishop's in 1959. At the same time I learned that the University of Toronto Schools administration had determined that in the first ten years after the abolition of external departmental examinations in Ontario there had been an inflation of 14% in the marks awarded by High Schools. Further, the recent use of a cut-off of average mark of 86% to enter Engineering at Queen's has brought the whole grading system to an absurd end point, with virtually no possibility of distinguishing

the good from the excellent. Granted that the individual instructor has high standards, the system in force at Bishop's in 1935 gave the best opportunity for assessment of students on that long continuum from barely acceptable to superb.

The anomaly of offering a B.Sc. involving just two departments, Mathematics and Natural Science, continued for some years. In 1937 there had been provision for a Professor of Chemistry, an Associate Professor of Physics and a Lecturer in Biology. It became evident that there would be no change in this organization during the principalship of McGreer and indeed this proved to be the case. Not until Jones succeeded McGreer as Acting Principal was I able to arrange a meeting to request formal recognition of the fact that we worked as separate departments except for some financial controls. Jones accepted this argument without any difficulty and made the change to separate departments of Biology, Chemistry and Physics during the 1947–48 session. The problem was not discussed by the faculty but simply arranged.

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