

*The Rise and Decline of Science at Quebec, 1824-1844**

by R. A. JARRELL**

Science, whose impact has been increasingly felt since the middle of the last century, is a fundamental component of modern Canadian society. It was also a significant aspect of nineteenth-century Canadian culture, and an indispensable factor in the exploration and development of the vast, new land. The growth of science in urban centres of Lower and Upper Canada closely paralleled that in the United States, although in terms of chronology, Canadian efforts followed the midwest pattern, rather than that of the eastern seaboard.¹ Québec, being outside the mainstream of European science, is an excellent choice for a case study since it provides us with a view of colonial science within a more complex social setting than in many contemporary European urban centres. Moreover, many favourable local conditions contributed to the successful cultivation of science at Québec in the second quarter of the nineteenth century: a population large and educated enough to include a number of literate citizens; a continuing influx of people from outside to sustain flagging local energies; and the ready access to books, instruments, and specimens. Québec as well offers us a graphic illustration of how thin a cultural veneer science can be. Québec was different from North American towns of similar size for it harboured the social and political élites of two linguistic and cultural groups. In the opening years of the century, the English and French populations maintained a shaky, often strained, accommodation. Social conditions for the cultivation of science were met for a period just long enough to allow science to flourish; the inner contradictions of Québec society rose closer to the surface during the 1830s, breaking forth in 1837. If social stability within the bourgeoisie is necessary for science to be cultivated, then the growing estrangement of the two élites of Québec could only lead to the failure of scientific activity.

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¹ An overview of the evolution of science in Canada can be found in T.H. LEVERE and R. A. JARRELL (eds.), a *Curious Field-book: Science and Society in Canadian History* (Toronto: 1974). For science in Lower Canada consult Léon LORTIE, "La Trame scientifique de l'histoire du Canada," in G.F.G. STANLEY (ed.), *Pioneers of Canadian Science* (Toronto: 1966), pp. 3-35. For studies of science in the American East and Midwest, respectively, see: George DANIELS, *American Science in the Age of Jackson* (New York: 1968), and W.B. HENDRICKSON, "Science and Culture in the American Middle West," *Isis* 64 (Sept. 1973), pp. 326-40.

II

Québec and its suburbs (excluding troops) counted over 22,000 persons in 1825; by 1830, the number had risen to nearly 30,000.² The British and French populations were roughly equal in this period. In the early nineteenth century the cultivation of science was a class phenomenon, and that class was the bourgeoisie: the cultivators of science at Québec included merchants of some standing and such professionals as physicians, lawyers, officials, educators, surveyors, churchmen, and military officers. Only the top stratum of Québec society — the officials and members of the liberal professions — had the learning and leisure for science. Nowhere on the rolls of societies are the names of habitants, English yeoman, mechanics, small merchants, and army non-commissioned officers to be found. Among the various professions, individuals of British extraction predominated among the higher officials, businessmen, and military officers, and the French among the politicians, lawyers, educators, and notaries.³ The liberal professions, especially those of *avocat*, *greffier*, and *notaire*, had grown so rapidly early in the century that by the 1820s, Québec was clearly glutted.⁴ The initial requirement of an educated population was secured.

One feature of the liberal professions in Lower Canada was the regular influx of physicians, lawyers, and politicians into Québec. A large number of young newcomers from every part of the province were educated at the Séminaire de Québec, articulated with Québec lawyers, or studied with Québec physicians. A significant percentage of them remained in the city. Officers posted to the garrison were another external source of science amateurs and professionals. The annual session of the Legislative Assembly introduced a number of educated men from outside. This influx continued throughout most of the period.

The supply of books, periodicals, instruments, and specimens — the hardware of science — was not always uniformly adequate. Contemporary accounts suggest that bookshops were scarce and ill-provided, but libraries to some extent made up the deficiency. The city enjoyed direct sea communications with London, Boston, and New York, the centres of the English-language book trade; French-language scientific works came by more circuitous routes but were available. Instruments could be obtained from the same sources, particularly from London. Collecting specimens was no problem in a time when natural history and geology reigned supreme. The region about Québec abounds in geological, palaeontolog-

² Joseph BOUCHETTE, *The British Dominions of North America* (London: 1831), I, p. 268. Hendrickson ("Science and Culture" p. 330) suggests that a population of 30,000 was necessary to sustain an active scientific academy in the American Midwest in the 1840s and 1850s. Québec, although it barely met this criterion, was the capital and thus had a high concentration of educated people.

³ The relative proportions of English and French Canadians in the various professions can be followed in successive volumes of John NEILSON's *Quebec Almanac and British American Royal Kalendar*.

⁴ Fernand OUELLET, *Histoire sociale et économique du Québec, 1760-1850* (Montréal: 1971), I, pp. 202ff.

ical, and mineralogical formations, while the forest and river are near at hand to provide specimens to the naturalist. Practically every travel account of Québec from the seventeenth to the nineteenth century speaks of the region's fascinating natural history. Moreover, from earliest times materials collected in Upper Canada or the United States, especially from the Great Lakes region, were brought to Québec.

Scientific societies occupied the central role in the rise of scientific activity at Québec. In the early years of the British regime, a variety of intellectual societies emerged, including library associations, an agricultural society, and the small *Société littéraire de Québec*. None had universal appeal and none catered strictly to scientific interests. The few men who exhibited scientific knowledge were mostly self-trained, isolated figures. Thus, Pierre-Stanislas Bédard, editor of *Le Canadien*, studied mathematics and science at the Séminaire, read widely and kept a large notebook of his scientific, mathematical, and philosophical musings. A contemporary, Joseph-François Perrault, the Séminaire-educated son of a fur trader and a court clerk, was a leader in the field of agricultural improvement. He established a model farm and attempted to form an agricultural school. Realizing that improved agriculture rested upon modern techniques, in 1830 he published a *Traité de la Grande et de la Petite Culture* and in the following year the *traité d'Agriculture adapté au climat du Bas-Canada*. The medical fraternity included several men interested in science, among them François Blanchet, a Columbia graduate who had published his dissertation *Recherches sur la Médecine*. Another isolated case, Ross Cuthbert, lawyer, executive councillor and seigneur, published a *New Theory of the Tides*. These men had no institutional meeting ground, but since social connections were close they undoubtedly met and discussed science in the salons.

In the winter of 1823, Lord Dalhousie, fresh from Nova Scotia where he had founded a small literary society, put out feelers to selected members of the Québec establishment. Would they join him in a society to promote literature and collect historical documents relating to the city? Enlisting the aid of the then Speaker of the Assembly, Rémi Vallières de Saint-Réal, he forged the Literary and Historical Society of Québec (L.H.S.Q.) in January 1824. The name and aims of the society were liberally copied from a namesake in New York. This was on the recommendation of Dr. John Charlton Fisher whom Dalhousie had recently called to Québec to supplant John Neilson as editor of the *Gazette*. From the outset, Dalhousie had in mind an institution reserved for the better class of citizen; this was effected by screening admission by ballot and blackball, and by setting the entrance fee at £5. with an annual subscription rate of £3.⁵ It was no surprise therefore to see the type of persons making up the officer list of 1824: the president was Lieutenant-Governor Sir Francis Burton, the vice-presidents were Vallières de Saint-Réal and the Chief Justice Jonathan Sewell, while Dr. Fisher was the secretary-treasurer. Contemporary journals speak of large attendance by sparkling ladies and gentlemen, but

⁵ *Canadian Magazine and Literary Repository*, 2 (March 1824): 284-86.

an early member, reminiscing in 1864, noted that "the Society was in the first instance composed of high officials and courtiers, and the fee was fixed at a high rate, for some end which can only be guessed at."⁶ Although the aims of the Society were purportedly antiquarian, interest in science was strong from the beginning. Dalhousie donated £100 annually from his pocket for instruments, models and specimens, while Lady Dalhousie presented the Society with a collection of Canadian plants. When the L.H.S.Q. published its first volume of *Transactions* in 1829, the articles were predominantly scientific.

As the L.H.S.Q. was primarily for anglophone Quebeckers-drawn chiefly from the ranks of the so-called *gens en place* — it did not appeal either to French-Canadians or to the more liberal English-Canadians (assuming they could even be admitted). The path towards a broader-based, more popular institution followed a somewhat curious route. Pierre Chasseur, a local gilder and sculptor with no formal scientific education, opened a small natural history museum in 1824. He could not make a profit despite the museum's popularity. In the spring of 1827, a public meeting was convened by the physicians Blanchet and Xavier Tessier in order to discuss means of maintaining the museum. French-Canadians were most prominent in the movement and within a month the idea of forming a new society appeared. At the insistence of the Chevallier Robert d'Estimauville, an organizational committee was struck, including Tessier, Lieut.-Col. Joseph Bouchette (Surveyor-General of Lower Canada), Col. Pierre Laforce, a Mr. Macdonald and the Hon. William Sheppard, a merchant and natural historian.⁷ By the end of June, the *Société pour l'Encouragement des Sciences et des Arts au Canada* was formed. Bouchette became president, lawyer Louis Plamondon, Sheppard, Vallières de Saint-Réal, and the liberal lawyer Andrew Stuart became vice-presidents; Dr. Tessier was elected Secretary-General, Bouchette's son R.-S.-M. Bouchette became his assistant, and M. Clouet, a member of the legislative Assembly, was named treasurer.⁸ Membership was open to all citizens of Lower Canada by ballot, and clergymen, legislators, and women were automatically approved without ballot; the annual fee was only one guinea.⁹ Although Dalhousie would have nothing to do with the *Société pour l'Encouragement*, almost immediately it outstripped the L.H.S.Q. both in membership and in breadth of interest. Since it was more liberal in its arrangements and francophone in its orientation, the *Société* drew warm applause from Michel Bibaud's *Bibliothèque canadienne*, and from the liberal Montréal journal *La Minerve*. Both had hitherto remained silent about the L.H.S.Q.

The new organization set out to complement Chasseur's museum with a natural history cabinet of its own, launched a public subscription, and instituted a number of medals for outstanding essays in a variety of

⁶ "Remarks of William Sheppard," *Canadian Naturalist and Geologist*, new series, I (1864): 55f.

⁷ Montréal, *La Minerve*, 4 juin 1827.

⁸ *Ibid.*, 25 juin 1827.

⁹ Montréal, *Bibliothèque canadienne*, V (1827): 39-40.

scientific, technical, and artistic fields. Over the next two years these medals were awarded to French and English Canadians in about equal numbers. While science was its foremost subject of study, the Société, relecting its strongly French character, freely mingled art with science. At the second annual meeting in March 1829, the organization awarded medals for scientific essays, the Rev. George Bourne discoursed upon the "Philosophy of Taste," and Joseph Legaré exhibited his paintings, whose "novelty and high importance... attracted notwithstanding the extremely unfavourable state of the weather, a numerous and most respectable assemblage of ladies and gentlemen..."¹⁰

Sir James Kempt, who replaced Dalhousie at the Château; became official patron to both societies. He felt the two groups ought to be amalgamated for the greatest efficiency and must have exerted his best diplomacy toward this goal, for in the summer of 1829 the two agreed to coalesce. The resulting "Society for Promoting Literature, Science, Arts, and Historical Research in Canada," however, resumed the name Literary and Historical Society of Quebec in 1831 when a Royal Charter was granted it. The launching of the new society seemed auspicious. The Legislative Assembly granted it £250. which was applied to the purchase of scientific instruments. The 121 charter members were drawn from the upper echelons of Lower Canadian society, both English and French.¹¹ There were such placemen as Chief Justice Sewell, Andrew Cochran, J. C. Fisher, John Hale, Charles Stewart (the Anglican Bishop of Québec), George J. Mountain (the Archdeacon), and John Richardson. The seigneurial class was represented by members of the families of Coffin, Cuthbert, Gury, La Terrière, and Taschereau. Three-quarters of the L.H.S.Q. membership were British, and only one-quarter French. The vast majority were members of the liberal professions; nearly half were drawn from the legal professions — lawyers, judges, clerks, and notaries. There was also a smattering of physicians, of military men, of surveyors, educators, and Catholic churchmen such as Coadjutor Signay and the abbé Jérôme Demers, Superior of the Séminaire. Surprisingly few merchants belonged to the L.H.S.Q. and those who did were mostly very wealthy — such as the timber barons Price and Sheppard, or the fur traders Richardson, Davies, and Forsyth. Many of the members held seats in the Assembly, or on the Legislative and Executive Councils. Much of the membership was resident in Québec only during the winter months.

Perhaps membership in the L.H.S.Q. was taken out as much for social as intellectual reasons — particularly by the government and political figures. How many members had a scientific bent? Biographical information was gathered on most of the 121 men of the charter membership list in an attempt to identify those who were known to have an interest in science (on the basis of publication of scientific books and articles, or the use of science in their occupations). The results indicate that only 18

¹⁰ Québec, *Star/Étoile*, 25 March 1829.

¹¹ A full list of the membership appears in the Royal Charter, reprinted in the *Centenary Volume of the Literary and Historical Society of Quebec* (Québec: 1924).

anglophone and 9 francophone members were scientifically inclined, that is, less than one-quarter of the total membership.¹² Table I shows that these relatively few members contributed the lion's share of the intellectual work published in the Society's *Transactions*:

Table I: SCIENTIFIC PAPERS IN THE TRANSACTIONS (1820-1843)

Volume/Date	Total Papers	Total Scientific	% Scientific
I (1829)	16	12	75
II (1831)	17	12	70
III (1837)	26	20	77
IV (1843)*	8	7	88
Totals	67	51	76

*Vol. IV was printed in 1855; the first section was devoted to papers accepted between 1837 and 1843.

Likewise, 60% of the unpublished papers read before the Society between 1833 and 1843 were scientific.¹³ Certain names recur. Five or more papers apiece were published by the lawyer William Green, whose work on pigments garnered him the gold Isis Medal of the Royal Society of Arts in 1829; Lieut. (later Maj.-Gen.) Frederick Baddeley, R.E., who contributed much to the early geology of Canada; the merchant William Sheppard of Woodfield, an ardent natural historian; and Dr. William Kelly, a surgeon with the garrison, whose work was chiefly meteorological. Table II shows the professional distribution of the 37 contributors of both published and unpublished scientific papers between 1829 and 1843, as follows:

Table II: CONTRIBUTORS OF SCIENTIFIC PAPERS (1829-43) BY PROFESSION

Profession	No. Contributors	%	Papers	%
Medicine	12	32	21	28
Military	5	14	15	20
Law	5	14	11	15
Commerce	4	11	10	13
Education	2	5	4	5
Surveying	2	5	3	4
Civil Service	1	3	1	1
undetermined	6	16	11	14
Totals	37		76	

¹² The breakdown by profession of the 27 members identified as having scientific interests is as follows:

Profession	English	French	Total	%
Civil Service	3	3	6	22%
Medicine	4	2	6	22%
Law	3	2	5	19%
Military	4	0	4	15%
Commerce	2	0	2	7%
Education	1	1	2	7%
Surveying	1	1	2	7%
Totals	18	9	27	

¹³ F. C. WURTELE, "List of Unpublished Papers read before the Society," *Transactions L.H.S.Q.*, new series, part 20 (1891), XLII-XLIX.

The contributions by profession were roughly indicative of the contributors' educations: the physicians, military engineers, and lawyers being generally the best educated, the first two especially in science. Education seemed to be the factor that separated the doers from the dabblers. An analysis of the Society's publications also corroborates the order of North American preoccupations in the Nineteenth Century. Approximately 40% of all the papers dealt with the earth sciences (geology, geography, and meteorology); another 20% with natural science (botany, zoology, natural history); followed by a few papers on medicine, chemistry, mechanics; and last (and least) the physical sciences (mathematics, astronomy, physics).

III

If a period can be assigned for a 'Golden Age' of science in Québec it would fall roughly in the decade 1826-36, after which a decline became noticeable. These were the years of the greatest activity of the L.H.S.Q. There is also ample evidence of increased scientific awareness among Québec citizenry in a variety of areas: activities of the medical profession, government-sponsored explorations, science education, science journalism, the founding and support of museums, the use of scientific works in libraries, and the work of the Agricultural and Mechanics' societies.

The medical profession studied and disseminated modern ideas of medical science in this period. Although no formal medical education was available in Québec until the 1840s — and virtually every physician was trained elsewhere — in the mid-1820s several doctors attempted locally to provide this facility. The Edinburgh-trained doctors Anthony von Iffland and John Whitelaw taught medicine and science in their medical dispensary from 1823 to 1825 when lack of money forced them to stop. In 1826, Dr. Blanchet was lecturing on anatomy and chemistry, while Dr. James Douglas lectured on anatomy and physiology.¹⁴ In the following year, Dr. Whitelaw lectured on chemistry. Large and enthusiastic audiences attended these lectures. In 1826, the indefatigable Dr. Tessier founded the *Journal de Médecine de Québec* (Quebec Medical Journal), a sophisticated, bilingual publication that lasted two years. Its editors included Dr. Blanchet and the noted scientific amateur and educationist Dr. Jean-Baptiste Meilleur. The *Journal de Médecine* reviewed foreign medical publications, reprinted news from British and French medical journals, and reported on public hygiene and the Lower Canada hospitals. It also served as the organ for the Quebec Medical Society, formed in 1826 by both French and British physicians.

When the *Journal de Médecine* failed for financial reasons, Tessier announced he would carry on with a *Journal des Sciences Naturelles de L'Amérique du Nord* that would appear quarterly from New York. Tessier hoped to reintroduce French as a scientific language on the continent

¹⁴ Montréal, *La Minerve*, 16 novembre 1826. Blanchet's series of lectures was free.

and planned to extract items from European journals over a breathtaking scope: botany, natural history, chemistry, mineralogy, medicine, surgery, and materia medica. In addition he proposed to include reviews of "...tous les ouvrages scientifiques publiés de nos jours dans toutes les langues connues," coupled with original contributions and news items from Canada¹⁵. Apart from its far too-limited potential readership, the new *Journal* would require remarkable editorial qualities indeed. However, it never appeared. The Quebec Medical Society flourished despite the loss of its official organ. In 1832 the city's medical students formed their own organization, the Quebec Medical Students' Society, with 14 French and English members.

The provincial legislature had little official interest in scientific endeavours, limiting its financial support of science to small grants to societies. However, public need dictated a more active role. The population of the old seigniories was increasing in the 1820s while the amount of arable land remained relatively static — excepting the Eastern Townships, which were basically an English preserve. The Legislative Assembly accordingly decided to investigate the possibilities of opening new land to settlement. In 1828, it named Andrew and David Stuart as commissioners for the exploration of the Saguenay country, and T. Pothier as commissioner for the Mauricie. During the summer and autumn of that year the Saguenay Expedition penetrated the Lac Saint-Jean region.¹⁶ In 1829 and 1830 expeditions traversed the Shield between the St. Maurice and Ottawa Rivers.¹⁷ These expeditionary parties surveyed the agricultural potential, geological formations, and natural history of the country and also took a number of observations of latitude, longitude, and compass variation. Shortly thereafter, Lieut. Baddeley was dispatched to the Baie de Chaleurs region. Reports of the scientific work of these expeditions, as well as other individual operations by Capt. Henry Bayfield, R.N., Andrew Stuart, John Adams, and Baddeley, appeared in the *Transactions of the L.H.S.Q.* — of which they and nearly all the participants in the expeditions were members.

In 1824 there was little possibility of an anglophone Quebecker obtaining an education that included any higher mathematics or science. The Rev. Daniel Wilkie, who was conversant in science and mathematics, provided some tutoring in his school; several of his students afterwards became noted science amateurs. The only school offering a modicum of science for francophones was the *Séminaire de Québec*, the successor to the classical *Collège de Québec* which had been closed after the British expelled the Jesuits. According to the "*Plan d'Éducation du Séminaire de Québec*" of 1790, the final year (senior year of philosophy) was devoted to mathematics, physics, and geography.¹⁸ By 1816 the curriculum was

¹⁵ *Ibid.*, 20 mars 1828.

¹⁶ *Rapport des Commissaires pour Explorer le Saguenay* (Québec: 1829).

¹⁷ *Report of the Commissioners Appointed to Explore the Country Between the St. Maurice and the Ottawa, in the year 1830* (Québec: 1831).

¹⁸ Archives du Séminaire de Québec (ASQ), Fonds Verreau-Viger, carton 16, No. 10, printed in H. PROVOST (ed.), *Le Séminaire de Québec. Documents et Biographies* (Québec: 1964), p. 280.

expanded so that some mathematics was taught in the penultimate year, followed in the senior year by higher mathematics, physics, some chemistry and astronomy.¹⁹ This arrangement was in force during the 1830s; the physics and mathematics examinations were public events. Students' and professors' notebooks from this period attest to the *Séminaire's* elementary but up-to-date scientific education.²⁰ Though it was the centre for higher education in Québec, its enrolment was never large. Only about 100 students were in attendance in 1800, and while the total enrolment had risen to 303 by 1836 only 13 students were to be found in the senior year of philosophy.²¹

Séminaire students were fortunate to have a succession of capable science teachers. The *abbé Jérôme Demers*, who more than anyone was the founder of science teaching at the institution, established the *Cabinet de Physique* and constructed instruments. His student Louis-Jacques Casault was the first Professor of Physics at the *Séminaire* (1834), and afterwards first Rector of Université Laval. The best-known figure at this time was the American-born convert John Holmes, of whom Lord Gosford remarked that he raised the mathematics course to a high level by supporting ideas with examples drawn from physics.²² In 1836 Holmes travelled to Europe to purchase scientific books and instruments for several classical colleges and to secure a master for the proposed Quebec Normal School. This school designed to ameliorate the low academic level of many Lower Canada teachers, on the advice of *abbé Demers* would have introduced science and mathematics into its curriculum. Owing to the political turbulence of that period the Normal School never opened. When the master hired by Holmes arrived in Québec, he found himself without a position.

Surprisingly, women could attain a limited scientific and mathematical education at the Ursuline Convent school. Holmes (whose sister, also a convert, taught there) purchased a few scientific instruments and teaching aids for the school in 1836. The beautiful globes and orrey may still be seen in the convent museum.

Besides the professionals, teachers, and members of societies, many other literate Québeckers could indulge a taste in science by reading newspaper articles, viewing museum exhibits, or browsing in libraries. Québec journalism was lively during the 1820s and 1830s, with nearly a dozen periodicals in print at one time or another. News of societies and items of general interest on science, agriculture, and technology appeared in such major papers as the *Gazette* or *Le Canadien*. Thanks to

¹⁹ ASQ, *Séminaire* 13, No. 32; *ibid.*, p. 303.

²⁰ A large number of scientific notebooks survive. A typical example is the MS "Définitions de la sphere, du soleil, des Étoiles; notes de l'abbé Montminy" of 1820 (ASQ, M 1014 tablette 32) which covers nearly all the important astronomical concepts, including such contemporary advances as William Herschell's ideas and the discovery of asteroids. The course was probably taught by Demers.

²¹ PROVOST, *Le Séminaire*, p. 317.

²² Gosford to Lord Glenelg, 9 May 1836; quoted in A. Gosselin, "L'Abbé Holmes et l'Instruction publique," *Mémoires de la Société royale du Canada*, section I (1907): 141.

Dr. Fisher, the L.H.S.Q. received coverage in the *Official Gazette*. The *Québec Star/Étoile*, under the editorship of Dr. Wilkie in the late 1820s, often printed short articles, as "On Manures" or "Nomenclature of Mineralogy." Available too were Montréal journals such as Bibaud's *Bibliothèque Canadienne*, *La Minerve*, the *Canadian Magazine*, and William Evans' *Journal d'Agriculture*, which carried scientific articles. It may seem curious to find such material in literary journals such as Bibaud's, but to the francophone *littérature* was a far more encompassing concept than the corresponding English word. Science was a proper study for the cultured person.

By 1830, a variety of natural history specimens were on view at the L.H.S.Q. in the Chasseur museum in the Union Hotel on the Place d'Armes. This museum was actually a combination of three earlier collections, those of Chasseur, the *Société pour l'Encouragement*, and the old L.H.S.Q. Chasseur's museum according to William Sheppard was established, "as a matter of speculation, principally composed of birds; but finding that it did not answer his expectations in point of revenue, he persuaded the Legislature to purchase the collection."²³ The Legislature had already sunk £ 350. into Chasseur's Museum; since the public meetings of 1827 were sidetracked into forming the *Société pour l'Encouragement*, the province took over the collection at the cost of £400.²⁴ Bouchette noted in 1832 that most of the geological and mineralogical specimens in the combined museum actually were from Upper Canada, the donation of Capt. Bayfield.²⁵ Sheppard was the prime mover in the formation of the botanical collection, while his wife — a conchology expert — supplied an exhibit of shells. The museum also displayed mathematical models, specimens of various types of wood, and stuffed birds and mammals. The collections, moved to the Parliament Buildings, were almost entirely consumed by fire in 1854. The remnants may still be seen in the *Musée de Québec*.

Libraries came early to Québec. Governor Haldimand founded the Public Library in 1779, but the better-stocked and more popular library of the Québec Library Association superseded it. The science and mathematics holdings were never great; by 1844 the catalogue listed only about 50 English science titles (essentially popular works) with a somewhat larger collection of the better French works by Lalande, Buffon, Claireau, Lavoisier, and others.²⁶ A few science books were available in the Garrison Library (established in 1816) and in the library of the Séminaire, which inherited the science collection of the Collège de Québec. The finest collection was actually in the House of Assembly Library. In 1832, its holdings numbered some 5,000 volumes, which grew to more than

²³ "Remarks of William Sheppard," p. 56.

²⁴ Isidore LEBRUN, *Tableau statistique et politique des Deux Canada* (Paris: 1833), p. 240.

²⁵ BOUCHETTE, *British Dominions*, I, p. 252; see, also, George BOURNE, *The Picture of Quebec and Vicinity*, 2nd ed. (Québec: 1831), p. 104.

²⁶ QUEBEC LIBRARY ASSOCIATION, *Catalogue of Books in the Quebec Library* (Québec: 1844).

7,000 by the end of the decade. The 1835 catalogue lists nearly 1,000 volumes on science, technology, and medicine, represented by authors such as Buffon, Buckland, Davy, Biot, Jameson, and Guettard. The *Edinburgh Review* and *Quarterly Review* provided current scientific news.²⁷

Finally there were the Agricultural Society and the Quebec Mechanic's Institute, two tangentially scientific Québec organizations. Lord Dorchester had founded the original Society of Agriculture of Canada in 1789; by 1820, the Québec branch was awarding prizes for outstanding livestock and produce, and making some attempt to disseminate modern techniques and knowledge of scientific agriculture. The Québec Agricultural Society was controlled by anglophone lawyers, merchants, and politicians (many of them also L.H.S.Q. members). Its francophone membership was drawn chiefly from the seigneurial class (de Gaspé, Lanaudière, de Salaberry, etc.). Though French-Canadian intellectuals usually maintained a romantic view of Québec agriculture late in the century (*vide* Brunet's "Agriculturalism"),²⁸ early in the century they were also taking a great interest in scientific agriculture. Many such works came off the presses of Lower Canada before mid-century.²⁹

The Mechanics' Institute movement, originating in Britain in the first years of the century, espoused a programme of educating workingmen in the applications of modern science and technology. The idea spread rapidly in Canada and remained popular long there after the movement lost impetus in Britain. The Quebec Mechanics' Institute was formed in 1830 by middle-class men under the presidency of John Neilson. The Legislature subsidized it to some extent and it grew rapidly; by 1832 its rolls contained 150 names. It collected a small scientific library (Lebrun noted ironically that more money was expended on English than French books)³⁰ and a few instruments. Its since had not increased by 1844, however, and its appeal was still firmly middle-class.³¹ Many Mechanics' Institutes played an important role in the popularization of science. Little is known of the Québec Institute; a study devoted to it would enhance our knowledge of the dynamics of science cultivation in Québec.

IV

Just at the time that science was growing in popularity at Québec it came under the adverse effects of such contemporary events as the cholera epidemics of 1832 and 1834, a serious economic downturn, and — above all — the rapidly increasing political tensions that culminated in

²⁷ *Catalogue des Livres appartenant à la Bibliothèque de la Chambre d'Assemblée* (Québec: 1835).

²⁸ Michel BRUNET, *La Présence anglaise et les Canadiens* (Montréal: 1964), pp. 120-124.

²⁹ The best-known authors were J.-F. Perrault, J.-B. Meilleur, Napoléon Aubin, and Hubert Larue.

³⁰ LEBRUN, *Tableau Statistique*, p. 249.

³¹ *The Quebec Guide* (Québec: 1844), p. 132.

the Rebellion of 1837-38. The decline of scientific interest under the impact of these events is tangibly shown by the membership of the L.H.S.Q. It reached its peak about 1836, when there were 154 members, 127 of them resident in the province and paying dues. In contrast, the council report of 1840 speaks of a "falling off in attendance at meetings," and states that "few original papers were read before it in the ordinary course." In 1841 the officers reported that "the funds are in a very low state." By 1850 the L.H.S.Q. had *only 14* paying members.³² So far had the situation deteriorated that of only seven papers presented in 1844, no fewer than four were by Daniel Wilkie.

Several blows hit the L.H.S.Q. late in the 1830s. During the governorships of Aylmer and Gosford, the Assembly refused to vote supply bills, depriving the Society of its annual grant, and some of its members of their salaries. As the turmoil increased the French-Canadians withdrew. Before the middle of the decade at least a few of them had published literary or historical papers; in the second half none published nor gave a paper of any kind. Several published scientific material during the decade, but not in their Society's publications.³³ Were they uncomfortable in the L.H.S.Q.? That seems likely. In the *Société pour l'Encouragement*, they had been both enthusiastic and — more telling — in the majority. For all its efficiency, the amalgamation of the Société with the old L.H.S.Q. brought with it anglophone domination. This is shown by the immediate displacement of French-Canadians from the Society's offices. Several French-Canadians remained on the rolls, but many slipped away. All refrained from participating actively in the Society's scientific work.

The final blow came in 1841 when, as a result of the union of Upper and Lower Canada, the seat of government was removed to Kingston. In the process, Québec lost the fine Assembly Library and most of its transient intellectuals.

In 1843, several of the French-Canadian intellectuals who still remained in the city formed the Société canadienne d'études littéraires et scientifiques. A group of approximately 40 members, it wished to offer free lectures to the public.³⁴ In the following year, all the Québec literary, scientific, and library associations met with a view to uniting themselves into one institution, but the seemingly happy congress of 1829 was not to be repeated.³⁵ French-Canadians had withdrawn from British-dominated groups, eventually the more liberal among them found an intellectual home in their own Institut Canadien. The shrunken L.H.S.Q. turned

³² James DOUGLAS, "Opening Address," *Transactions L.H.S.Q.*, new series, part 4 (1866): 10-13.

³³ For example, Bouchette, Perrault, La Terrière, Demers, and Hamel. Other French-Canadian science amateurs, such as J.-B. Meilleur, who was in Québec occasionally, did not join the L.H.S.Q.

³⁴ *The Quebec Guide*, p. 133; see, also, *Statuts de la Société Canadienne d'études littéraires et scientifiques fondé à Québec le 4 octobre 1843. À l'avenir de la Patrie* (Québec: 1843).

³⁵ W.C. WURTELE, "Our Library," *Transactions L.H.S.Q.*, new series, part 19 (1889), pp. 46f.

increasingly towards its original goal of historical research and never again assumed a prime position.

Other areas of science cultivation were hit, as well. Anglophone higher education, which might have improved in better conditions, failed to materialize. This is the one area in which science fared better within the French-Canadian community during a period of overall decline, and this being due to the strength of the Catholic Church. Arthur Buller, surveying Québec education for Lord Durham, found the Séminaire to be an "admirably-conducted establishment." But he was pessimistic about the outlook for the anglophone population:

With regard to the means of higher education, persons of British origin have hardly any, while those of French origin have them in too great abundance... if [an Englishman wishes his son] to be instructed in the higher branches of mathematics, natural and moral philosophy, etc., he must either send him to Europe or the United States, or avail himself of the more imperfect opportunities afforded in the Catholic establishments of the colony.³⁶

This situation did not improve significantly anywhere in the Province until the resurrection of McGill University under William Dawson in the 1850s. During the period of declining scientific interest at Québec, the Séminaire continued to improve and expand its scientific curriculum, its library, and collection of instruments. It represented one of the few bright spots in the 1840s.

V

The decline in the cultivation of science in Québec had many causes, some of them obvious. Some of the requirements for the cultural pursuit of science disappeared with the removal of the government. However, the primary causes seem to be political and social in nature. If the social élite was not unified, the long-term prospects of science could not be very bright. In his *Mémoires* Philippe Aubert de Gaspé speaks of the close relationships among both French and English members of the bourgeoisie in the early years of the century. By the 1820s, however, the two groups had drawn greatly apart. This split was obvious when the first scientific society was inaugurated. By the 1840s, if Lord Durham can be taken literally, social intercourse between French and English bourgeois had ceased altogether.³⁷ During the 1820s and 1830s the social situation had not deteriorated so far as to preclude scientific activities by anglophones and francophones separately, and even in limited co-operation. As the rebellion approached more and more energy of both groups went into political struggle. Not surprisingly many of the French-Canadian intellectuals who were interested in science were also political liberals and, after the abortive union bill of 1822, they had less-and-less time for science.

A dramatic example of a scientific amateur's flight to politics was that of Robert-Shore-Milnes Bouchette. Educated under Daniel Wilkie

³⁶ *Lord Durham's Report on the Affairs of British North America*. Sir Charles LUCAS (ed.) (Oxford: 1912), III (Appendix D), p. 270.

³⁷ *Ibid.*, II, pp. 42ff.

and Andrew Stuart, he was a staunch member of the establishment. He worked for his father and elder brother in the Surveyor-General's office, was an officer in both the *Société pour l'Encouragement* and L.H.S.Q. and said of mathematics that "cette dernière étude surtout était pour moi une récréation."³⁸ Marrying a young Englishwoman in 1834, he lost her suddenly within months when she contracted a fatal illness. Shocked by her death, he sought solace in intellectual studies but soon became an ardent convert to the *patriote* cause, and quickly parted company with his family, friends, and associations. When the Rebellion ended, he found himself exiled to Bermuda. There were other, less dramatic, examples of French-Canadian intellectuals abandoning science and literature for politics.³⁹ Besides the French-Canadians siphoned off to politics, other scientific amateurs of the 1820s and 1830s such as Blanchet, Tessier, and C.-N. Perrault were dead, or as in the case of military officers, such as Bayfield and Baddeley, had been transferred elsewhere.

The important question remains: why had the French-Canadians participated so little even in the balmy days of the cultivation of science? Traditional responses might centre either on Church domination or on the cultural biases in a francophone's education. Even so acute an observer as Pierre Chauveau could write in 1876: ...par un de ces affinités naturelles... il semble que la population anglaise se soit portée davantage vers les sciences mathématiques, physiques, et naturelles, et la population française vers les sciences morales et politiques, l'histoire, la littérature et les beaux-arts.⁴⁰ Yet this is an oversimplification that flies in the face of such facts as the educating of most French-Canadians in the *Séminaire de Québec* or other *collèges classiques* where science and mathematics were enthusiastically taught — indeed, better than in contemporary English schools. Their periodicals carried articles of scientific interest. Enlightenment authors devoted to science were widely appreciated. The Catholic hierarchy of Québec contained few anti-intellectual or stridently ultra-montane members; in fact, several of the clerics, who later became Archbishops of Québec and other high functionaries, had been science professors at the *Séminaire*.⁴¹

It is much more likely that the declining participation in science after the mid-1820s by francophones arose from and reflected the channelling of their energy into the battle for "notre langue, nos institutions, nos lois." Literature, history, journalism, and the arts were superior cultural vehicles in the fight for survival. Science certainly was not. Science was held to be impartial, international, and non-emotional.

³⁸ A.D. DECELLES (ed.), *Mémoires de Robert-S.-M. Bouchette, 1805-1840* (Montréal: 1903), p. 14.

³⁹ The Correspondence Committee at Québec during the Rebellion included former L.H.S.Q. members R. Bouchette, A. Berthelot, J. Hamel, F. Quirouet, and L. Lageux. Québec, *Le Libéral*, 19 septembre 1837.

⁴⁰ P.-J.-O. CHAUXEAU, *Instruction publique au Canada* (Québec: 1876), pp. 311ff.

⁴¹ A few prominent examples include Demers, who was entreated to become Archbishop, E.J. Horan, a natural science teacher who became Bishop of Kingston, and Elzéar Cardinal Taschereau, onetime astronomy teacher at the *Séminaire* who became the leader of liberal catholicism later in the century.

That bourgeois anglophone Quebecers were the most prominent cultivators of science during the 1820s and 1830s need not be explained by some vague allegedly Anglo-Saxon characteristic. Rather, it reflected the political and economic dominance of this group in Québec. Unlike the French, they were not struggling for *la survivance*. Unencumbered by the intense emotional and intellectual drive for cultural survival, they had more leisure to explore their interests in science.