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The Roots of Two Unpublished Letters of Sir William Dawson

The Canadian scientific community developed at the very beginning of the nineteenth century with much help from the first, pioneering associations in spite of the problems created by distance.¹ In 1824 the Literary and Historical Society of Quebec was founded. In spite of its name, it was mainly a scientific academy. This was followed in 1827 by the Natural History Society of Montreal, the Mechanics Institute of Toronto in 1831, and by the Royal Institute of Toronto (still in existence), founded in 1851 as

a Society where men of all shades of religion or politics may meet on the same friendly grounds; nothing more being required of the members . . . than the means, the opportunity, or the disposition, to promote those pursuits which are calculated to refine and exalt a people. (Wallace 136)

At the start of this colonial but intensive academic life, the typical member was the amateur, who went botanizing to find plants in his new country, but who, little by little, felt the need to communicate with other amateurs, to publish reports on the transactions of the mentioned societies, and to keep in touch with universities at home and abroad. For example, John Macoun, the future surveyor of British Columbia, started his colonial life as a farmer in Belleville, Ontario, as we read in his *Autobiography*:

After we came to America I was engaged one Morning in May splitting rails. While resting on a heap of the rails, I noticed the hazel bushes at the edge of the woods, and, like Moses, went to examine and discovered that these were identical with what my uncle had shown me in Ireland. . . . These were the first studies I made in Botany. (131)

He then started to collect plants and flowers and to send his observations to prominent foreign botanists such as Asa Gray, soon becoming the "official botanist" of Canada.

In Nova Scotia something similar happened in geology with another of the amateurs, John William Dawson, who became the most outstanding scientist of colonial Canada, Principal of McGill from 1855 to 1893, and a scholar who was the fundamental cultural liaison between Canada and the motherland. Born in 1820 in the little town of Pictou, he commenced his education in Thomas McCulloch's Pictou Academy, a college

furnished with a respectable library, philosophical apparatus, and, what was less usual at that time, a collection of natural history; mainly composed of local specimens, collected by the principal and his sons, but including a small set of fossils from some typical localities in Great Britain.

(Fifty Years 26)²

Probably due to such early cultural experience, William Dawson proved himself a disseminator of scientific information, both in teaching and writing, as well as an enthusiastic advocate of science and the great good it could confer on his country. He never failed to stress the utilitarian aspect by underlining the striking disproportion between the advantages which science gives to humanity and the precarious financial support which is granted to scientific institutions, especially colonial ones.

Moreover, Dawson viewed the inventory sciences as a social and cultural adhesive to bind together a diverse and divided society. He was extremely broad-minded and truly modern as far as mass education was concerned. According to Dawson, scientists should care for many facets of human life and take responsibility for the social improvement of their times. Thanks to Dawson and his colleagues, Canadian education was deeply rooted in two prominent inventory sciences: geology and botany. Science, according to Dawson, had two fundamental rights: the right of investigation and the right to a large share in the education of the young. Humanistic studies ought to yield to such practical and useful subjects as geology, geography, chemistry, agriculture, and the like (O'Brien 6-26; Pighetti, "Dawson").

An interpretative survey of the colonial Canadian scientific mentality offers an approach to the last effort recorded in modern history to preserve the humanistic roots of science in the face of spreading positivistic and evolutionary theories. The isolation of scientists results in various diffi-

culties which hamper science itself. Each individual pursues a path of his own without contact with his fellows. The result is a narrowing of scientists' minds, a tendency to extreme views, a danger of losing sight of the scope of science. On such grounds we can link the French-speaking and English-speaking scientists who were allied in defending religion from the scientific attack of Charles Darwin's supporters. The dogma of creationism was vigorously defended for religious purposes, while the experimental weakness of Darwinian theory became a strong argument against teaching it, labelled as a dangerous waste of time. Since William Dawson and his many supporters stressed the importance of getting competent teachers to explain phenomena by means of investigation rather than by books or idle speculation, the general attitude toward evolutionary theory can be regarded as a corollary to the distrust of all learning that does not stem directly from evidence. According to Dawson, Darwinian theory was pure fancy, as he claimed in his famous work, *Facts and Fancies in Modern Science* (1882).

The attitude of Dawson and many of his colleagues like Sir Daniel Wilson was rooted in the panic among Canadian moral and natural philosophers who wanted to keep religious dominance over the secular and physical world.³ Such panic, however, was common to both French and English scientists and the battle of Léon Provancher against Darwinian theory was in no way less harsh.⁴ This common war produced a side effect worth underlining: it shaped the structure of the Canadian Royal Society, founded in 1882, an Academy which was only partly inspired by the Royal Society in London, since it included both scientific and humanistic members, following the path of the French one.

The systematic, scientific surveys of the land and its resources profoundly shaped the idea of a transcontinental nation by imparting to Canadians a sense of direction, stability and certainty for the future.⁵ Moreover, the geological survey of the country, ordered in the fifties by Great Britain but supported by Canadian financial means, and the discovery of unexpected mineral wealth, induced the Canadian people to think of abandoning British protection.

In the view of many Canadian historians of science, the attitude of the colony to scientific research was inspired by Great Britain through "missionary" scientists like the botanist William Lawson. These intellectually adventurous people taught in the first universities, such as Queen's, McGill, and Dalhousie, soon becoming "professors" in their field. On this interpretation, the amateurs and scientists worked in the field of natural

research as a gratifying imitation of the motherland, a way to escape the unpleasant sense of colonial inferiority.

From an outsider's point of view, quite a different cultural interpretation can be ventured. Canadians cultivated natural science first of all for practical purposes, but also with the aim of creating a cultural atmosphere in the rough bush life. The French-speaking contribution to scientific work was by no means less important than the anglophone, thanks to naturalists such as Léon Provancher and Louis-Ovide Brunet. Moreover, the influence of France contributed in some measure to the establishment of the French-Canadian scientific mentality. For instance, the Enlightenment and the tradition of Voltaire were cultivated by French-speaking intellectuals, while the myth of Napoleon the Third offered the possibility of raising themselves to the same level of importance as English-speaking people. So, the co-operation among French and English scientists in Canada was in fact the product of two imperialistic mentalities, bound together in resisting Darwin and defending the superiority of Canadian science. After the geological survey, in spite of political subjection, both Canadian ethnic groups overcame their cultural dependence, while clinging to their common religious roots, including Roman Catholic ones, to the wealth of the country, to a peaceful attitude, to the strong sense of being "people of the North," to the premonition of becoming sooner or later a great, rich country, and finally, to the fear of losing the traditional connection between science and the humanities.

In spite of the Victorian dream of technology and progress, it is hard to find an advanced technological aspect to the Canadian colonial economy, rooted mainly in agriculture and trade. With very few exceptions, such as clearing land, mining, and railroad building, the motherland clearly kept the colony down. Britain did not encourage any technological evolution and gave very little money to Canadian scholars, as Dawson stressed:

there has been some agitation as to the endowment of scientific research for its own sake—a somewhat difficult matter, for not only has the public to be persuaded to spend its money on what is apparently unprofitable, but the right men have to be found. ("Present Rights" 676)

Thus Canada was not reached by any sort of industrial revolution. It was a matter of some embarrassment for nineteenth-century Canada that the country had not yet produced in the field of scientific application any figure of the distinction of John Watt or Justus von Liebig. The agricultural and

industrial exhibitions of the century gave Canada something of a scientific reputation incidentally, but whether or not to expend the effort and money to send a national display was sometimes debated, as in the case of the American Centennial Exhibition of 1876. In a critical account of this World's Fair we can read some interesting remarks:

For the Canadian Display neither the American people, nor the judges of the Exhibition were prepared. Here it was not alone the richness of natural endowment, but the artfulness of mechanical contrivance, quite New-England like, the spirit of industrial enterprise, active and penetrating, and the admirable educational system were in the best sense American.

(Sinclair 127-8)⁶

Canadians, though, were not as anxious to appear "American" as their neighbors desired. And probably in this spirit, before Canada became a Dominion, Dawson and many Canadian intellectuals were not in favor of making the country a free Confederation, lest it should fall into the hands of the United States and consequently run into a positivistic and purely technological cultural mentality. Such feelings, of course, were not going to increase the popularity of these intellectuals among the young, often eager for changes and more freedom, but Dawson was not afraid, four years before Confederation, to address his students with the following courageous remarks:

We must, at least in our present condition, either remain a dependency of the mother country, or fall into the hands of the United States. Yet this situation, while it affords no present hope of great political eminence or military success, is not without counterbalancing advantages. It gives us a position of humble and pacific usefulness, respectable, if not great, and tending to induce us to cultivate the arts and sciences of peace, rather than those ambitious projects which agitate greater states. (*Duties* 6)

However, Dawson, for many years a leader of colonial and Dominion culture, dreamed, with other English-speaking intellectuals, of a more ambitious scheme. As we discover in two letters sent in 1887 to George Gabriel Stokes, President of the Royal Society in London,⁷ Dawson stressed the importance of Canada as a branch of a proposed Imperial Geological Union, probably to avoid cutting scientific ties with the motherland. After much cultural work in the colony and then the Dominion, Dawson felt his country truly "imperial." He saw it, particularly from a geologic point of

view, as the promised land, the garden of the world, the museum of nature which Darwin failed to visit, thus depriving himself of true insight into nature.

Nonetheless, Darwinian theory had a social consequence which is worth mentioning. As Canada approached the twentieth century there was a basic commitment by English-speaking intellectuals to the British Empire, apparent in their desire to found an Imperial Federation. According to one of the supporters of this movement, George R. Parkin, the development of the English and their political ideas had been a steady process of evolution covering hundreds of years. In his words, "special capacity for political organization may, without race vanity, be claimed for Anglo-Saxon people." He viewed the world situation as a struggle for survival of the fittest; the fittest were the Anglo-Saxons, and the Empire should be consolidated by English-speaking Canadians to ensure success, while the racial and cultural inferiority of their French-speaking compatriots was a great hindrance to the government of Canada. The Imperial Federation was not realized, but such social Darwinism not only postponed the possibility of building bridges between the two ethnic groups, once allied against Darwin's theory, but widened a gap which remains open today.

NOTES

1. I have already examined nineteenth-century Canadian academies (Pighetti, *Scienza e colonialismo* 47-86). On the first Canadian academies there is a large bibliography. See Harris; A. F. Holmes, "The First Annual Report of the Natural History Society of Montreal," (*Montreal Gazette* Office, 1828); G. Lawson, "Remarks on the present State of Botany in Canada, and the Objects to be attained by the Establishment of a Botanical Society," *Annals, Botanical Society of Canada*, I, (1860-1862): 4-9; *Special Report on the Mechanics Institute 1881* (Toronto, 1881); Samuel Thompson, *Reminiscences of a Canadian Pioneer for the last fifty Years, An Autobiography* (Toronto: Hunter, Rose & Co., 1884); Antonio Drolet, *Les bibliothèques canadiennes 1604-1960* (Montréal: Cercle du livre de France, c.1965); Wallace. See also J. M. Beck. *Joseph Howe*, 2 vols. (Kingston and Montreal: McGill-Queen's UP, 1982, 1983).
2. See McCulloch 37-50, Harris 32-34, Masters 248-72. The naturalist John James Audubon visited the Pictou Academy in August 1833 to admire the scientific collection of birds by Thomas McCulloch (Herrick II, 49).
3. See McKillop and Berger for the moral questions raised by Darwinian theory.
4. On Provancher see Huard, Holland, and Pighetti, *Scienza e colonialismo* 175-8.
5. On the roots of this Canadian attitude, see Zeller.
6. See also Jarrell and Ball 127-28.

7. The complete texts of the previously unpublished letters follows this article. It is worth remembering that William Dawson had had a previous quarrel with the Royal Society when it refused to publish his Bakerian Lecture of 1870: "Præcarboniferous Flora of Eastern America." In a still unpublished letter of April 6, 1871, written by Dawson to the Council of the Royal Society, we clearly witness the bitterness caused by this refusal: "I do not desire to appeal from the decision of the Committee, which I suppose is not surprising in view of the present low state of Palæobotany in England, but I beg leave to request that you will have the kindness to direct *that the manuscript and drawings shall be immediately returned to me* in order that as early as possible I may publish them elsewhere" (emphasis added, Royal Society Miscellaneous Correspondence, 9 (1890-1873), 188). The manuscript was never returned and is still kept in the Royal Society Archives. Recently Susan Sheets-Pyenson kindly handed to me an article of hers on this quarrel entitled: "Pearls before Swine: Sir William Dawson's Bakerian Lecture of 1870."

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