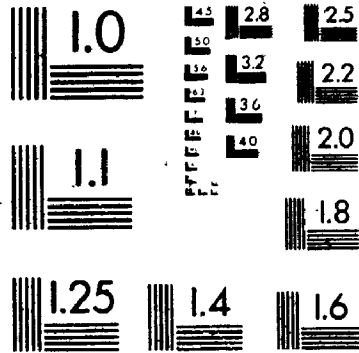


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THE PHILOSOPHY OF AGRICULTURE: THE PROMISE OF THE INTELLECT  
IN ONTARIO FARMING, 1835-1914

by

TOM NESMITH, M.A.

A thesis submitted to  
the Faculty of Graduate Studies and Research  
in partial fulfilment of  
the requirements for the degree of  
Doctor of Philosophy  
Department of History

Carleton University

Ottawa, Ontario

25 March 1988

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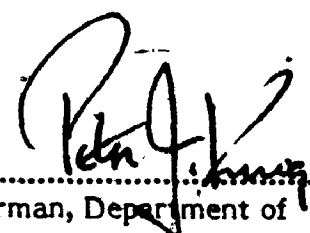
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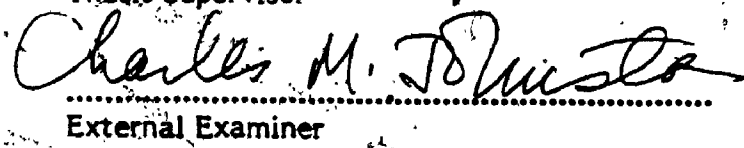
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## Abstract

By the early twentieth century, agriculture had become a formal academic as well as a manual pursuit. During the nineteenth century especially, the study of agriculture in Canada, as in other countries, acquired the support of an increasing variety of scientific and technical publications, experimental research sponsored by government departments of agriculture, and educational programmes at colleges and universities. In Ontario, the principal Canadian agricultural province, and the regional focus of this dissertation, this achievement was the result of the efforts of practical and scientific farm improvers who had argued since the 1830s that rural and indeed general progress depended upon the development of agriculture's intellectual foundations. This was the promise of the intellect in farming, and the centrepiece of a rationale and programme for agricultural improvement. Because it shares characteristics of other nineteenth-century promotional visions (such as engineer T.C. Keefer's appeal for railroad development in the Philosophy of Railroads), this approach might be called the "philosophy of agriculture." This vision of agricultural and general improvement through rural intellectual progress should, however, be seen as more than a mere promotional device. It was underpinned by philosophical ideas which were being taught at the principal colleges and universities in English-speaking Canada. (For this reason also, rural improvers in the province had a "philosophy" to advance.) The popular and rural formulation of these concepts in Ontario indicates that they had much greater currency among nineteenth- and early twentieth-century English-speaking Canadians than has hitherto been noted.

These ideas guided the improvers' attempts to transform rural Ontario into a latter-day agricultural Eden. By the late 1880s, the popular version of philosophical idealism which was espoused at the Ontario Agricultural College at Guelph gave this project unprecedented momentum. College men believed that farmers educated at Guelph could bring about a renewal of rural life in Ontario which would make the province the Garden of Canada and the British Empire. They also thought that this renewal would initiate a thoroughgoing regeneration of Canadian society. The college would rejuvenate rural, spiritual, and moral values which appeared threatened by rapid industrial and urban growth and the spread of secular ideas.

## Acknowledgements

This dissertation could not have been written without the generous assistance of several research institutions. I am particularly indebted to the staffs of the Agriculture Canada Library, The National Library of Canada, the National Archives of Canada Library, the Archives of Ontario, the University of Toronto Archives, and the University of Guelph Library Archival Collections.

I have been an archivist at the National Archives of Canada for most of the period in which the work on this thesis was done. Among the many colleagues at the National Archives whose interest and encouragement helped sustain the project, I would like to thank especially Brien Brothman who, although writing his own dissertation, often took time to discuss my progress, Bruce Wilson, who made valuable comments on Part One, and Terry Cook, who went far beyond all reasonable collegial expectations. He shared both his time and knowledge of intellectual history unreservedly.

In the History Department of Carleton University, Graduate Supervisor Del Muise was attentive to my particular circumstances as a part-time graduate student (which was my status for most of the time required to prepare this dissertation). My thesis supervisor, H. Blair Neatby, did likewise, and much more. Without his encouragement, patience, and direction, this dissertation would not have been completed.



My parents and my brother Alan were unfailingly supportive as the peaks and valleys of research and writing were negotiated. Sharon, my wife, made it all possible in innumerable ways. I will never find words or means to thank her enough. Julia, Emily, and Laura, our daughters, knew that something called a "thesis" frequently occupied their father's time and attention, yet they welcomed that word to their vocabularies at a very young age.

Finally, I would like to acknowledge the indispensable contribution of Cheryl DiMaria of the National Archives, who typed every draft of this dissertation and the final copy. What a story she could now write!

I have had as supportive a family and group of friends and colleagues as anyone could hope for in an undertaking such as this. The deficiencies which remain in the work which follows are thus my responsibility alone.

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## Introduction

At the end of the eighteenth century, the chief British architects of Upper Canada expected the new colony to be a "granary" for Lower Canada and Britain. The first Lieutenant-Governor of Upper Canada, John Graves Simcoe, wanted an agrarian social foundation for the colony. "A numerous, industrious Agricultural People," Simcoe said, "is the real force of a nation and the most desirable strength of a frontier Colony." There is little evidence in the early nineteenth century, however, that Upper Canadian agricultural products were a major factor in the local economy, or that farmers were seen to be worthy of Simcoe's confidence.<sup>1</sup> Exported wheat became the colony's sole significant cash crop between the 1790s and 1820s; and during that time it was neither able to generate much income for most farmers nor much economic growth. In the 1820s and 1830s, sharp fluctuations in wheat export totals and prices, along with damaging crop failures, made it a particularly irregular commodity.<sup>2</sup>

The indifferent results of Upper Canadian agriculture did little for the social standing of the colony's farmers. British travellers could be especially withering in their criticism of them. "There is hardly a clean or a well-ploughed field in the western part of the Province," wrote John Howison in the 1820s, "nor has any single acre there, I believe, ever yielded nearly as much produce as it might be made to do under proper management." An Irish farmer, who eventually settled in Hastings County, roundly condemned Canadians as "very slovenly

farmers" during a visit to Upper Canada in 1834. He added that "they appear devoid of natural energy. They devote a large portion of their time to smoking, drinking, chewing tobacco, and talking politics, for every man here is a politician." Even William Evans, a leading Lower Canadian farmer, who recognized that such criticism was not always fair, had to admit in 1835 that farms in the Canadas were poorly cultivated and that farming was stigmatized as an occupation for those who could qualify for no other. Indeed Evans thought that wealthy and educated members of Canadian society seemed indifferent to agricultural improvement. He urged farmers to attack these problems with the improvements in science, livestock raising, crop rotations, manuring, and land drainage which the eighteenth-century agricultural revolution had brought to Britain and other progressive parts of Europe.<sup>3</sup>

By the early 1840s, a shift can be detected in the tide of opinion on Canadian farming. The British American Cultivator, a Toronto agricultural periodical edited by Evans, was pleased to observe "that there is a favourable spirit daily increasing upon that so long despised and neglected subject AGRICULTURE."<sup>4</sup> The Cultivator alluded to developments which were making the 1840s a watershed in the history of agriculture in Canada West. After the lengthy pioneer apprenticeship, the great agricultural potential of the region was finally and unequivocally being demonstrated. During the decade farmers in the colony quadrupled production and tripled exports of wheat.<sup>5</sup>

The idea that agricultural prospects were improving in the 1840s was sustained by more than the expansion of the wheat economy. Livestock raising,

the cornerstone of nineteenth-century progressive agriculture, was stimulated by a small group of cattle breeders who rose to prominence in agricultural affairs in Canada West. They imported leading breeds of British cattle in the late 1830s and the 1840s. The impact of these animals on the quality of Canadian herds was noticeable by the mid-1840s.<sup>6</sup> At the same time, advances in Europe and the United States in scientific knowledge about farming and in farm implements seemed to promise greater and surer progress. With these means, Canada West could throw off the unproductive and socially disreputable farming with which it had been saddled. By the end of the 1840s, faith in the developmental role of Canadian agriculture had been markedly strengthened. The Canadian Agriculturalist, another Toronto agricultural periodical, commented in 1849, "We feel quite confident that this country possesses the requisite elements of national greatness, and that one of the principal means, if not the means, for accomplishing that patriotic object is the development of her immense agricultural resources."<sup>7</sup>

Farming could be the engine of general progress because a growing body of agricultural knowledge appeared ready to fuel it. The leading advocates of improved farming before 1914 thought that the principal challenge for farmers was intellectual. The most important skill farmers needed was the ability to assimilate, apply, and contribute to this knowledge. To do so, they had to have properly developed minds. As William Evans said, "Mind is the man, and the man must be what he knoweth, and his value to himself, to his friends, and to society will be proportioned to the quantity of good fruits produced from the right exercise of his knowledge. Is not knowledge then worth seeking for, and greatly

to be desired?"<sup>8</sup>

Evans's comment, when unfolded to permit a full view, revealed an attractive social blueprint for rural Canada:

It is therefore, through education first, and then the diffusion of useful and practical knowledge among the people, that the power of labour can be most effectually exerted, and our natural circumstances most completely taken advantage of; it is this that would enable every man to apply the best powers of his mind and body, to improve the condition of himself and his family. . . .

How delightful it would be to see this application of the accumulations of our industry, in wide extended improvements of new lands for the settlement of our families, in well cultivated fields, yielding abundant and excellent crops -- numerous and well fed flocks and herds -- comfortable residences for all classes -- increasing towns, villages, trade, manufactures and commerce -- rail-roads, and other roads to facilitate intercourse, and endowments for education. The means to accomplish all this is in our own power, if we will only make them available. . . .

It is agriculture, and agriculture alone, that can support the inhabitants of such a country as this in plenty and real dignity. If our lands are covered with corn and cattle -- corn and cattle will always purchase what manufactures and delicacies we may require from other countries.

I do not believe that there is a community in the world, all the members of which might enjoy that degree of comparative independence and comfort, necessary to real happiness, more

could make the greatest progress towards regaining his Edenic birthright. Agriculture had a distinct mission in the divine programme of redemption. And Canada West was well-suited to play a major part in this endeavour because, as Egerton Ryerson told rural audiences in 1847, "Divine Providence has especially marked out Upper Canada for Agriculture, and has destined the mass of its inhabitants to be 'tillers of the ground'."<sup>85</sup>

With these moral advantages, farmers, if apprised of their true possibilities, could move rapidly to their rightful status in society. For Hutton and Ryerson, farmers who received a common school education with an agricultural component and who thereafter stayed abreast of the latest developments in agricultural knowledge would be able to share positions of leadership in Canada West with members of other professions.<sup>86</sup> Scientific agriculturalists could expect to lead the province into a new era in which their intellectual ability provided the key to agricultural progress and agricultural progress became the basis of Canadian development.

The very nature of agricultural knowledge magnified the importance of the moral initiative required to appropriate it. The available scientific and practical agricultural knowledge in the 1830s and 1840s was said to be quite straightforward, easily learned, and readily applied. In an article entreating farmers to prepare their land and seed properly for wheat-growing, The Canadian Agriculturalist outlined the essential simplicity of the moral and intellectual regime under which they worked: "It being true in the natural, as in the moral world, that men reap what and as they sow; we will proceed just to remind our

energies in this way. Improvers believed that mankind laboured under the "primeval curse" which had been meted out by God in the biblical Garden of Eden. They therefore faced a refractory natural environment with intellectual and physical resources which were not only intrinsically limited but also, particularly in the case of the former, inaccessible without a high degree of resolve and moral effort.

Between about 1850 and the mid-1880s, the distance between the hopes attached to this approach to agricultural knowledge and the limited results it produced grew to intolerable lengths. The difficulty began in the early 1850s when the failure of chemistry to come to the farmers' aid produced scepticism about the utility of science in farming, even among well-informed progressive farmers. These men insisted that even greater emphasis be placed on obtaining agricultural knowledge through practical, personal experience. Enthusiasts for science in the 1840s were on the defensive in the 1850s. However, the severe limitations of both practical and scientific agriculture knowledge were dramatized in 1857 and 1858 by disastrous wheat crops and insect deprivations. The leading agricultural experts and the institutions they had established in the 1840s and early 1850s were unable to cope with these problems. Spokesmen for agricultural improvement between about 1850 and the mid-1880s still claimed to be interested in any scientific developments which could help farmers, but they scrupulously avoided reliance on the doubtful scientific knowledge then available. In their view, a "science" of agriculture could be formulated, but it would consist largely of systematized knowledge of farm practice until the natural sciences were more effective.



In the 1860s and 1870s, this science of agricultural practice was heavily taxed by the mounting social, economic, and technical problems of Ontario farming. The decline of the wheat staple in the 1860s and 1870s turned the difficulties of the late 1850s into a much deeper rural social and economic crisis. The much touted rural foundations of the province's development were also threatened by shortages of arable land, the attraction of urban and industrial work, competition from the expanding American midwest for farm immigrants and overseas wheat markets, and the prospect after the acquisition by Canada of Rupert's Land in 1870 of a vast alternative wheat-growing region on the prairies. The situation had become serious enough by 1880 to warrant a provincial royal commission to examine Ontario's agricultural conditions and prospects. The main conclusions of the Ontario Agricultural Commission urged farmers to switch their primary allegiance from wheat to a variety of other commodities grown in an intensive system of commercial mixed agriculture. This appeal had often been made in the 1860s and 1870s in response to the problems of provincial agriculture. The decline of the wheat staple from the late 1850s through the early 1880s was already forcing Ontario farmers to rely much more heavily on mixed farming alternatives such as livestock raising, dairying, and fruit and vegetable growing. To construct the rural Eden on which they thought Ontario's and thus Canada's progress depended, Ontario farmers had to obtain an even wider body of practical knowledge about their new crops, products, techniques, markets, and equipment.

Since by the early 1870s personal experience and initiative, shared through the farm journals and societies (the tools fashioned mainly in the 1840s) were not accomplishing the transition to the new farming in a satisfactory manner, the

Ontario government tried to assist farmers with a new agricultural institution. In 1874 the government opened the Ontario School of Agriculture and Experimental Farm near Guelph. (The school was renamed the Ontario Agricultural College and Experimental Farm in 1880.) It was to teach and investigate the requirements of mixed agriculture in the preferred practical way. By the end of the 1870s the school's modest progress had at least raised the hope among its officers that Ontario might eventually join the world's leaders in the "march of improvement." And the members of the Ontario Agricultural Commission concluded that the province must look to the school for leadership during the transition to mixed farming.

Only a few years after the commission's endorsement, however, the college itself was in crisis. The practical approach to agricultural education and experiment (which the underdevelopment of science had imposed and the adjustment to mixed farming had intensified) produced results so inconclusive that the institution's *raison d'être* was openly questioned by its own staff, students, and graduates. Without a firm basis in agricultural knowledge, the long-anticipated social and economic benefits of agricultural improvement seemed less realizable. The ordinary farmer's personal experience was no longer sufficient to acquire or provide the greatly increased knowledge on which such hope rested; and his experience could not apparently be significantly improved upon by the experts in practical agriculture entrusted with that responsibility by the provincial government.

In response to this crisis at the end of the 1880s, and under the philosophical

inspiration of late Victorian idealism, a different faculty and programme were being installed at the college. Idealists taught that hitherto inaccessible depths of knowledge could be reached through a dramatic expansion of human moral and intellectual capacities. This development of mind and "character" could be achieved, the college's staff thought, through liberal Christianity, study of the scientific foundations of agriculture, wide reading in literature, poetry, history, and current affairs, participation in athletics, informed travel, and an intense campus social life. College graduates would have both the intellectual power to master any technical agricultural problem and the social and economic standing needed to obtain a just share in the leadership of society.

Emboldened by idealism, Ontario's Agricultural College (OAC) became the principal custodian in the 1890s and 1900s of a social vision for rural life in the province which may be called Ontario agrarian nationalism. This concept of nationalism at OAC posited that the college education in scientific agriculture was the bulwark of the rural values deemed essential to the regional leadership Ontario must provide in order for Canada to achieve national greatness in the British Empire and wider world. Ontario agrarian nationalism at OAC was also strengthened in the 1890s and 1900s as the province, with the college's assistance, completed the transition to mixed farming and experienced unprecedented agricultural productivity and prosperity. OAC became the centre of provincial efforts to improve rural life. Its staff and graduates distinguished themselves in farming, agricultural science and education, political life, government and military service, and in churches and other social institutions. The long-awaited rural Eden in Ontario finally seemed about to be achieved.

This dissertation is primarily intended as a contribution to intellectual history. It is a study of the ideas about acquiring agricultural knowledge which guided the principal promoters of agricultural improvement in Ontario between the 1830s and 1910s. These promoters fall into two groups. Prior to the establishment in 1874 of Ontario Agricultural College, they include farmers who were also leading members of the provincial agricultural associations, agricultural officials in the colonial and provincial governments, and publishers and editors of Ontario's farm periodicals. After 1874, the dissertation examines only the staff, students, alumni, and prominent supporters of OAC, as well as the officials in the Ontario Department of Agriculture and provincial ministers of agriculture who administered the college. A study of these individuals provides clear insight into the Ontario vision of rural progress through intellectual development.<sup>11</sup>

As a contribution to intellectual history the dissertation pursues what A.B. McKillop has called "the search for Canadian thought" or an understanding of "the place of ideas in Canadian life." McKillop points out that until the early 1970s the prospects for such a search were in question because it had long seemed that Canadians had eschewed abstract thought and that the ideas which they had articulated were little more than "intellectual commonplaces," as S.F. Wise termed them.<sup>12</sup> These doubts about the importance of intellectual life in Canada and the value of studying the evidently modest notions which Canadians held were removed primarily by three books: Carl Berger's The Sense of Power: Studies in the Ideas of Canadian Imperialism, 1867-1914 (Toronto, 1970); S.E.D. Shortt's The Search for an Ideal: Six Canadian Intellectuals and their Convictions in an Age of Transition, 1890-1930 (Toronto, 1976); and McKillop's A Disciplined Intelligence:

Critical Inquiry and Canadian Thought in the Victorian Era (Montreal, 1979). Berger's analysis of the "commonplaces" of popular thought on the country's place in the British Empire earned intellectual history a major historiographical achievement in Canada. Short and McKillop, meanwhile, demonstrated that a study of the impact of formal philosophical thought in Canada could be undertaken with an expectation of considerable rewards. McKillop's book showed that Victorian Canadians not only strove at a very high level to formulate their world views, but they also wrestled with the problem of clarifying the nature and role of the mind itself. A Disciplined Intelligence is the story of their exploration and enlargement of the sphere of legitimate intellectual activity.

As might be expected, discussion of formal ideas, including conceptions of the intellect, was conducted with the most intensity and sophistication within the small circle of university professors of philosophy, theology, literature, and the classics which receives most of McKillop's and Shortt's attention. However, the work of Terry Cook and Anne Wood indicates that formal thought had a significant influence beyond the university lecture hall. Cook's dissertation shows that George Parkin's extensive campaigns for imperial unity, which made him Canada's most prominent public figure at the turn of the century, were inspired by a popular version of the philosophical idealism he had absorbed as a student at Oxford in the 1870s.<sup>13</sup> Anne Wood's Idealism Transformed: The Making of a Progressive Educator (Montreal, 1985), which draws heavily on McKillop's and Cook's work, concludes that, like his contemporary, Parkin, Ontario educator J.H. Putman sought practical applications of philosophical idealism in public life. (Putman had been taught by idealist philosopher John Watson at Queen's

University.)

This dissertation presents evidence of an even broader concern about the life of the mind in Victorian Canada than these works reveal. The formal thought articulated by the academic elite not only received popular expression in practical affairs from a few outstanding individuals such as Parkin and Putman, it is also detectable in the approaches to agricultural knowledge adopted by a large group of agricultural educators, scientists, journalists, and officials in the Ontario Department of Agriculture. They believed that agricultural progress required an appreciation of the intellectual nature of farming, and that agriculture could only be improved when farmers obtained an understanding of the properties of the mind and the sources of intellectual development. This was the cornerstone of the philosophy of agriculture.

## Notes

1. Vernon Fowke, Canadian Agricultural Policy: The Historical Pattern (Toronto, 1946), pp. 71-72; 105-06; L.F.S. Upton, ed., The United Empire Loyalists: Men and Myths (Toronto, 1967), p. 47.
2. John McCallum, Unequal Beginnings: Agriculture and Economic Development in Quebec and Ontario until 1870 (Toronto, 1980), pp. 11-15; Douglas McCalla, "The Wheat Staple and Upper Canadian Development," Historical Papers/Communications historiques (1978), pp. 36-37; T.W. Acheson, "The Nature and Structure of York Commerce in the 1820's," in J.K. Johnson, ed., Historical Essays on Upper Canada (Toronto, 1975), p. 172.
3. G.M. Craig, ed., Early Travellers in the Canadas, 1791-1867 (Toronto, 1955), p. 64; G.E. Boyce, Hutton of Hastings: The Life and Letters of William Hutton, 1801-1861 (Belleville, Ontario, 1972), p. 23; William Evans, A Treatise on the Theory and Practice of Agriculture (Montreal, 1835), pp. ix, 46, 124, iii-iv.
4. The British American Cultivator, March 1842, p. 34.
5. M.C. Urquhart and K.A. Buckley, eds., Historical Statistics of Canada (Toronto, 1965), p. 384; McCallum, Unequal Beginnings, p. 15; Douglas McCalla, "The Canadian Grain Trade in the 1840's: The Buchanan Case," Historical Papers/Communications historiques (1974), pp. 96, 109-10.
6. Ann MacKenzie, "Animal Husbandry in the 1840's as Reflected in the Agricultural Journals of Canada West," Ontario History, 66, no. 2 (June 1974), pp. 116-17; R.L. Jones, History of Agriculture in Ontario, 1613-1880 (Toronto, 1946), pp. 149-51.
7. The Canadian Agriculturalist, 1 January 1849, p. 1; (emphasis in original).
8. William Evans, Agricultural Improvement (Montreal, 1837), p. 20.
9. Evans, Treatise, p. vii.; (emphasis in original).
10. H.V. Nelles, ed., T.C. Keefer, Philosophy of Railroads (University of Toronto Press edition, 1972), pp. xxv, 7-9. Only one example of a contemporary use of the phrase the "philosophy of agriculture" has surfaced in my research. The British botanist Erasmus Darwin (1731-1802), who was Charles Darwin's grandfather, used it in the title of his Phytologia or The Philosophy of Agriculture and Gardening, which was published in 1799.
11. Although this approach permits a study of the ideas of those who were most heavily involved in providing agricultural knowledge to Ontario farmers, it does not include all contributors to this process. The role of the federal government, for example, is largely excluded. Federal involvement in

agricultural improvement in Ontario dates from the establishment of the experimental farm system in 1886. The Central Experimental Farm near Ottawa was one of the first five farms authorized in 1886. Before 1916, the experimental tobacco station at Harrow was the only other federal agricultural research station in Ontario. The federal government had national and, particularly, western Canadian priorities. Experimental farms were established in British Columbia, the North West Territories, and Manitoba by 1888. The prairie region and British Columbia acquired an additional seven experimental stations and two sub-stations before 1916. Quebec, which was also served by the Central Experimental Farm, had five stations by 1916. The Maritime provinces had a farm at Nappan, Nova Scotia and three stations by that time. These institutions, unlike Ontario Agricultural College, were not residential colleges of agriculture. OAC, therefore, while not the only government agency in Ontario which attempted to expand agricultural knowledge, predates federal efforts to do so, focused its activities more directly on rural Ontario's needs, and went far beyond federal initiatives in the province by being an institution of higher agricultural education as well as a research facility. See Fifty Years of Progress on Dominion Experimental Farms, 1886-1936 (Ottawa, 1939) pp. 8-11.

12. A.B. McKillop, Contours of Canadian Thought (Toronto, 1987), pp. 22-24.
13. Terry Cook, " 'Apostle of Empire': Sir George Parkin and Imperial Federation," (Ph.D. thesis, Queen's University, 1977); see also Terry Cook, "George R. Parkin and the Concept of Britannic Idealism," Journal of Canadian Studies 10, no. 3 (August 1975).



**Part One**  
**Practical Agriculture**  
**Introduction**

Part One examines the intellectual basis of the first sustained, organized effort to improve agriculture in Canada West and Ontario. This project gained momentum in the 1840s in response to the achievements of the late eighteenth-century British "agricultural revolution" and to early nineteenth-century advances in farm implements and applications of science to agriculture. It took initial shape in the agricultural publications, associations, exhibitions, educational programmes, and government agencies established in the 1840s and early 1850s. It culminated in the establishment of the Ontario Agricultural College and Experimental Farm in 1874. Influenced by orthodox Protestant, Baconian, and "Common Sense" ideas about learning, the leading agricultural improvers during these years strongly emphasized the practical nature and empirical origins of the knowledge required in progressive farming. This avenue to knowledge, they thought, would eventually lead to the removal of the "primeval curse" and a new Eden in rural Ontario.

Chapter one of Part One examines the immediate origins and early course of efforts to improve agriculture through rural intellectual development. The chapter also discusses the first serious setbacks for the improvers: the failure of science to assist agricultural practice (which was not acknowledged until the early 1850s) and the wheat crisis of 1857 and 1858. Chapter two discusses the

intellectual response to rural Ontario's mounting social and economic problems in the 1860s and 1870s. Given the increasing weakness of the wheat economy after 1857 and the continuing ineffectiveness of the sciences in agriculture, improvers advised Ontario farmers to pursue mixed farming and to acquire the much larger body of knowledge which was involved in mixed farming through more precise understanding of practical field experience. They argued that this could be accomplished by heavier reliance on formal experiments. Leading improvers also believed that the added intellectual rigour and greater expense of practical, experimental, mixed agriculture justified the creation of an educational institution which would guide farmers through the difficult transition awaiting them. Chapter three shows that agricultural officials in the provincial government and the supporters and staff of the Ontario Agricultural College and Experimental Farm intended it to become the vehicle for this advanced form of practical agriculture. The final chapter of Part One deals with the limitations of this more refined practical approach to agricultural knowledge. The modest results of experimental farming at the college by the mid-1880s were symptoms of the exhaustion of that approach to the study of agriculture. The promise of the intellect in agriculture was thus still largely unfulfilled. This crisis coincided with the demise of the mid-Victorian orthodox Protestant, Baconian, and "Common Sense" paradigm for the pursuit of knowledge in British North America. As Part Two will demonstrate, the new approaches to the pursuit of knowledge which were advanced at the college by the late 1880s were a popular manifestation of the new paradigm then being provided by philosophical idealism.

## Removing the "Primeval Curse"

For advocates of farm improvement such as William Evans, human history began in the biblical Garden of Eden where, he wrote, "the earth produced its fruit spontaneously; the soil, without being torn and tormented, would have sufficiently satisfied all the wants and desires of man, and other animals." The Fall and their expulsion of man from the garden necessitated the introduction of agriculture: "The ground cursed by God, lost its original fertility, and produced thorns and thistles, making it necessary for man to cultivate, dress, and dung it. . . . Accordingly, Cain, the son of Adam, we are informed, was a tiller of the ground and the first agriculturalist." In 1848, Lord Elgin, the Governor General of Canada and a strong supporter of agricultural improvement, earned the applause of an audience in Hamilton when he remarked that God had given agriculture to mankind as a means of mitigating the severity of this penalty. "Agriculture is the art," he said, "by the cultivation of which, a gracious and merciful God, enables his fallen creatures to extract a blessing out of the primeval curse."<sup>1</sup>

For centuries after expulsion from Eden, agriculture had allowed humanity a rude subsistence under the primeval curse; but agriculture, recently linked with science and other knowledge, had become a means of human progress which opened the possibility of mankind's restoration to the original environment and

status in the created order God had given it before the Fall. The Canadian Agriculturalist offered that promise in reprinting an address made by the Bishop of Oxford in connection with the preparations for the Crystal Palace Exhibition of 1851. "What are all these discoveries of science?" asked the bishop, "What are all those mighty engines which almost annihilate space, and connect together the most distant places? What are they but a giving back to man his original birthright, a power over the elements, and a command over the material world?"<sup>2</sup>

Mankind's attempt to restore the Edenic order in nature involved more than a material accomplishment. The bishop believed that the introduction of scientific and technological advances brought humanity closer to the divine intention for the creation and thus to man's initial identity as the spiritual image of God:

And what are all the works that we are engaged in doing, but a striving to imitate, by dint of hard labour, what the Almighty will did with a word, when out of the dumb forces of the struggling and confused chaos, he called forth by his fiat the harmonious voice of Nature; when out of the boiling and seething mass in that chaotic cauldron he called forth order and beauty, decked the earth with trees, brightened it with flowers, gladdened it with his sun, and finally set man in the midst of it to achieve new triumphs, and to attain new conquests by yielding gladly to that primeval curse which God turned into a perpetual blessing, when he made that labor, which is the instrument of man's victory, to be at the same time the discipline of his spirit.<sup>3</sup>

These occasionally exhilarating visions of the primeval curse removed had more immediate origins in intellectual developments in European agriculture.

Williams Evans conceded that previous generations of farmers -- going as far back as the ancients -- had introduced progressive changes in farming, but he contended that prior to the eighteenth century these advances had been halting and sporadic. For Evans, the pace of agricultural improvement greatly quickened only in the eighteenth century when it reached the speed of a "march." Since that time, he wrote in 1835, "the march of agriculture has been progressive throughout Europe" and especially in Great Britain. One of the most significant results of European and British progress had been the accumulation of "a varied and voluminous mass of knowledge" about farming which had to be assimilated before further progress could be made.<sup>4</sup> British farmers owed the intellectual advances of the late eighteenth- and early nineteenth-century "agricultural revolution" to a practical trial-and-error approach rather than to scientific research of more efficient mechanical aids. (Manual labour with hand-held tools was common as late as the 1850s.) Farmers in areas celebrated for progressive agriculture introduced better crop rotations. These substituted fodder crops and pasture for the bare fallow common under traditional open-field farming in order to rest the soil after two or three years of grain crops. The greater supply of roots and soil-enriching grasses allowed farmers to keep a larger number of healthier livestock, which, in turn, improved cereal and fodder yields because it increased the amount of animal manure, the principal fertilizer. In response to a growing urban population and rising food prices in the late eighteenth century, total output of British agriculture increased significantly.<sup>5</sup>

The idea that agricultural practices could be improved raised interest in the contributions to better farming which new sources of knowledge (such as the then-

emerging science of chemistry) might make. In particular, the research during the first half of the nineteenth century of chemists Humphry Davy of Britain and Justus von Liebig of Germany confirmed that improved techniques which had been worked out in practical experience also had a scientific basis. In the early nineteenth century, the understanding of the relationship between science and agriculture in Britain relied most on Davy's Elements of Agricultural Chemistry, which appeared in 1813. Davy's elucidation of the chemical processes involved in the action of organic manures upon plants opened the possibility of improved fertilizing methods based on scientific analysis of plants, soil, and manure. His great prestige as a chemist helped attract widespread attention to his findings in Britain, the United States, and British North America. Davy's Elements was the standard work in scientific agriculture before 1840.<sup>6</sup>

Publication between 1840 and 1843 of Liebig's chemical research heightened enthusiasm for agricultural improvement in Britain and North America by holding out the prospect of unlimited soil fertility through scientific means. Liebig advanced a theory of plant development which took proper notice of the crucial role of minerals. He attributed the already known beneficial effects of mineral fertilizers such as gypsum and lime to their ability to transfer nitrogen from the atmosphere to the plant. Liebig said it was the primary purpose of fertilizers to supply these inorganic necessities. His bold conclusions encouraged the view that soil infertility could be easily combatted by augmenting the often limited supply of manure and other wastes used as fertilizer with artificial fertilizers manufactured from chemical sources of minerals such as phosphates.<sup>7</sup>

By the 1840s agriculture had begun to acquire a scientific foundation which promised to support practical improvement. In addition to the knowledge which practical experience alone had obtained, new vistas of scientific knowledge seemed to be opening. In response to this prospect a new group of agricultural scientists, journalists, and publishers emerged to promote the scientific findings of men such as Davy and Liebig and develop practical applications of their ideas. In Britain, the Royal Agricultural Society was established in 1838 with the expressed purpose of wedding practice with science. "Superphosphate," the first chemical fertilizer, was manufactured for general use in Deptford, England in 1843 by J.B. Lawes (who had been studying the impact of fertilizers on different crops since 1835) and his assistant Joseph Gilbert.<sup>8</sup> Lawes published his research with Gilbert into agricultural chemistry in the Royal Society's prestigious Journal in 1847. James Johnston, the professor of chemistry at the University of Durham, England between 1833 and 1848, became one of the first chemists to make a career working directly with farmers on problems encountered in the application of science to agriculture. In 1843 he became the chemist for the Agricultural Chemistry Association of Scotland at its new Edinburgh laboratory. His many popular writings in the 1840s and 1850s aimed to improve the methods farmers used in carrying out their own field experiments.

Following in Davy and Liebig's steps, Johnston advocated chemical soil and fertilizer analysis to help farmers select exact amounts of the correct fertilizers for counteracting deficiencies in their soils. Johnston's practical bent accounts for his extraordinary international appeal. His laboratory attracted students and colleagues from the United States and Europe. In 1849 and 1850 he toured the

United States and British North America as the leading expert in scientific farming in the leading agricultural nation.<sup>9</sup> Among his American protégés he could count John Pitkin Norton, the first occupant of the chair in agricultural chemistry which had been established at Yale College in 1846. Norton, who was a student at Johnston's Edinburgh laboratory between 1844 and 1846, made Yale the centre of scientific agriculture in the United States until his death in 1852. He turned the Yale laboratory over to soil analysis for farmers and zealously promoted its merits in the farm press and in addresses to agricultural societies.<sup>10</sup>

If, as Johnston said at a meeting of the New York State Agricultural Society, British farmers "have thrown down the gauntlet to the farmers of the world," there were those in British North America who also intended to retrieve it.<sup>11</sup> Britain's agricultural progress was the subject of a lengthy survey of agricultural history and contemporary science and practice written by William Evans and published in 1835 as A Treatise on the Theory and Practice of Agriculture. The book argued that the most significant development in agriculture since the turn of the nineteenth century was that British farm practice had acquired a scientific base which made it the model for other nations. Spurred by British successes and the example of the American farm journals (which were read in British North America), Evans and W.G. Edmundson began publication of The British American Cultivator in Toronto in 1842. The Cultivator intended to "open a field through which our men of science and ability can communicate freely to their brother farmers" and to encourage the introduction of "the most approved system of agriculture practised in the British Isles."<sup>12</sup>



The Cultivator wanted to be the voice in British America of what it called "the agricultural reform movement" which had been born of the "revolution" in knowledge transforming farming into a science and whose progress could be measured and advanced by a flourishing farm press, the spread of agricultural societies and exhibitions, and, above all, by government assistance to education in scientific agriculture.<sup>13</sup> The paper expected George Buckland to be a key figure in the "reform" effort. Buckland immigrated to Canada West from Britain in 1847 in the hope of establishing an agricultural school and model farm where practical and scientific agricultural improvements could be taught and demonstrated. He had been a land agent in the County of Kent, where he established a reputation for thorough knowledge of improved farming in public lectures and with an essay published in 1845 in the Journal of the Royal Agricultural Society of England.<sup>14</sup>

Once in Canada, Buckland set about the task of bringing Canadian farmers up to date with the latest developments in the application of science to farming. The Cultivator made him an editor in October 1847; he became a regular contributor in 1848 to its successor The Agriculturalist and Canadian Journal; and in January 1849 he appeared as the first editor of the successor to the Journal, The Canadian Agriculturalist. His ideas reflect the practical emphasis James Johnston gave agricultural chemistry in Great Britain and the influence of Davy and Liebig. (The Canadian Agriculturalist called Johnston "the ablest writer of the present day on scientific agriculture.") Buckland thought science validated the improved farming techniques discovered through trial and error in practical experience. With science to assist them, improving farmers could acquire an understanding of why drainage, deep ploughing, manuring, and crop rotation were indispensable to better farming.<sup>15</sup>

If in the 1840s agricultural chemistry appeared ready to provide better guidance for farm practice, improved livestock-raising was expected to supply other necessary components of agricultural success. Evans summarized the interrelationships between the various elements of proper farming in his 1835 Treatise. He wrote that Canada's "arable culture cannot be profitably maintained without adopting a rotation of crops, in which a diversity of species of plants shall be introduced; and to consume the portion of these crops which is only adapted to the feeding of cattle, the stock of cattle must be increased, as well as to supply manure for arable culture, without which crops will not be raised generally that will pay the expense of production."<sup>16</sup> The crucial importance of livestock in early nineteenth-century scientific agriculture helps to explain the leading part taken by Canada West's livestock improvers in the cause of farm progress during the 1840s. Scottish-born Adam Fergusson was easily the most prominent member of the group. The Highland and Agricultural Society of Scotland sent Fergusson to North America in 1831 to assess prospects for Scottish farmers who were thinking of settling there. His published report to the society appeared in 1832 and was appended in 1833 to his Practical Notes made during a tour in Canada, and a portion of the United States. In 1833 he returned to Canada with his family and established Woodhill farm near Waterdown in the Gore District.<sup>17</sup> Fergusson's interest in improved livestock came early under the influence of the renowned English breeder Thomas Bates, whom Fergusson first visited on Bates's Northumberland estate in 1813. There Fergusson was introduced to Bates's much admired herd of Durham cattle. In 1834 Fergusson received the first shipment of Durhams and found they adapted well to Canadian conditions and began selling their offspring to other Canadian breeders and to American buyers as far away as

Kentucky.<sup>18</sup>

With this background Fergusson not unnaturally became one of the earliest advocates of the formation of a central agricultural association in Canada West. After the Provincial Agricultural Association came into being in 1846, he served as its president in 1848. He also sat on the Committee of Management for the association's first Provincial Exhibition, which it held in Toronto in October 1846, and there he delivered the association's first annual address. The premiums awarded for the best cattle displayed at the exhibition brought more prize money than was awarded for any other animals, plants, or implements exhibited. Among those with prize-winning entries in the six categories contested by Durham cattle, John Howitt of Guelph, whose cattle won three of six, purchased a Durham bull from Fergusson in 1849, and John Wetenhall, Fergusson's neighbour in the Gore District, became president of the association in 1850. Wetenhall, E.W. Thomson (who was the first president), and W.G. Edmundson of the Cultivator (the association's first secretary and treasurer) prepared a draft constitution for the proposed body during the summer of 1846. Not surprisingly, they listed livestock improvement as its first objective.<sup>19</sup>

The livestock breeders included men who became some of the wealthiest and most highly respected farmers in the province. Their farms were considered model operations by the agricultural press. On a tour of the Wellington District in 1849, George Buckland visited the farms of John Howitt and John Harland, who later became president of the Provincial Association. "The stock of this district, as a whole," Buckland reported, "including both sheep and pigs, is superior to what

we have seen any where besides." Buckland's trip included a stop at David Christie's farm in Dumfries Township in the Gore District. Christie had been one of the founders of the Provincial Agricultural Association. He had judged the cattle competition at the 1846 Provincial Exhibition and, like Howitt, purchased Durham cattle from Adam Fergusson. In 1855 and again in 1870-71 Christie was the association's president.<sup>20</sup>

During the 1850s and 1860s Christie acquired a 540 acre estate in the Gore District near Paris. And like other prominent Canadian livestock raisers, his local influence extended into politics. In the late 1840s Christie was a leading member of the "Clear Grit" group. Christie represented Wentworth County in the provincial legislature between 1851 and 1854 and the East Brant riding from 1855 to 1858. He won a seat in the Legislative Council in 1858 and later became a senator in the federal Parliament. In 1863 Christie became a member of the Senate of the University of Toronto. He joined Adam Fergusson, who had been named to the university senate in 1856. Fergusson sat as a Reformer in the Legislative Council from 1839 until he died in 1862. John Wetenhall, his friend and sometime associate in the purchase of pure-bred cattle, was the Reform member for Halton until defeated in 1850 in a major by-election victory for the Clear Grit candidate Caleb Hopkins.<sup>21</sup>

It is indicative of the rapid pace of change in agricultural prospects in the 1840s that in the early excitement about chemistry The British American Cultivator had in 1843 actually discounted the role labour-saving machinery would play in farm progress. American developments in agricultural machinery quickly

forced progressive farmers in Canada West to retire that view. In 1845 the York Agricultural Society sent the Cultivator's W.G. Edmundson to report on the implements displayed at the New York State Agricultural Society's exhibition at Utica. Obed Hussey's famed reaper so deeply impressed him that he strongly urged the members of the York society to import the machine in time for the harvest of 1846. The first reaper used in Canada West had in fact been a Hussey model brought to the Cobourg area in 1843. McCormick reapers were also introduced near Cobourg, but not until 1847. Two years later The Canadian Agriculturalist carried a notice advertising the services of a Mr. G. Munro of Toronto who would import the Hussey machine for Canadian buyers on request.<sup>22</sup>

By 1850 the Agriculturalist followed the annual exhibitions of the Royal Agricultural Society of England with an interest in new implements on display as great as that shown in the livestock reports which once dominated these accounts. The rising status of farm machinery can also be documented in the records of the Provincial Exhibition. The first exhibition in 1846 had five competitive classes for livestock and only one for implements, and that included everything from ploughs to fences. By 1855 there were two categories for implements, the domestic and foreign, which listed a total of 216 entries (144 and 72 respectively), ranging from reapers and mowers to ploughs, harrows, rakes, root and straw cutters, a corn and cob crusher, and a turnip slicer. In 1849 the Agriculturalist maintained that "the subject of agricultural mechanics, or the improvement of our labour-saving machines, is to our farmers one of vital and pressing importance and intimately connected with the welfare and prosperity of the country."<sup>23</sup>

Farm implements, improved livestock, and chemistry, became the main pillars of scientific agriculture by 1850. To sustain fertility, the Agriculturalist prescribed a programme of "mechanical" and "chemical" soil treatment. "Mechanical" preparation of the soil for seeding involved breaking the ground with plough, roller, and harrow, deeper ploughing in order to reach the fertile strata yet untapped, and field drainage to prevent surface water accumulation. The proper chemical composition of the soil was to be maintained by generous applications of manure and fertilizers such as bone dust. Higher quality manure would be obtained by feeding livestock fodder crops which, in addition to being good for the chemical condition of the soil, had been mechanically ground into large amounts of easily digestible meal. More and better fodder would facilitate greater numbers of larger livestock, more manure, and, thus, higher yields of crops. In George Buckland's view, this combination of science and practice provided a formula for "indefinite improvement" in agriculture.<sup>24</sup>

A public education campaign was launched in the 1840s and early 1850s to make the growing body of scientific and practical agricultural knowledge available to farmers. Specialized farm journals such as the Cultivator and Agriculturalist became a permanent feature of rural life in the 1840s; as noted the Provincial Agricultural Association was created in 1846 and held its first annual exhibition of crops, implements, and livestock. Local agricultural societies spread across the colony. The number of county societies increased from fourteen in 1849 to thirty-nine in 1853, when every county could boast one.<sup>25</sup> Agricultural education also caught the attention of Egerton Ryerson, who had become Chief Superintendent of Common Schools in Canada West in 1844. In lectures given

across the colony in the late 1840s, Ryerson said that the demographic and economic preeminence of agriculture entitled farmers to a public school education which ought to include instruction in the recent developments in agricultural science and mechanics.<sup>26</sup> To prepare the school system for its proposed wider responsibilities, Henry Youle Hind, the lecturer in chemistry at the Provincial Normal School, offered aspiring teachers courses in scientific agriculture. His Lectures on Agricultural Chemistry or Elements of the Science of Agriculture was published in 1850. The book was so favourably received by agricultural societies as well as teachers that a second edition appeared in 1851. In the same year, the efforts of Adam Fergusson and George Buckland, among others, to secure a place for the study of agriculture on a university curriculum were rewarded. The Senate of the University of Toronto established a Chair in Agriculture and appointed Buckland its occupant.<sup>27</sup>

The Canadian government became more directly involved in these educational efforts when the legislation establishing the Board of Agriculture of Upper Canada was passed at the request of the Agricultural Association in 1850. In February 1850, the association formed a committee composed of John Wetenhall, Adam Fergusson, E.W. Thomson, William McDougall, G.D. Wells, and George Buckland whose task it was to prepare a draft of the proposed legislation.<sup>28</sup> The new board had ten members including two ex-officio members, the Inspector General of the Province, the Professor of Agriculture, and eight others chosen by the Agricultural Association. Fergusson, Thomson, David Christie, and John Harland were among the first members of the board. The government provided an annual grant of one thousand pounds to enable the board

to carry out its responsibilities. Among its primary duties the board oversaw the activities of the county and township agricultural societies and the Agricultural Association. The board had direct control of the association since the ten board members also sat on its executive. After the board came into being, the association's major responsibility became management of the annual Provincial Exhibition.

The board also assumed control of a wide range of other matters: it allocated government grants to county and township societies, published their proceedings and financial statements as well as its own transactions, and had authority to collect agricultural statistics, import plants and animals, and publish an agricultural journal. In January 1852 The Canadian Agriculturalist became its official organ. (It published the journal until the end of 1863.) The statute governing the board also permitted it to manage experimental farms. In 1851 it arranged with the University of Toronto for the establishment of such a fifty-acre farm on the university's grounds so that it could be supervised by Professor Buckland and used to illustrate his lectures.<sup>29</sup> Not long after establishing the board, the Canadian government in 1852 created a Bureau of Agriculture which was responsible to a member of the Executive Council who would be known as the "Minister of Agriculture." The bureau was supposed to streamline the formal organization of agricultural improvement in the Canadas and open a direct line of communication between the private farm organizations and the government. The Board of Agriculture reported to the minister through its secretary, who also happened to be George Buckland.<sup>30</sup>



In the six years after his arrival in Canada in 1847, therefore, George Buckland became the key public official responsible for agricultural affairs in Canada West. He was employed as Secretary of the Board of Agriculture and Professor of Agriculture in charge of the experimental farm, and he was still Secretary of the Agricultural Association and Editor of the now renamed Canadian Agriculturalist and Transactions of the Board of Agriculture of Upper Canada. Not surprisingly, Buckland's Canadian Agriculturalist thought Canada enjoyed institutional supports for rural improvement equal to those in any other country. Astonishing progress had been made between the founding of the Provincial Agricultural Association in 1846 and the creation of the Bureau of Agriculture in 1852. As a result, an editorial in early 1852 commented that "the future is full of hope and promise" for Canadian agriculture.<sup>31</sup>

The cause of agricultural improvement had been endorsed in the 1840s by several of the leading political, business, and educational figures in Canada West. The dinner held at the first exhibition organized by the new Provincial Agricultural Association in 1846 was not only attended by officers of the association such as Adam Fergusson, John Wetenhall, and W.G. Edmundson, but also Chief Justice John Beverley Robinson, Robert Baldwin, Toronto Mayor W.H. Boulton, William Hamilton Merritt, G.P. Ridout (who was President of the Toronto Board of Trade), and Egerton Ryerson.<sup>32</sup> The following year, the Governor General, Lord Elgin, addressed the exhibition dinner. Elgin also established two prizes at the Normal School for the students who wrote the best essays on the relationship between science and agriculture. In 1850 he presented the awards at the school in person and took the opportunity to urge the students to appreciate

the importance of scientific agriculture. He even appeared at a ploughing match in 1850 near Thornhill to encourage the competitors. He toured the fields to inspect the quality of the work himself. In appreciation of such "patronage," Adam Fergusson commented that "Lord Elgin knows the farmers' value, and he will never overlook their interests."<sup>33</sup>

A further insight into the social dimensions of agricultural improvement can be obtained from a closer study of the Thornhill ploughing match. The match was organized by Whitby miller and politician Peter Perry, who believed that ploughing matches were among the best means of developing Canada West's greatest natural resource -- agriculture. The event attracted forty participants and over three thousand spectators. It provided the ordinary "yeomanry" of the colony, as Elgin called it at the dinner which followed the match, an occasion to test implements and skills, share field experiences, and receive expert advice from leading progressive men such as Elgin himself, E.W. Thomson, the President of the Provincial Agricultural Association, who toured the ploughed fields with the governor general, and Buckland, whose Canadian Agriculturalist also later assessed the quality of the ploughing. These men were joined at the dinner by other business and political leaders such as Francis Hincks, the provincial Inspector-General and, by 1851, joint Premier of Canada with A.N. Morin, and about 350 farmers, competitive ploughmen, and spectators at the day's trials. In his remarks at the dinner, Hincks made no claim to knowledge of advanced farming methods; however, he spoke of the interdependence of Canada's commercial and agricultural interests and the need to support initiatives such as Elgin's contest for the best essay on the importance of canals to provincial

agriculture.<sup>34</sup> The farmer who competed successfully, in ploughing matches or essay contests obtained, at a minimum, a certain celebrity among the principal men of the colony-- as well as a little prize money. The prize-essay contest, in particular, could also facilitate, at least for well-educated farmers, admission to the circle of the most prominent agricultural improvers (and thus closer association with the broader provincial elite).

The experience of William Hutton of Hastings County suggests that by the early 1850s the new agricultural knowledge had become a recognized ingredient in the formula for social advancement in Canada West and that the new agricultural institutions (which often sponsored the essay competitions) could stimulate and satisfy a progressive farmer's social ambitions. Hutton was born near Dublin in 1801, the sixth son of a well-to-do Presbyterian minister. His father's loans enabled him to establish himself in the 1820s as a farmer on three hundred acres of leased property in northern Ireland. The farm consumed these resources without permitting Hutton and his family to pay their rent and other living expenses. Hutton's "dire necessity and awful losses" prompted him to immigrate to Canada.<sup>35</sup>

Hutton arrived in 1834 and purchased an existing farm near Belleville (again with the help of parental resources). Two years later (with money borrowed from other relatives) he purchased an adjoining block of land which increased the size of his farm to 275 acres. Hutton had a keen interest in improvement. He employed labour-saving machinery, read Henry Youle Hind's book on agricultural chemistry, manured his fields heavily, concentrated on raising wheat and building

his herds, and even secured a few of the better breeds of cattle and sheep. In 1841 he helped found the local agricultural society. He considered himself "a large farmer" by Canadian standards, and he was gratified to learn that his farm improvements were "the talk of many" in his township.<sup>36</sup>

Hutton's farm prospered in the 1840s and he found it possible to repay some of the debts he had incurred with members of his family. His personal prospects and those of Canada West seemed promising. After the bountiful harvest of 1845, the Huttons celebrated their wedding anniversary with a party to which were invited "the cream of the country, being the best educated amongst us -- lawyers, doctors, and clergymen, their families and a few merchants."<sup>37</sup> He was also delighted that the colony's "staple commodity wheat" was becoming so obviously important in English markets that the British Parliament gave it a more favourable tariff. By 1842 he felt his family's "night of darkness" was ending: "I have been eight years in this country now and where there are so few well educated, I think I shall be able not only to hold my ground but to rise."<sup>38</sup>

Hutton's social ambitions and financial necessities caused him to seek income and influence outside farm work. Between the late 1830s and early 1850s he taught school and served as superintendent of common schools in the Victoria District, district justice of the peace, and warden; he also worked as a part-time provincial arbitrator for the Board of Public Works, a clerk in the office of Inspector-General Francis Hincks (who was also a cousin), and as the Secretary of the Board of Registration and Statistics. In performance of these duties he made the acquaintance of Egerton Ryerson, Robert Baldwin, and William Hamilton

Merritt.<sup>39</sup> Hutton's principal interest, however, remained farming; and it was on the strength of his agricultural knowledge that he was able to advance himself the most. In 1849 he decided to compete for the fifty pounds offered by Lord Elgin to the author of the best essay on the relationship between the Canadian canal system and agriculture. Hutton thought that if he won the contest, "it will raise me in the estimation of those high in power and intelligence."<sup>40</sup> Although he did not win on that occasion, two years later he read another essay at the Provincial Exhibition entitled "Agriculture and Its Advantages as a Pursuit" which earned him the gold medal. A third essay, on agriculture in Hastings County, received a prize of fifteen pounds from the Board of Agriculture for Canada West in June 1852. Both essays were published in The Canadian Agriculturalist. When the Bureau of Agriculture was established in November 1852, Hutton made it known to Francis Hincks that he aspired to be its secretary. After devising an administrative reorganization which placed his duties with the Board of Registration and Statistics under the bureau, Hutton became bureau secretary in February 1855. In praising the appointment, the Agriculturalist said that Hutton's "long practical acquaintance with both British and Canadian Agriculture most eminently qualify him for his new and important position."<sup>41</sup>

Since settling in Hastings County in 1834, Hutton had experienced the social benefits of progressive agriculture. By the 1850s he had entered the group of leading agriculturalists who were active in Canadian public affairs. As Elgin had explained, it was mainly up to them to help raise the general "character" of the less estimable members of the rural community. Hutton's early impressions of Canadian farmers in the mid-1830s were decidedly unfavourable. They were

"slovenly," unambitious, and "awkward at handling a spade, or at any common farm work." At first, he apparently did not socialize with many of his rural neighbours in Hastings County. He preferred the company of educated professional and business people. Only three farmers had been invited to the Huttons' 1845 anniversary party because the majority of farmers was "unfortunately, too illiterate as yet." Still, he detected "a very apparent desire on the part of many of them to educate the rising generation, and such times as these are, by giving them the means, will foster the inclination."<sup>42</sup>

The local agricultural society and public school system he had devoted his attention to in the 1840s reflected his hope for rural social uplift through education. And he was pleased with the results of these efforts by the end of the decade. The progress of the agricultural society gave him special pleasure. Although it had not had much impact when first established in 1841, the county society had 215 members by 1852; an additional 241 farmers belonged to its township branches. "The Agricultural mind required time to prepare it to receive knowledge," Hutton explained, "but the fruit is now every year improving in quality and abundance." The creation of the Chair of Agriculture at the University of Toronto only fostered his optimism about the future of "our rising agricultural community" since farmers could soon expect up-to-date instruction in soil chemistry.<sup>43</sup>

In the 1840s educated agriculturalists such as Hutton affirmed the great agricultural potential of Canada West and helped shape the economic development and public life of the province. In his view they were their country's benefactors;

they had begun to demonstrate farming's true social, moral, and economic advantages. This justified in Hutton's mind greater self-esteem and a higher social status for the progressive farmer. "His pursuits are not," he claimed in one of his prize-winning essays, "(as some professional and commercial men would have us believe) incompatible with the character of a gentleman or a man of education. . . . Being then the lords of a rich, bountiful soil, and having the power to wield the destinies of our country, may we not be justly proud of our profession, and be zealous to adorn it in all things by industry and skill, and advancement in knowledge, practical and scientific." Hutton thought that only the educated farmer could fulfil this rural calling in Canadian society. Farming's vocation could only be worked out by a new type of intellectual farmer. "The idea 'that any fool can farm'," he said, "is now antiquated and an unjust stigma on our noble profession, one of the first advantages of which, as a pursuit, is, that it requires enlightenment; that it demands never ceasing improvement of our mental capacities . . . ." <sup>44</sup> And, as The Canadian Agriculturalist boldly proclaimed, the application of intellect to agricultural work would make farming one of the best means of human development: "The cultivation of the earth has been too long regarded by the multitude as a mere drudgery -- as just so much physical labour, to be mechanically applied, instead of, as it really is, the most natural and useful employment both for the body and the mind. No pursuits connected with the common affairs of life are half so well calculated to develop the various powers of man -- physical, mental, and moral as those of agriculture, when rationally pursued." <sup>45</sup>

By the 1840s in Canada West agriculture had acquired a growing body of knowledge which was making it an intellectual as well as manual activity. "Men are beginning to open their eyes to their true interest," noted The British American Cultivator, "and by reflection are constrained to acknowledge that Agriculture is a science; the operations of which are not to be entrusted to manual labour alone, but the mind is also called into action." It followed that "the great desideratum required to make this a prosperous country is knowledge"; and "Our future progress and well being must in a great measure depend on the intelligence of the people."<sup>46</sup> With so much riding on the quality of rural minds, The Canadian Agriculturalist's inaugural editorial said that one of the journal's most important tasks would be that of "inducing a spirit of rational inquiry" among farmers.<sup>47</sup> If farmers were to appropriate the new intellectual dimension of agriculture, the Agriculturalist thought it had to teach them to think correctly. The new agricultural knowledge admittedly presented a number of questions: what were its perimeters and characteristics; how should it be explored; what mental equipment did human beings possess; how did the mind function; and how might intellectual skill be developed?

Finding the proper relationship between science and practice was the main problem facing the intellectual farmer. In the 1830s and 1840s chemistry had asserted its claims in the relationship by seeming to offer some clear practical knowledge. Buckland tried to outline the great improvements made by the union of practice and science in an article on the importance of chemical soil analysis which appeared in The Agriculturist and Canadian Journal in January 1848. Since chemical analysis revealed the proportion of organic and inorganic nutrients found



in the most fertile soils, fertility could always be maintained simply by spreading fertilizer known to contain the necessary elements the analysis indicated were deficient. "How much safer," Buckland concluded, "and more profitable is it for the practical farmer to be guided by the unerring principles of science in all his proceedings, than to depend merely on mere guesses or haphazard experiments!"<sup>48</sup>

Farmers who hoped to take advantage of scientific knowledge appealed for help to the farm journals. Thomas Boyle, a farmer near Amherstburg, Canada West, wrote to The Agriculturalist and Canadian Journal on behalf of his neighbours who, seeking "the light of science" to explain a mysterious series of crop failures, asked the editor whether they could learn to take their own soil analysis after studying the literature on the subject or attending a lecture given by an authority on the technique. The Journal replied that although only a chemist could do the lengthy, intricate testing required for an accurate analysis, an intelligent farmer could obtain enough chemical knowledge from reading Liebig and Johnston or by engaging George Buckland to lecture them, "to form a tolerably correct judgment of the nature of his soil." The Journal then told Boyle the instruments required to do the testing could be obtained in Albany, New York, at a cost of about four dollars. The reply concluded, "We are not aware that anything additional would be required, except perhaps a few tests, to make an unprofessional examination of a piece of soil."<sup>49</sup> The British American Cultivator thought soil analysis meant "the enlightened husbandman may calculate with a considerable certainty as to the average products he will be able to obtain from his land." Since agriculture became a science "what was formerly all darkness or mystery may now be clearly demonstrated as much so as two and two make four."

Credit for the achievement belonged to Davy, Liebig, and Johnston who, the Cultivator said, "have so completely illustrated the principles that govern an improved scientific practice, that those desirous of obtaining an acquaintance with the natural and unerring laws that govern the vegetable kingdom, may do so with a very trifling effort and expense."<sup>50</sup>

Although chemistry promised a means of sustaining fertility, it was no panacea for agricultural problems. There were too many environmental forces such as the weather, plant diseases, and insect pests which could nullify its effects.<sup>51</sup> The many constraints on the scientific farmer's inquiries permitted modest immediate ambitions. Agricultural knowledge would have to be based mainly on facts which were fairly obvious about objects and procedures which were rather commonplace. This knowledge would have to be chiefly practical. The farmer's precarious place between nature's wrath and inertia meant he would constantly have to turn his attention to some useful end. The emerging connection between science and farming had merely begun to open an immense and complex realm of knowledge about nature and agriculture. Egerton Ryerson told farmers in 1847 that chemistry, botany, animal physiology, geology, mechanics, and meteorology gave them "exhaustless subjects of inquiry, conversation and interest." The Agriculturalist cautioned that farming was "a very abstruse and complicated" subject whose deepest recesses could only be approached by the sciences. Science alone permitted access to areas of knowledge which, as Davy said, "common observation" could not uncover. There were invisible, odorless, and tasteless substances in nature which only chemistry could detect and describe.<sup>52</sup>

That said, the borders of scientific knowledge were still tightly circumscribed. Even the most studious farmer soon reached the murkier depths of the knowledge which underlay farm operations. Indeed agriculture had a unique degree of complexity due to the large role played in it by the so-called "imponderable agents": heat, light, electricity, and the mysterious life forces. These features of the natural world eluded direct observation and common sense understanding.<sup>53</sup> The most brilliant minds were at a considerable disadvantage in the contest with these unknowns. The Agriculturalist cautioned that the secrets of nature "tax the highest present attainments of the chemist and physiologist for even a partial and imperfect explanation." This was so because farmers worked with "the wonderful and mysterious power of life . . . . and, after all, the nature and extent of the vital principle will most probably continue beyond the reach of mortal ken." These matters resided among "ultimate truths which human reason cannot reach."<sup>54</sup> James Johnston, the British agricultural chemist, felt these limitations so keenly that it seemed man's scant understanding merely proved "how very limited his knowledge is, and how feeble his capacities after all." The still uncontrollable forces in nature could make short work of the best efforts of the most intelligent farmer:

A mysterious fungus attacks the potato, and for years spreads famine and misery, and discontent and depression, among millions of industrious farmers.

A minute fly, season after season, hovers over our wheat fields, and from entire provinces and states almost banishes the cultivation of our most important grain.

A long continued drought, such as half a century past has scarcely seen, dries up our meadows and pastures, and drives the farmer to his

wits end, to obtain winter sustenances for his necessary stock.

Such things as these ought to prevent us from boasting of our knowledge, and to enforce upon us that piety and humbleness of spirit, which rural occupations themselves so naturally foster -- while at the same time they should not restrain us from any effort or enquiry by which the evils themselves may be mitigated or removed.<sup>55</sup>

In a similar vein, even though Adam Fergusson anticipated spectacular results from improved agriculture, crop diseases such as had severely damaged potatoes in Canada West between 1844 and 1846 could only be faced with Christian resignation: "It is assuredly our bounden duty to receive the visitation, as involving consequences, which defy the utmost powers of man to fathom; and to feel, in the most impressive manner, how weak, and how inefficient are all our boasted powers and resources, when it pleases an Omnipotent Being to chasten or admonish."<sup>56</sup>

As Fergusson's comments reveal, many agricultural improvers believed that there was a biblical explanation of man's trifling success in pursuit of knowledge which would allow greater control of nature. Although William Evans thought agriculture could be conducted as a science, he was acutely conscious of the environmental constraints which still weighed heavily against farm productivity and which had their origin in the Fall of man described in Genesis. Despite its beauty and underlying order, nature was fundamentally flawed. There was a direct connection between the "primeval curse" and the often unsatisfactory quality of much farm produce. "It would seem to be a part of the 'primeval curse'," noted The Agriculturalist and Canadian Journal, "that the products of the

animal and vegetable kingdom essential to man's existence, should demand his constant care, and the exercise of his highest skill to prevent them from 'running out'.<sup>57</sup> This problem mystified so many readers of The Canadian Agriculturalist that it published a short analysis of the process:

1. That all soil however rich becomes gradually less and less fertile, so long as it is uncultivated, until it becomes absolute morass, moor or marsh, or impenetrable forest.
2. That soil covered with forest trees retains its luxuriance, for the greatest length of time, and when cleared of the forest, proves the most durable of any for the purposes of cultivation.
3. That on land uncultivated, Nature maintains to a certain extent a regular rotation of crops, each plant in succession gradually diminishing in size, until the barren moor is all that remains.
4. That pasture land when neglected, (though of the richest quality), gradually decreases in value, until it produces only the most worthless and valueless grasses.<sup>58</sup>

Science taught that agriculture removed plant life from the state of nature (wherein its condition steadily declined) and submitted it to "a forced and unnatural development."<sup>59</sup> This meant that agriculture permitted farmers to take from the earth more and better produce than the soil would have yielded in the state of nature. William Hutton told them that through proper crop rotations, manuring, draining, and ploughing, they could exert "the power of cultivation" on their farms and raise crops and livestock "far superior to their natural originals." "Wheat, barley, and oats," said Hutton, "in a wild state are thin and meagre, and of little or no value; by cultivation they become large and plump..."<sup>60</sup>

Unimproved and unscientific farm methods simply accelerated the natural processes ending in exhaustion of the soil's productive capacity because the farmer compelled the soil to transfer its nutrients to the plant without restoring them through regular manuring or crop rotations.

Since man's eviction from Eden, agriculture, said a contributor to The British American Cultivator, had passed from a "punishment" to "the mother and nurse of the human race." The article observed no niceties about how farming had achieved such progress: "Violent means were necessary to compel it to pay man the tribute of which his ingratitude had rendered him unworthy; and to force it by labour to supply him every year with the nourishment which before was given him freely, and without trouble." Farmers were engaged in a sometimes desperate struggle with a natural environment which repeatedly exposed their vulnerability and left them, said George Buckland, between "hope and fear."<sup>61</sup>

Agricultural improvers between the 1830s and 1860s believed intelligent farmers could begin to recover a course which had commenced in Eden, been lost through the Fall, and made available again in the Christian scheme of redemption. In so doing, Christianity would not only lend ultimate purpose to their intellectual efforts but provide the initial point of entry to the vast and mysterious realm of agricultural knowledge. Like many other Anglo-Protestant Canadians of their day, agricultural improvers thought intellectual attainments had moral prerequisites which Christianity sustained best.

The link between morals and knowledge, many writers believed, was evident

at the outset of human history. In "innocence" Adam tended the perfect fruit of nature without pain or exertion so as "to make him contemplate, in the productions of the earth, the power, wisdom, and goodness of the Creator."<sup>62</sup> Adam's moral perfection was the source of his material well-being and intellectual fulfilment. His disobedience divested him of the moral and intellectual power to regain intimacy with God; indeed he barely had enough physical strength to sustain himself on the gleanings hard labour tore from the now recalcitrant earth. Methodist clergyman Nathanael Burwash surveyed the extent of man's loss at a public meeting in Canada West in the late 1850s. In Eden, he said, "Man's heart was pure and his intellect unclouded"; the Fall "weakened his powers and left him in darkness."<sup>63</sup>

Divine grace, however, had laid out a plan of salvation through Christ in which expansion of knowledge of the material world played a preeminent role. The condition of the mind and control of nature would be measures of man's spiritual progress. The greatest progress could be made where the natural environment was the most intractable. In James Johnston's view, North American and northern European farmers would find that their added intellectual challenges brought them closer to God's purpose for man than those in more hospitable circumstances:

We sometimes think ourselves unfortunate to have been born, or to be doomed to live where clouded suns impart a lessened light and heat; or where the frosts of winter bind up for many months the hardened earth. Yet in such climes, man more really lives, and exercises a truer dominion over inanimate things, than where tropical skies appear to

prepare him for an unceasing enjoyment. Where mind and mental energy are dormant, he only vegetates or exercises his brute passions. Where by perpetual struggles he subdues the adverse elements, bends circumstances to his will, forces a copious abundance from an unwilling soil and in spite of inclement seasons—there he most truly lives, and amidst his hardships enjoys life most; there refreshing sleep visits him with her balmiest breath, and in the power of his mind over matter, which his success displays, he brings out more clearly the claim of man to a likeness with HIM who is all mind, and to whose slightest intimation all matter bends.<sup>64</sup>

Knowledge promised to restore the earth to its original Edenic splendour and man to his former relationship with God. This breathtaking prospect could not, however, be carried to fruition by human intellectual acumen alone. All knowledge was, in essence, revealed to man by God. Johnston thought that man's modest successes in bending nature in ways more favourable to the farmer were to be considered "not as sources of pride, but as stimulants to exertion — for in so greatly rewarding the past exercise of our intellectual powers, the Deity obviously intends still further to excite us to study and extract good from the living and dead things of nature, over which He has given us a general dominion."<sup>65</sup>

This notion of the divine origin of knowledge was commonplace in mid-nineteenth-century British North America. President J.H. Nicholls of Bishop's College told the convocation of 1860 that in studying the natural world man "discovers what God has made, what God gives him to understand." It was also widely believed that knowledge was only a gift to those whose inquisitiveness was prompted by the correct moral and spiritual disposition. James George, Vice-



Principal of Queen's College, advised the student body in 1855 "that the high priests whom God admits within the veil of nature to see its hidden laws, are those who approach the Holy of Holies with clean hands and a pure heart."<sup>66</sup> Thus Egerton Ryerson insisted that agricultural education in the common schools, like all forms of education, must be infused with Christianity. Quoting an American authority to make his point, Ryerson told farmers that "without moral principle at bottom, to guide and control its energies, education is a sharp sword in the hands of a practiced and reckless fencer."<sup>67</sup>

As a general rule for the pursuit of knowledge, George Buckland thought that "intelligence, guided by Christian principles, is the sure basis of a nation's progress and happiness."<sup>68</sup> William Evans unravelled this idea much further. "Good morals and habits," he wrote, "are indispensably necessary to our usefulness, our respectability, and our happiness; and the education that will not teach them, will be of little value to the individual, or to the community. Indeed, it will be on these, that the success of all other instruction will chiefly depend. . . ." Once moral opacity had been removed through the proper education, Evans thought farmers would have a true estimation of their condition, needs, and possibilities: "Unworthy and miserable jealousy, so common to unenlightened and ill-cultivated minds, would no longer exist among them -- they would, like other classes, unite and act in concert in all matters that would interest them as a body -- the veil would be taken away from their minds, and they would be able to see things as they are, and understand how they ought to be, to promote their own, and the public welfare. It is then they might assume that high station in the community, which they are naturally entitled to, and have an influence that would

preponderate over all other classes united."<sup>69</sup>

The idea that human goodness and piety were the precondition of knowledge of nature and the community was accepted as a principle of existence in early Victorian Canada West. As Professor George of Queen's said in 1853, "The world cannot learn too soon, what it should have learnt from the first, that if men disown the moral government of GOD, the laws of the physical universe will not obey them for good, but war against them for evil, until they are destroyed by the instruments they have unpiously [*sic*] wrought with, and the benefits which they have ungratefully abused." The universe was subject to what George Buckland called "that truly wonderful, beneficent, and unalterable system of laws -- natural and moral -- originating in divine wisdom, and sustained and directed by infinite power!" And Buckland was sure that a moral endeavour such as agricultural improvement would bring desirable consequences. It was, he said, "a great principle of the natural and moral government of the Deity, that causes and effects are so surely connected, that no judicious effort in a good work, can be ultimately abortive."<sup>70</sup>

If knowledge of nature and society was, in effect, a divine revelation to the morally fit, intended to advance a plan of human redemption or divine government, then such knowledge had to be authoritative and adequate for those purposes. God had to have given human beings intellectual abilities and moral sensibilities capable of receiving salvation and enabling them to work it out in pursuits such as agriculture. In the mid-nineteenth century, philosophical reinforcement for this Christian explanation of how knowledge was obtained and

employed came from educators in British North American colleges and universities who had been influenced by the Scottish "Common Sense" school. The Scottish philosophy permitted the conclusion that study of the mind's internal operations confirmed, as historian George Daniels says, "that through the grace of God our senses were in accord with this world."<sup>71</sup>

In the eighteenth and early nineteenth centuries, Scottish thinkers Thomas Reid, Dugald Stewart, and William Hamilton set out to insulate moral and religious conviction from radical sceptics such as David Hume. They held that the mind was comprised of various "faculties" such as the "moral" and "intellectual." These distinct compartments were so structured as to be trustworthy means of perception in their particular domains. They were able, through the "common sense" of every normal person, to perceive the truth in faith and morals as well as mundane matters. Even an unexceptional mind could acquire the essential data for existence as long as the various faculties did not intrude on each others' spheres of cognition. The intellectual faculty operated on objects which could be sensed in the material realm. It could not dictate in the domain of the spiritual or moral, where intuition alone brought certainty. Under the terms of this mental concordat, reason could be allowed to analyze the external world without the knowledge thereby gained threatening moral and religious belief. The philosophy of common sense appealed to British North American educators for that very reason. It offered a haven for the Christian inheritance just as the demand for knowledge of society, science, and technology was pressing the potentially unruly intellect into increased activity.<sup>72</sup>

Leaders of agricultural opinion in Canada were by no means accomplished philosophers like those in the academies. William Evans, however, did urge farmers to take up formal study of moral philosophy if they were so inclined; and he recommended that they read works by Dugald Stewart and Thomas Reid.<sup>73</sup> More importantly, Evans's assumptions about the nature of the mind and how knowledge was acquired and made most effective paralleled those of the Scottish philosophers. He spoke of the "faculties" of the mind; he recognized the primacy of conscience in the pursuit of understanding and that the authority of conscience rested in man's ethical intuition. "We have an infallible standard," he wrote, "in our own feelings and conduct in life, by which we can determine whether we have rightly learned our moral duties." Evans could therefore conclude "that man was formed in the most perfect manner possible for his situation on this globe." Human beings were, of course, far from perfect; awareness of their inherent deficiencies was the beginning of wisdom. Yet they could obtain a condition of adequacy. "We have the highest and most respectable authority," Evans explained, "for supposing that there are few of the human race who are not endowed with faculties, that, by due improvement, would enable them to reason justly and act correctly, in most matters that concern their well-being and happiness; and that the greatest part of what goes wrong, in public or private life, arises from the want of the right cultivation of the human mind."<sup>74</sup> By developing the mind correctly, said Evans, humanity could eventually gain the status God had originally planned for it:

Man never can discover what he is capable of executing until he has improved to the uttermost the faculties bestowed upon him by the

Creator. When he has done this, he may, by exercising them prudently and industriously, overcome almost every difficulty in nature, over which it could be proper or useful that he should have the control. This is a privilege which, I believe, the ALMIGHTY has left it in the power of man to enjoy, and which places him high indeed in the rank of creation. . . .

This is truly a flattering description, and he who cultivates aright his natural faculties, and exercises them properly in the situation of life in which he may be placed, will not be altogether unworthy of it, and of the rank in creation which the CREATOR intended him to occupy.<sup>75</sup>

Proponents of the Christian and Common Sense view of knowledge found further authority for and refinement of their method of inquiry in the ideas of English philosopher and statesman Francis Bacon (1561-1626). During the mid-nineteenth century Bacon supplied the conventional wisdom about making accurate observations of nature to those in scientific and educational circles in Britain, the United States, and British North America.<sup>76</sup> If Christianity taught men the transcendent meaning of their studies and, with the Scottish philosophy, assured them of the certainty and sufficiency of their findings, Bacon taught Christians how to inquire. He insisted "on keeping the eye steadily fixed upon the facts of nature and so receiving their images simply as they are. For God forbid that we should give out a dream of our own imagination for a pattern of the world; rather may it be graciously granted to us to write an apocalypse or true vision of the footsteps of the Creator imprinted on his creatures."<sup>77</sup> Bacon arrived at the facts through "induction" — a mental procedure which involved direct observation of the objects under investigation in order to identify and

classify them. These observations were to be extended until compilation of a sufficient number of facts enforced generalizations about the properties of the objects. The "imagination" -- particularly in the form of conjecture or hypothesis -- was to be placed under tight restraint by the inductive method.<sup>78</sup>

In the editor's introduction to a paper on the relationship between science and farming (which had been originally published in Scotland by Dr. Anderson, the chemist of the Highland and Agricultural Society), The Canadian Agriculturalist praised the author's fidelity to "the cautious spirit of the inductive philosophy." Anderson argued that "the slow and careful determination of scientific facts is likely to be the most important assistant in the improvement of practical agriculture." In this process, he warned against "expectations greater than facts justify."<sup>79</sup> And the astronomer Sir John Herschel, an eminent British nineteenth-century scientific authority who was quoted approvingly by the Agriculturalist, urged that "we must take the instances [or facts] as nature presents them" in order to make "good inductions." Far too often nature had been misrepresented because the mind had been overcome by the power of only a few striking facts. "So strong is this propensity of the human mind," Herschel said, "that there is hardly a more common thing than to find persons ready to assign a cause for everything they see, and in so doing, to join things the most incongruous by analogies the most fanciful."<sup>80</sup> The practical mind in agriculture required great powers of observation and retention rather than brilliance or creativity. In an article on livestock improvement, the Agriculturalist stated, "Our object is not so much originality as practical utility." Thus the journal would not discuss in any detail the care of livestock in relation to the complex question of the origin of

species because it was thought unnecessary for the farmer's practical purposes and led to "a wide field of speculation."<sup>81</sup> By contrast with such aimless theorizing, William Evans told readers of The British American Cultivator "to observe the utmost caution in reporting experiments and the results obtained from them." There could be no other way of assessing the feasibility of the methods which had been tested. "A judicious system of practical and profitable husbandry is what we require here," he continued, "and it will not answer any useful purpose to be told of expensive experiments and their results, that we never can hope to realize by the very best system of ordinary farming."<sup>82</sup>

The borders of the farmer's study of his work were formed by the general principles of proper farming: the need for crop rotations, draining, and manuring, to cite a few major ones. These principles had been firmly established by long field experience and, more recently, sanctioned by eminent scientific authorities. They therefore required application, not searching analysis. The farmer's primary intellectual task was thus the more unassuming one of refining their implementation in "ceaseless modifications" designed to meet the wide variations in actual farm conditions. For example, the farmer might undertake extensive tests of the merits of planting wheat by drilling or broadcasting. Every farmer was asked to contribute "his mite" to the resolution of these problems. These experiments were to be conducted on a small scale and, if need be, for many years. The manner of thought entailed in making repeated examinations of a narrow range of objects over a long period of time was less extended reflection than "habits of patient investigation and correct observation."<sup>83</sup> Francis Bacon and the Common Sense thinkers would have felt quite at home with such advice.

With perseverance in systematic observations, especially after the inevitable disappointments in the struggle to control nature, farmers could hope to assist the gradual emergence of an enduring body of agricultural knowledge. This moderate pace for the development of scientific farming had to be accepted as one of the realities of life. It was stated as a general principle in the Agriculturalist that "the germs of all true greatness, in both the natural and moral world, are imperceptibly sown." For evidence of this truth, the reader was invited to recall that a tiny acorn eventually becomes a mighty oak and the remains of countless small shell-fish ultimately create a massive coral reef.<sup>84</sup>

It bode well for rural social prospects that moral conditions determined the pace of intellectual progress. As William Hutton claimed, "above all others, the Farmer's life is the moral life." He thought that since agriculture sustained the human race farmers were able to be the custodians of the most important technical knowledge (in itself a moral qualification for social preferment). Agricultural improvers believed that farmers lived in a natural setting which, despite its flaws, was nearer than any other to the garden God had planned as man's original habitat; their immediate relationship with nature instilled farmers with a greater sense of dependence on divine wisdom and assistance than men in other occupations; indeed farming had been the principal means by which a gracious God enabled mankind to survive the centuries of chaos, oppression, and backwardness unleashed by the primeval curse; farmers had a comparatively fortunate status within a "cursed" humanity; the intelligent farmer's nurture of the soil more closely approximated God's own sustaining role in the universe than did any other vocation; and agriculture was the sphere of activity wherein man



could make the greatest progress towards regaining his Edenic birthright. Agriculture had a distinct mission in the divine programme of redemption. And Canada West was well-suited to play a major part in this endeavour because, as Egerton Ryerson told rural audiences in 1847, "Divine Providence has especially marked out Upper Canada for Agriculture, and has destined the mass of its inhabitants to be 'tillers of the ground'."<sup>85</sup>

With these moral advantages, farmers, if apprised of their true possibilities, could move rapidly to their rightful status in society. For Hutton and Ryerson, farmers who received a common school education with an agricultural component and who thereafter stayed abreast of the latest developments in agricultural knowledge would be able to share positions of leadership in Canada West with members of other professions.<sup>86</sup> Scientific agriculturalists could expect to lead the province into a new era in which their intellectual ability provided the key to agricultural progress and agricultural progress became the basis of Canadian development.

The very nature of agricultural knowledge magnified the importance of the moral initiative required to appropriate it. The available scientific and practical agricultural knowledge in the 1830s and 1840s was said to be quite straightforward, easily learned, and readily applied. In an article entreating farmers to prepare their land and seed properly for wheat-growing, The Canadian Agriculturalist outlined the essential simplicity of the moral and intellectual regime under which they worked: "It being true in the natural, as in the moral world, that men reap what and as they sow; we will proceed just to remind our

readers of a few plain principles in regard to this very interesting and important portion of the agricultural year. . . . The plain truth is, that the gross neglect of the principles of good husbandry, or the laws of nature, which in this instance are the same thing, is a sin which is certain to bring its own punishment the first year." The journal added that it merely wanted "to remind farmers of what most of them already well know, however much they may neglect to practise it. Like moral conduct, this is an affair as much or more, belonging to the will, as the understanding." This was offered not to deny that there was much yet to learn about improved farming but to emphasize that the knowledge which "is certain and within our present reach . . . will yield in the long run, an abundant return to the skilful and industrious cultivator. Under a compliance with the above simple conditions, we should very seldom hear of a miserable ten or dozen bushels of wheat per acre."<sup>87</sup>

Given this relationship between morals and the application of available knowledge, the Agriculturalist thought it must help reduce "those influences which are unfavorable to self-improvement and check the tendency to indifference and low habits." The editor would therefore employ "the appropriate reverential expression" when discussing nature's "sequences" so as "to rouse the minds of our country youth to a perception of the interesting sources of knowledge by which they are constantly surrounded."<sup>88</sup>

Scientific farmers could aspire to a better social standing because they were, with some exhortation, within moral range of it and because the moral inquirer had unimpeded intellectual access to the new agricultural knowledge.

Human beings, after all, were fashioned by God to participate in their redemption. (The mind's indigenous common sense, which was sufficient for this divine purpose, had only to be awakened by a moral quickening and then strengthened by the exercise of Baconian logic. Although the scientist and farmer were allies in the attempt to pierce the vast expanses of agricultural knowledge, the farmer was the senior partner in the relationship. The farmer had to leave the purely scientific formulation of such knowledge to the scientist; however, The Canadian Agriculturalist conceded that farmers had been able to farm just as well and often better without science. It also pointed out that direct observation of nature and farm practice without the benefit of scientific knowledge had long been the principal source of agricultural improvement. Farming could, therefore, continue to progress without necessarily involving science. A man could only learn to farm by working on a farm; science on its own could never teach him to farm properly. "Practical men" could assemble from observable facts the universal principles of sound agriculture. Application of these rules was the central intellectual task for farmers:

It is true that the principles of agriculture are the same throughout the world, but they require an endless series of modifications in practice to suit the constantly recurring variations of climate and soils, to say nothing of the exchangeable value of produce; and this is a species of knowledge which experience only can supply. Let every young farmer, then, who is about to try his skill and strength in a new field, adopt in the first place the general practice of the district, and deviate from it only as increasing knowledge and experience dictate. In all countries this is beginning at the right end. It has the advantage of being a safe road, and in the result will prove the most profitable.<sup>89</sup>

Science could instruct and suggest in this process. Scientific information could help farmers to adjust their practices to manipulate the elements more effectively. "Science with practice," said the Agriculturalist, "cannot fail to advance continually the agricultural art"; however, "practice must be the test of science."<sup>90</sup>

An improving farmer had the ability to understand the scientist's work, judge its practicality, and, indeed, unlike the scientist who could never teach anyone to farm, the farmer could contribute to the scientist's own field. The Agriculturalist told its readers that farmers could provide factual information about nature which had considerable scientific value. The journal rejected the view "that even the most elementary knowledge of the sciences bearing on agriculture is an acquisition beyond the reach of our farmers generally. This may have been the case in the past but already an altered and improved opinion in relation to this subject is beginning to be heard in most of the countries of the civilized world. . . . The acquisition of useful knowledge lies open more or less to all, and far more equally than is commonly imagined."<sup>91</sup> To support this position the Agriculturalist again drew on the authority of celebrated astronomer John Herschel. He contended that sciences such as meteorology could be assisted by "any person who will attend to plain rules." "There is scarcely any well-informed person," he explained, "who, if he has but the will has not the power to add something essential to the general stock of knowledge, if he will only observe regularly and methodically some particular class of facts which may most invite his attention or which his situation may best enable him to study with effect."<sup>92</sup>

These assertions of the primacy of farm practice, which were made in 1849, belie emerging problems with practical applications of science in agriculture. The expressions of confidence in soil analysis which were published earlier in the 1840s were replaced in the following decade by doubts about its utility. By the mid-1860s, science had been pushed to the margins of practical agriculture as mere theory.

Interest in scientific farming in 1850 and 1851 was so great, however, that The Canadian Agriculturalist actually found it necessary to restrain enthusiastic inquirers into the results of soil analysis. In a review of John Pitkin Norton's Elements of Scientific Agriculture, the journal thought it necessary to condemn the notion (which the farm journals had once encouraged) that farmers should expect to become "expert analytical chemists" capable of doing reliable analyses on their own.<sup>93</sup> Only when a recognized expert conducted the test would the Agriculturalist endorse the procedure and only after insisting on the sophisticated nature of the work. During the autumn of 1849 the chemist for the Geological Survey of Canada, Thomas Hunt, examined soils in the London District, but by April 1851, said a resident of the area, Roger Smith, in a letter to the Agriculturalist, "Nothing has appeared to satisfy the curiosity excited." The journal responded with excerpts from the survey's published report of Hunt's findings and gently chided Smith for impatience with the time required to do complex analytical work. "Several operations," the reply maintained, "are of the most delicate nature, requiring the best modern apparatus, with the minutest attention and most advanced knowledge of the manipulation." Analyses that have been done improperly "are next to useless for any practical purpose" and some

"positively mislead." Fortunately for these readers, the journal said, Hunt's reputation for careful work permitted farmers to "place the utmost confidence in the accuracy of his results."<sup>94</sup>

All the same, the Agriculturalist's concern about public misunderstanding can be seen as a reaction to disappointment with the still modest contributions of science to agricultural practice. A few months before receiving Smith's letter the Agriculturalist commented:

There can be no doubt that chemistry is silently influencing and improving the practice of the enquiring agriculturalist; but the sanguine expectations of amateur farmers, political economists and some scientific men, a few years since have, as yet, fallen far short of realization. - Although it may be difficult to trace any great agricultural improvement directly to the suggestions or teachings of science, strictly so called; yet it admits not of denial that both the theory and practice of agriculture have of late years been greatly improved; and that the researches of the chemist have proved highly suggestive and beneficial to the farmer, particularly in reference to the composition and application of manures.<sup>95</sup>

The Agriculturalist must have felt it necessary to acknowledge the disillusion with soil analysis when in 1853 it printed an article entitled "The Quackery of Agricultural Science," which had originally appeared in the leading farm journal in New York State, the Country Gentleman. The article heaped scorn on "the so-called scientific theories of the day" on the matter of soil analysis. "I would not give one practical experiment," the author wrote, "for all the 'scientific' theories of Liebig and other chemists put together, for practical

farmers' use." The Agriculturalist did not reply to these charges immediately; the editor promised a rejoinder which never did appear.<sup>96</sup>

The critic of soil analysis in the Country Gentleman argued furthermore that the amount and quality of agricultural produce seemed unrelated to the application of scientific knowledge. The history of wheat farming in Canada West in the 1850s bore this out. The Secretary of the Agricultural Association, George Buckland, travelled extensively in Canada West. His travels convinced him that the main problem facing Canadian farming was a steady decline in soil fertility caused by general indifference to even the most simple and obvious means of sustaining soil vitality. In 1850 the Agriculturalist reported on the complaints of thousands of farmers about "a constantly diminishing scale of produce." Two years later Buckland claimed that wheat crops grown without manuring or rotations meant "thousands of acres, formerly highly productive, have become almost sterile." The Canadian press, however, reported bountiful wheat crops in 1849 and 1850; and the Agriculturalist, for all its warnings, had to concede that the 1850 wheat harvest was "unusually great." Soaring wheat prices between 1853 and 1856, resulting from the failure of European crops and dislocation caused by the Crimean War, stimulated expansion of the wheat economy. A bushel of wheat which sold in Toronto in 1851 for 60 cents could be sold for as much as \$1.60 in 1854 and \$2.40 in 1856. Wheat exports from Canada West nearly doubled between 1850 and 1856. Wheat production almost doubled as well between 1851 and 1861. Poor wheat crops and low wheat prices, however, registered the check on agricultural prosperity felt in 1857 and 1858. Prices fell by almost 40 per cent at Toronto between June and October 1857. Net exports of wheat and flour from

Canada West declined from about twelve million bushels in 1856 to about five million in 1858. Contraction of European markets at the end of the Crimean War and pervasive damage done to wheat crops by the "midge" and rust have been blamed for the harvest failures of 1857 and 1858 by contemporary observers and historians.<sup>97</sup>

The agricultural reformers thought the old exhausting methods of farming had to be responsible for the poor harvests of 1857 and 1858, but they were unable to show just how science could have prevented the crisis. Even if it was assumed that agricultural chemistry had something to contribute to the soil exhaustion problem, soil analysis had little to offer wheat farmers facing attacks of the "midge" on already ripening crops. Other "sciences" had no remedies to prescribe either. The Canadian Agriculturalist found available entomological knowledge woefully deficient. The midge's appearance and habits could be described reasonably well, but it could not be assumed that most farmers could even identify it, much less do anything about its ravages. Some recommended cures, such as the suggestion that skunk odour somehow be applied to infected crops, were ridiculously impractical. The only sure remedy seemed to be abandonment of wheat-growing for two or three years.<sup>98</sup>

The Agriculturalist turned to the recently established agricultural institutions for less drastic solutions. But the Minister of Agriculture, P.M. Vankoughnet, also seemed confused by the insect problem since he apparently even failed to use the correct name to identify the midge. He and both the Bureau and Board of Agriculture at first appeared in the Agriculturalist to be



impotent, then inexplicably slow to provide farmers with practical suggestions for controlling the pest. An essay contest sponsored by the minister to find out more about the problem did eventually result in publication in late 1857 of Henry Youle Hind's Essays on Insects and Diseases Injurious to the Wheat Crops but the infestation was too far advanced to be arrested. In exasperation the Agriculturalist as much as called for the minister's resignation by insisting he was unfit for office. The dispiriting response to the crisis of 1857 and 1858 by the agricultural agencies created earlier in the decade prompted the Agriculturalist to comment: "If they can render no assistance in a case like this, then indeed the hopes excited by the establishment of these departments are doomed to a sad disappointment."<sup>99</sup>

The crisis of 1857-58 only dramatized the ineffectiveness of these institutions; their weaknesses were becoming known before then. It was clear by 1857 that Professor Buckland's course at the University of Toronto had failed to attract the farmers' sons he had hoped would crowd his classroom. In 1855 David Christie described the classes as "almost tenantless." No more than six or seven students took the course in any one year during the 1850s. The university experimental farm he supervised proved to be a financial embarrassment. The cost of maintaining the farm so exceeded income from the sale of its produce between 1856 and 1858 that the Board of Agriculture sold the crops and equipment in 1860 and rented the land to a farmer. The property was eventually sold back to the university in 1871, but not for the purpose of experimental agriculture. Long before then, Professor Buckland's Chair of Agriculture was moribund. Although Buckland's name and programme remained in the university

calendar until his death in 1885 the Vice-Chancellor of the University, John Langton, strongly implied as early as 1860 that disappointment with the Professorship of Agriculture meant that agriculture had no place on the curriculum.<sup>100</sup>

By the end of the 1850s, agricultural reformers accepted the view that scientific farming based on soil analysis was quite beyond the grasp of ordinary farmers, but for some, at least, that was not the same as saying chemistry or science in general was impractical. J.E. Farewell, one of Professor Buckland's best students at the University of Toronto, pursued this line of reasoning in an essay published by the Board of Agriculture in 1860. Farewell insisted on the practical or economic value of science in agriculture because it alone "draws the veil" concealing a detailed understanding of the natural world and therein lay the solution to the farmer's problems. Farewell wanted to emphasize that the sciences enveloped the farmer's world. They were inescapable. One by one he dealt with their supposed contributions, and his list was long indeed: geology, chemistry, botany, "vegetable nosology" (the study of plant diseases), entomology, zoology, "chemical physiology" (the study of the relationship between manures of particular animals and soil fertility), veterinary science, meteorology, hydraulics, and "mechanics." "In short," he concluded, "from the physical condition of the soil, to its chemical contribution to the plant, from this connecting link, to the animal kingdom, in the growth and maturing of these forms of organized life, we observe the connection of science, that she claims to be able to explain the phenomena, to assist in remedying the accidents, and to admit of a general application, as connected with the art of culture." Farewell argued that in

industry, mining, and engineering the pervasive role of science had already been recognized. Could science be any less significant in agriculture?<sup>101</sup>

There was more promise than substance in Farewell's appeal. The contributions of science which he identified were very general in nature and based on the assumption that since a particular science laid claim to an area of knowledge, it automatically possessed information of some urgency in farming. Those who were still sceptical of the direct value of science in agriculture would not have been won over by Farewell's published university examination paper in agriculture. Although he was awarded the highest mark in the class for this effort, there was little in his replies which would astound farmers with much less formal education. One example should suffice:

Question 6. - Give a brief description of the general structure and functions of plants and animals, and their relation to soil.

Answer. - Plants consist of various kinds of matter held together by the chemical and vital forces, and arranged into what are termed cellular and vascular tissue. The principal parts are the root, stem and leaves. The root fixes the plant in the soil, and supplies it with inorganic food from the surrounding medium. The leaves expand, and catch and absorb, by means of their numerous and minute pores, organic food, consisting of gaseous matter floating in the atmosphere. Every part of a plant is endowed with tubes, vessels, and cells, for the circulation and elaboration of the sap, which by a power and process, as yet but imperfectly understood, converts these fluids into the different parts of its own solid structure.

Animals are very differently constituted, having the power of locomotion, they can go in search of their food, if need be, and they digest it in their stomachs. Their structure and functions are exceedingly interesting; the blood, like sap to the plant, derived from food, freely circulates through the system and repairs its waste and increases its bulk. Vegetables constitute the connecting medium between the mineral and animal kingdoms. Animals cannot obtain nourishment directly from the earth. The plant lives upon the mineral, converts dead matter into living organisms, and the animal subsists directly on the vegetable, a simple yet truly wonderful arrangement.<sup>102</sup>

The position Farewell represented did not go unchallenged within the circle of agricultural improvers. A very different conception of scientific agriculture can be found in a lecture given by James Croil to the Dúndas County Agricultural Society which was published in 1859. Croil began by asserting that "practical" and "scientific" farming were not in conflict:

For what is science? It means knowledge; and this is the very idea I wish now to convey to you — the desirableness of having a thorough knowledge of your profession, and if there be any difference of opinion betwixt me and any other gentleman here present, it must be with regard, not to amount, but the kind of knowledge most desirable for a farmer to possess. Or, in other words, as to what are the essential qualifications of a good practical farmer.<sup>103</sup>

Croil argued that a "good practical farmer" did not need a knowledge of chemistry or botany to farm successfully. He allowed that the sciences had

benefited agriculture (although in unspecified ways) and they were undoubtedly interesting, but familiarity with them, as desirable to any intelligent person as an appreciation of sculpture and music, or the ability to dance, was not required. Indeed, the latter was arguably of more immediate importance to the farmer than science. "You will sooner convince me," he said, "that it is essential for a farmer to learn the art of dancing . . . than you will persuade me, that to be a first-rate farmer, it is essential that he should be an adept in analytical chemistry."<sup>104</sup>

What were the farmer's qualifications then? Croil listed a common school education, "good common sense," "physical ability," and an "apprenticeship" in improved farming. Croil's view of improved agriculture shared all the features agricultural reformers had been extolling since the 1830s; better balance between livestock and grain, crop rotation, thorough tillage, manuring, and underdrainage. But farming conducted in this fashion Croil described as a "system" as much as a "science." It had a "rationale" based on "settled and fixed principle" derived primarily from successful experience. The need for crop rotation was a self-evident truth, "commending itself at once to the reason of every reflecting mind." Farmers were not dependent on the indecipherable results of soil analysis to prove the advantages of operations such as deeper ploughing. "The deeper we plough," Croil said, "we increase the area in which the roots of plants are to spread themselves out in quest of the food which common sense, unaided by science, tells us, is by them communicated to the plant." Croil backed these assertions by invoking the divine guarantor of the prevailing Christian, Baconian, and "Common Sense" view of the origins of knowledge:

Without a knowledge of the science of meteorology, the prudence and foresight of the practical farmer enable him to predict and prepare for the coming storm. And instead of racking his brains with 'idle speculations in regard to comets that are to disconcert the seasons, or to annihilate the earth by their touch, he reposes confidence in Him who hath said: 'While the earth remaineth, seed-time, and harvest, and cold, and heat, and summer, and winter, and day, and night shall not cease.' Instead of trying to master the theory of storms and the currents of the winds, he pursues the even tenor of his way, remembering who hath said: 'He that observeth the wind shall not sow, and he that regardeth the clouds shall not reap.'<sup>105</sup>

Although Croil concluded that practical experience in the field rather than science was the authentic basis of agricultural improvement, he knew the limits of the available ~~practical~~ knowledge: "Simple though at first it may appear, there is a vast deal more comprehended in what is defined as practical agriculture than we would at first suppose . . . and so far from regarding the few remarks I have made as tending to much practical utility, I feel as if we were now just standing on the threshold of enquiry; and it cannot be better explored, than by individual farmers coming forward, and giving to their brother farmers the results of their individual observations, so that the dear bought experience of one may serve as a land mark to all."<sup>106</sup>

By the early 1860s it was impossible to identify any significant breakthroughs in either science or practice in Canadian agriculture. (The unpredictability of the wheat staple in the 1850s had dramatized that.) It was also far from easy to locate the points where scientific research and practical

experience might eventually meet. The Canadian Agriculturalist could only grope for that elusive ground. "The fact is indisputable," an editorial noted, "that the truth lies between the extremes, and is a very difficult matter fully and properly to be arrived at." The Agriculturalist's successor in 1864 as the official publication of the Board of Agriculture, The Canada Farmer, promised not to dismiss the sciences from its pages, although it intended to emphasize practical considerations. "While the aids of science," said the journal's publisher George Brown of Toronto, "will be systematically involved, the great end constantly kept in view will be to gather up the matured opinions of practical men on practical matters."<sup>107</sup> Although the Farmer acknowledged that scientists alone had the learning needed to explore less obvious dimensions of the natural world, it thought that such complex work would occupy them indefinitely in highly problematic research:

The empire of knowledge, yet unexplored is infinite, illimitable. Imagination toils in vain, in the mere conception of the heights and depths that future ages may reveal. There are, for example, botany, natural history, electricity, mineralogy, geology, chemistry, and at least a score of other sciences, on any one of which the mightiest intellect may labor for a long life, and yet have proceeded little beyond the confines! We know and can know but in part; but whatever we attempt let us first try and comprehend the principles.<sup>108</sup>

Given this daunting challenge, a contributor to the Farmer thought it necessary to emphasize Bacon's principle "that truth is born of fact, not of speculation -- that systems of knowledge are to be founded, not upon ancient authority, not upon metaphysical theories, but upon experiments and observations

in the real -- not the ideal -- world around us."<sup>109</sup> After three decades of pursuing agricultural knowledge since William Evans's Treatise appeared in 1835, agricultural improvers were pushing hard against the dead weight of confusion and ignorance about farming. Although they had clear ideas about the nature of the intellectual challenge in agriculture and the methods of thought required to meet it, they had had little success. As The Canada Farmer admitted in 1865, "there still remain a great extent of variety, uncertainty, and inexactness in this -- the most ancient of all occupations under the sun."<sup>110</sup>

The mid-Victorian framework of thought for such agricultural questions had three general characteristics. First, it was thought that agricultural knowledge was pursued in an environment which yielded little of it readily. Access to nature's most complex secrets, if possible at all, was not easily obtained, and moral failings and mental laxity made the inquirer himself an often unreliable recipient of the knowledge which was available. The natural world and human nature bore these marks of the "primeval curse"; progress through acquisition of knowledge which gave mastery of the environment involved a struggle against moral and intellectual defects as well as nature. Secondly, the difficulty of quickly acquiring much definite knowledge in farming thrust improving farmers back upon a modest goal -- personal knowledge of that which was of immediate advantage in farm work. Moral and mental discipline applied to direct observation and long experience of practical agricultural problems could gradually provide the knowledge necessary to fulfil God's plan for human salvation, society, and dominion over nature. And finally (or thirdly), the main social implication of this approach to knowledge was that improving farmers were the sole custodians



of farm knowledge because only they had sufficient direct practical agricultural experience to obtain it. This favoured position promised to make them the greatest social beneficiaries of intellectual progress in agriculture. When their enormous intellectual task eventually bore fruit, they alone would possess the most important technical knowledge the entire community required. They would have a place of honour in the new Eden.

## II

### Crisis and Renewal

The weaknesses of the wheat economy made the 1860s and 1870s a particularly difficult period of adjustment in rural Canada West and Ontario. Although the magnitude of these problems underscored the inadequacy of available agricultural knowledge, the agricultural improvers thought that their very perplexity at least confirmed a central tenet of the philosophy of agriculture -- that agricultural problems were as intellectually demanding as any other intellectual challenges. The improvers believed that their solution to these problems (an intensive system of commercial mixed farming, based on much more precise practical knowledge) would of necessity require a greater role for the intellect in farming. This chapter shows that this prospect sustained the promise of the intellect in agriculture through the mid-century difficulties. The intellect in agriculture would yet, it was still hoped, remove the primeval curse and establish a rural Eden in Ontario.

Throughout the 1860s problems with wheat production and marketing plagued rural Canada West. Total production, yields per acre, exports, and prices of the staple fell dramatically over the decade. Article after article in the agricultural press on the "wheat question" accompanied the disturbing statistical

trends. Almost without exception observers blamed the problem on the type of farmer whose failure to grasp "the philosophy of his business" caused the rampant soil exhaustion which reduced yields and left the debilitated crop more vulnerable to the attacks of the midge and rust. A solution to "the great question of the soil," said Thomas Stock in his presidential address to the Provincial Agricultural Association in 1867, was the most urgent requirement of Canadian agricultural progress.<sup>2</sup>

Agricultural improvers also understood the wheat problem to be an especially serious manifestation of the "primeval curse" affecting all plant and animal life. The Canada Farmer used a front-page editorial in 1868 to lament wheat's "constant tendency to degeneration." It noted that wheat-growing was normally successful on previously uncultivated or "virgin" soil, but the amount and quality of yields per acre on soil perennially sown with wheat inevitably declined until the crop became unprofitable. New varieties of wheat had flourished for a time, but they, too, eventually succumbed to "degeneracy." Previous expedients resorted to when wheat had failed were not as attractive in the 1860s. The Farmer recalled that more "virgin" land had been occupied when older soils had been "worn-out" by excessive wheat-growing; but most of the desirable land in Canada West had been settled by 1860.<sup>3</sup>

The problems of the wheat staple were compounded when the American midwest began to demonstrate its staggering potential for wheat production. Despite the additional domestic requirement for food created by the Civil War, American wheat exports soared from an annual average of five million bushels to twenty-two million during the 1860s. By 1875 these shipments easily exceeded

those from the other major exporters: Canada, Russia, India, and Australasia.<sup>4</sup> Ontario's position in export markets for wheat was challenged by the late 1860s. The difficulties with wheat production in the late 1850s and early 1860s had shaken the confidence of agricultural leaders in the province's ability to continue raising the staple, but as world wheat production rose sharply, and the price of wheat in Europe registered a steady net decline across the rest of the century, they recognized that, regardless of how well cultivated, wheat could no longer be the most important source of farm income in Ontario. The province's heavy dependence on wheat could not be justified.<sup>5</sup>

Agricultural expansion in the United States and the close of the frontier of settlement in Canada West during the 1860s permitted the American midwest to give the province stiff competition for European immigrants as well as wheat markets. Reports from the midwest spared few superlatives in describing for the prospective settler the extent, accessibility, and fertility of land in Kansas, the Dakota Territory, Iowa, and Nebraska.<sup>6</sup> The trainloads of Europeans passing through Canada West on the way to the American midwest painfully exposed the failure of Canadian immigration policies in the 1850s and 1860s. The editor of The Canada Farmer could only turn from news of yet another train headed through the province in 1868 for the United States with renewed determination to advance Canada's claims as a home for immigrants. "This work mainly involved exploding those "glowing accounts of the Western Prairies, and what a heaven on earth they are to the agriculturalist in comparison with poor Canada." By the late 1870s, however, disappointment among leading agricultural officials with the number of farmers immigrating to Ontario continued unabated.<sup>7</sup>

This faltering agricultural economy only added to the burdens of rural social life. The Canada Farmer found an extraordinary level of discontent among Ontario farmers in the 1860s. "What an amount of complaining there is among them that farming is not a money-making business," the journal noted, "that in this country it does not pay; that the seasons are so short and uncertain that they cannot be reckoned on; and, in short, that there are so many drawbacks of one kind or another that they have good reason to be dissatisfied with their lot." Although they might grumble about these conditions, the journal thought farmers actually worked excessively hard to make ends meet. "With a large class, indeed," it said, "life is from beginning to end a perpetual struggle."<sup>8</sup>

Unremitting toil left insufficient time and energy for social, cultural, and intellectual pursuits or even a proper home life. The worst results of this problem could be seen on the impoverished farm of the "ignorant farmer" who "goes blindly on, his crops growing less and less, until he falls into debt and poverty, becomes discouraged, sells his farm, emigrates to the West or to some new country -- or he remains to struggle on, while his sons, finding farming a poor business, go to the city to seek their fortunes by crowding into the professions, or trying to get into mercantile pursuits. Moreover, sections of country acquire a bad name, farming doesn't pay there, and emigration passes them by for more inviting neighbourhoods." Thomas Stock feared that as a result of such social tendencies farming "is thought by many to be a comparatively inferior calling, characterized by hard, rough work, and small gains; whereas that of the merchant and professional man is regarded as much more clean and agreeable, attended by far greater profit, and altogether more desirable and respectable."<sup>9</sup>

In the eyes of agricultural improvers the most ominous effect of the straightened circumstances of rural life in the 1860s was upon young people. The shortage of good farmland in particular had an unwelcome impact on them.<sup>10</sup> Young men who could not find desirable land to farm naturally had to look beyond agriculture for employment. Some sought opportunities in the growing urban centres of Canada West. Enough of them had left farming by the late 1860s to arouse concern. "In many cases," reported the Farmer, "they leave their old fathers to toil alone while they try something easier, and, as they fancy, more genteel . . . . Plenty of farmers can be found with two and three grown up sons, and not one to help them in their work or take their places when they die."<sup>11</sup> Those who stayed on the family farm did not likely relish the thought of waiting until their fathers' deaths to inherit land -- especially when the heavier manual work needed on farms which were increasing in size, but not profitability, may have seemed less inviting than the careers in urban businesses and professions their brothers and friends may have been enjoying. Perhaps not surprisingly, then, young people had been heard to argue that establishing "a livelihood and a home" on a farm "involves too hard work and is altogether too slow a process . . . ." The Farmer added that there was no more common complaint in rural circles than that young people had acquired a distaste for farming. The journal consequently found a "restless, unsettled love of change and ease" among them. And during his travels in rural Ontario, George Buckland discovered too many young people "indulging in utopian expectations of the ease and attractions of life in cities." When added up, the Farmer discovered a disturbing social trend in the combination of a failing wheat economy, shortages of farmland, and unimproved agricultural techniques which depleted soil fertility:

A new and enterprising generation has come on the stage. Our common schools have roused the fire of intellect and ambition. Young Canada is aspiring, self-reliant and resolute. But the farm seems a limited sphere of operation. Its monotonous round of toil is humdrum and wearisome. Moreover the virgin soil, exhausted of its original resources, and not properly replenished by intelligent culture, does not yield its increase as of old. Farming is evidently a slow-coach way of making money. There are not the same chances as there were when the country was new, when land was cheap, and when a young fellow could begin with little, and work his way up to competence and wealth. There is no great charm about going back into the bush, and fighting over again the battle with the woods and stumps, which a former generation found so tough and hard a contest. Moreover the positions of honor and influence in our land, are mostly held by others than farmers. The highway to distinction lies through the lawyer's office, or the merchant's counting room, rather than through the wheat field, and the barn-yard. And so the young man, born and brought up in the country, sighs for another and more promising sphere of action.

Social forces such as these, the journal went on, "are great evils, pregnant with disaster to a country mainly dependent on agriculture as the basis of its prosperity."<sup>12</sup>

Ontario faced rural "disaster" in the 1860s and 1870s because the traditional means of agricultural development -- the wheat staple, settlement of new land, and large-scale immigration -- could no longer be counted on. As David Gagan notes, there were "too many people competing for too few resources at a time when the wellsprings of the farm economy, land, markets, and cereal grain

production capacity, were beginning to dry up."<sup>13</sup> By contrast, there was evidence of progress all around the farm in the form of canals, railroads, telegraphy, expanding industries and services, and the new opportunities and amenities of urban life. This left some anxious observers of agricultural affairs asking themselves an unpleasant question. "In this 19th century of ours," said one, "the century of reforms -- the century of gas, steam, and electricity -- we may ask is agriculture advancing with the age, and holding that position to which it is justly entitled?" Like many others, he did not think so. George Buckland, for example, conceded in 1869 that agriculture "has not kept pace with the other industries of life, but has generally been found lagging behind, and frequently exhibiting symptoms of a feeble and sickly existence." And The Canada Farmer regretted that despite the available agricultural publications and societies "Canadian farmers, in too many instances, join the march of improvement with reluctance, and at a snail's pace."<sup>14</sup> Provincial progress was secured to an agricultural economy which by 1870 appeared to be disintegrating.

A multifaceted solution to the rural problem emerged in the mid-nineteenth century. David Gagan's study of Peel County provides evidence that rural families were adjusting to their altered circumstances with inheritance arrangements which assisted young people who could not be accommodated on the family farm to get started in other walks of life. They were also responding to the demographic pressure on the province's limited endowment of agricultural land by delaying marriage and reducing family size. Other farmers became the country's "hopeful travellers" who sought farming opportunities in the American midwest and, after Confederation, on the newly acquired Canadian prairies in



what was formerly Rupert's Land.<sup>15</sup>

Heightened awareness of Canada West's land problem had stimulated the campaign for annexation of Rupert's Land (within the political framework of a wider British North American Confederation) as the best means of relocating the frontier of Canadian agricultural settlement to more spacious zones. By the mid-1860s, proponents of agricultural improvement in Canada West such as George Brown (the publisher of The Canada Farmer) were also among those who were pressing hard for western expansion in order to tap the immense agricultural and commercial potential of the North West. Between 1850 and 1880 knowledge of the West's tremendous capacity for wheat-growing transformed the main Ontario image of the region from that of "a semi-arctic wilderness" to a potential "agricultural Eden" which some thought was ultimately capable of turning the small colonies of British North America into a transcontinental imperial power sharing Britain's own stature.<sup>16</sup>

The third main response to agricultural difficulties in Ontario (in addition to family adjustments and Western expansion) was a drive to renew rural conditions in the province itself. This effort unfolded across the late nineteenth and early twentieth centuries. It indicates no loss of hope in the possibility of establishing an Ontario rural Eden, which conceded little to the West, or to any other region, as the aspirant to the role of indispensable author of Canada's greatness. Despite the severity of the problems facing rural Ontario in the late 1850s and 1860s there was still confidence that in time they could be solved. Thomas Stock encouraged the members of the Provincial Agricultural Association in 1867 with the reminder

that "Nature, it is true, has adapted in a special manner, this section of our Dominion for agricultural pursuits, and this great interest will probably continue the principal source of our wealth and prosperity for generations to come." And with calm audacity, The Canada Farmer simply advised rural Ontarians to help create "an elysium" in response to their difficulties.<sup>17</sup>

If agricultural improvers wanted to construct a model rural social and economic foundation for provincial and national progress, how were they to do so? Thomas Stock's address to the Agricultural Association outlined a new rural development strategy created for that purpose which was already in the early stages of implementation. Its centrepiece was a broadly based and more intensive mixed agriculture underpinned by a thorough commitment to progressive farm methods. The system Stock described included wheat production but did not have wheat as the staple. Stock argued that farmers should cultivate a smaller quantity of arable land "more thoroughly" and increase the proportion of the farm which was devoted to pasture. He recommended that more and better breeds of animals be raised and, in a significant departure from earlier mixed farming programmes, he placed much greater emphasis on commercial dairying and fruit-growing. The potential of dairying in particular, he noted, might be gauged from recent developments in the United States where it "is rapidly assuming gigantic proportions." Stock concluded that "it is ... to the extending of productive pasture, in connection with the breeding and fattening of stock and of the dairy, that we must mainly look for the means of renovating our exhausted arable lands, and of securing the advantages of an improved system of farming."<sup>18</sup>

Ontario might not be able to match the resources of land and virgin soil available for wheat-growing in the American midwest and on the Canadian prairies, but the province could still hope to fulfil its agricultural development mission with the reorientation of farm production Stock had urged upon the members of the Agricultural Association. Farmers in Canada West had always kept livestock and they had grown crops other than wheat. Other grains and some meat and dairy products had been produced for consumption on the farm or for sale in nearby villages and towns. However, Canada West still imported great quantities of meat, cheese, oats, butter, fruit, and vegetables as late as the 1850s.<sup>19</sup> By the late 1860s changes in local and regional markets for Ontario's agricultural products presented some incentive to expand the range and quantity of commodities once produced as sidelines to wheat. Imports of farm products in the 1850s had risen sharply in response to population growth in Canada West, particularly in urban centres. An even more rapid pace of population growth and urban development occurred in the northeastern United States and attracted a rising volume of Canadian wheat, flour, livestock, peas, barley, rye, and oats. The Reciprocity Treaty of 1854 attests to the emerging importance of the trade in agricultural products with the United States. The treaty removed tariff barriers on a wide variety of natural products exchanged by the British North American colonies and the United States. The value of American imports of duty free commodities from Canada went from \$1.1 million in 1853 to \$27.6 million in 1857.<sup>20</sup>

The growing American market for Canadian farm products, especially livestock, helped broaden the base of the agricultural economy in Canada West

during the prosperous first half of the 1850s. As a result of increasing foreign and domestic demand livestock-raising became a more significant part of the commercial basis of farming in the colony. The number of horses, cattle, pigs, and sheep in Canada West increased by about 50 per cent between 1851 and 1861.<sup>21</sup> The American Civil War further encouraged diversification of Canadian agriculture by increasing American imports from Canada of cheese and cereals other than wheat (the latter the American midwest could already supply).<sup>22</sup> The end of the war and the abrogation of the Reciprocity Treaty by the United States in 1866 reduced markets for some Canadian commodities, but did not disrupt the process of diversification, particularly since the British market for Canadian cheese and butter, which was just opening in the 1860s, helped sustain it across the 1870s. Significantly, Thomas Stock looked to the British as well as Canadian markets for Ontario meat and dairy products in his 1867 appeal for a heavier investment in mixed farming.<sup>23</sup>

The cornerstone of the new mixed farming was improved livestock. Pure-bred animals especially had to become the basis of the farmer's herds. Better breeds of animals necessitated proper care and feeding. More highly nutritious roots and coarse grains had to be grown in greater quantities; proper barns were required to protect the more valuable livestock; farm buildings had to be designed and arranged for more efficient handling and feeding of greater numbers of animals; and proper veterinary care had to be available. Fattening livestock for meat or feeding dairy cows also involved a careful daily and seasonal feeding regimen in order to realize the animals' optimum value. The model mixed farming operation required a "system of management" designed to integrate the resources

of the farm so that each one made its contribution at the correct time in the production schedule.<sup>24</sup>

The Canada Farmer warmly endorsed the stronger emphasis on commercial mixed agriculture. "The man who wants to make farming profitable now," the Farmer advised in 1873, "must farm well. He must make live-stock the basis of his operations -- he must watch the markets and diversify his crops to suit them -- he must battle against the weeds as his father did against the stumps -- and withal he must keep up the high fertility of his soil and raise large crops."<sup>25</sup> Successful diversification of farming required farmers to depend for their livelihood on a range of crops and products few had much experience with. These commodities also had to be produced in sufficient quantity to provision larger markets and to be of high enough quality to compete in them. Rural Ontario's anticipated dependence on overseas exports of processed products such as cheese and perishable commodities such as butter, live animals, and fruit would commit farmers to more complex production, marketing, and shipping arrangements than they had known when wheat was their primary export. Anything from bad weather and animal diseases to slipshod workmanship, poor planning, or equipment failure could prevent Ontario's products from either reaching or appealing to the consumer. The new mixed farming called for an ever higher coordination of operations, adaptability to changing conditions, and predictability of result. This necessitated better organizing abilities and new business skills. Farmers had to master new and more sophisticated technical skills and expensive technologies. These presupposed an increasing rationalization of agriculture and a thorough reorganization of conventional farm work. In light of these implications of his,

ideas Thomas Stock thought it was all the more important "that we should form a correct estimate of the kind and amount of knowledge which it is necessary for a farmer of the present day to acquire, that he may follow his pursuit intelligently, improvingly, and profitably."<sup>26</sup>

As if to inaugurate an era of rural regeneration through commercial mixed agriculture, The Canada Farmer announced publication of a new series of the journal commencing in January 1873. After reviewing the by-then familiar agricultural problems in Ontario, an editorial in the first issue of the series put the accent on new departures in farming. "The past is one thing," it commented, "the future is a very different thing." The Farmer then promised that several specialties would be better covered in future issues while the journal itself would appear twice monthly instead of once each month. When the Farmer had first appeared in 1864 five areas of interest were identified for special coverage: agricultural chemistry, livestock-raising, horticulture, architecture, and veterinary science. The new series which started in 1873 offered seventeen "departments" ranging from those mentioned in 1864 to others gradually introduced since then such as entomology, dairying, fertilizers, land drainage, grasses and forage crops, seeds and seed-growing, farm implements, forestry, and bee-keeping.<sup>27</sup>

The expansion of The Canada Farmer indicates that the emerging commercial mixed agriculture necessitated a broader range of information than

ever before in Canadian farming. As David Christie said in his presidential address to the Provincial Agricultural Association in 1870, before launching into an appeal for mixed agriculture, "The inspiration of new ideas and modes of thought in agricultural and mechanical arts has been so vast and varied that the mind is almost lost in contemplating it."<sup>28</sup> The seriousness of rural Ontario's social and economic problems in the 1860s and 1870s and the enlarged intellectual challenge of the principal solutions being advanced by prominent farmers such as Christie convinced S.C. Wood, the Commissioner of Agriculture and Arts for Ontario, that a royal commission on the province's agricultural conditions and prospects was warranted. Wood himself chaired the Ontario Agricultural Commission when it began work in April 1880. Among the seventeen other commissioners were leading Ontario farmers such as Thomas Stock.<sup>29</sup>

The commission divided its work into 21 areas of inquiry which included soil, climate, topography, grain-growing, livestock-raising, dairying, fruit-growing, fertilizers, implements, land drainage, forestry, entomology, bee-keeping, and agricultural education. During the summer and autumn of 1880 the commissioners travelled across Ontario gathering evidence from 205 witnesses. The commission's 563 page report and 4 volumes of appendices were submitted to the provincial government in February 1881. The major conclusion of the report was that Ontario was more than capable of producing a great variety of agricultural products. The commissioners proclaimed that "one of the finest features of agriculture is its diversity." Thus the passing of wheat as Ontario's staple crop was accepted because the province could fall back on an array of other commodities. Indeed, the commission found that the typical Ontario farmer in

1880 "carries on a system of mixed farming, working probably from one hundred to two hundred acres of land, raising just such crops as his soil seems best adapted for or his convenience demands, keeping his fifteen to twenty head of stock, and a few sheep and hogs, using the milk of his cows for the cheese factory or home dairy, and fattening two or three beasts annually for the market." The commission was also gratified that the Ontario farmer had begun to find a substantial foreign market, particularly in Great Britain, for his livestock, cheese, butter, and fruit.<sup>30</sup>

To assist this transition to an increasingly more productive and efficient system of commercial mixed agriculture the commissioners devoted the largest part of their report to the characteristics and advantages of such a system. With this goal in view, the commissioners wanted their lengthy report to be a compendium of practical information on the production and marketing of every agricultural commodity which could conceivably be raised in Ontario. Farmers needed just such a general reference text on the latest and most progressive farm practices because "the time has come when farming, to be successful, must be carried on upon new methods and under new conditions. Adventitious advantages must be depended on no more. Skill, energy, a readiness to avail of every new idea worth utilizing, are the only reliance of a sensible man now-a-days . . . ." <sup>31</sup>

It was easy enough to exhort farmers to farm well or diversify their crops, but how were they to acquire the ever increasing amount of information needed to make the appropriate adjustments in the management of their farms? Installation and maintenance of a mixed farming operation called for an expanded body of



basic knowledge about agriculture, but management of such a farm at its maximum capacity, which was the commission's ultimate aim, required a flow of information which could only be sustained by constant, careful agricultural experiments. "An intelligent farmer," the commissioners thus advised, "will always be experimenting . . . ." <sup>32</sup> To underline this point, four of the commissioners -- William Saunders, Thomas Ballantyne, William Whitelaw, and William Brown -- had reputations in the province as advanced experimenters. The commission devoted a great deal of attention to their work and to that of other prominent Ontario experimenters such as Charles Arnold and P.C. Dempsey, who were not members of the commission. These men were the leading Ontario counterparts of the "farming philosophers," as The Canada Farmer called them, who were pioneering in agricultural experimentation in Britain and the United States. <sup>33</sup>

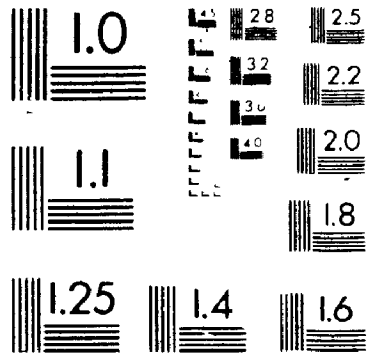
The notion that formal or controlled experimentation was the principal way for the ordinary farmer to acquire the additional information needed to reorient agricultural production represented an important shift in emphasis in nineteenth-century farm improvement. In the 1830s and 1840s, agricultural improvers stressed that farming had already accumulated a substantial body of well-established and straightforward information about ordinary farm operations. Even the known scientific component of this information was essentially uncomplicated. The farmer's main task was to assimilate and employ this knowledge. A progressive farmer's knowledge was expected to grow slowly. Observations made in the daily round of farm work would be the main source of the rather minor modifications in agricultural practice which were anticipated

once improved principles were applied.<sup>34</sup>

There was room in improved farming for only modest formal experiments. In 1852 the University of Toronto, at the request of the Board of Agriculture, set aside fifty acres on the campus for an "Experimental Farm" for Professor Buckland. Neither Buckland nor any other faculty members, however, were expected to embark on field trials designed to solve any truly difficult agricultural problems. Rather the farm was to be used to illustrate Buckland's lectures and to determine whether imported seeds, plants, and implements could be introduced in Canada. The farm proved to be a financial embarrassment and it made no noteworthy educational contribution. Although agricultural improvers of the 1850s supported experimentation in principle, the great caution they expressed in the farm press about overly ambitious experiments, and their disappointment with the frequency of misinterpreted ones, suggest why they put their best efforts into other areas of farming.<sup>35</sup>

Few agricultural matters seemed as straightforward in the 1860s and 1870s. Chemical soil analysis had revealed its serious shortcomings in the 1850s; sciences other than chemistry had by 1870 also done little for agricultural practice; and the practical agricultural "science" which men such as James Croil had sought to develop through the orderly arrangement and application of knowledge derived almost exclusively from day-to-day field experience had not advanced agricultural knowledge much either. The Canada Farmer, which put its confidence in such practical approaches to "scientific" agriculture, admitted in 1871 that "unforeseen circumstances and casualties in the ordinary management of the farm often arise

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**Microlin**

to baffle our experience . . . ."36

The bountiful wheat harvest of 1871 presented a case-in-point of the problem of agricultural knowledge. Excellent yields were obtained regardless of the quality of soil and seed, the variety of wheat planted, and the farming techniques used. "Good farming," said the Farmer, "has not produced a correspondingly better crop, while bad farming has produced far more than it deserved." Editorials in the journal might advise the puzzled farmer to seek out the experiences of others in farm periodicals and books and the discussions at local agricultural society meetings; however, exchanges of information between even the most progressive farmers could break down into hopelessly tangled disputes over the best farming methods. In 1866 James S. Gould, the President of the New York State Agricultural Society, could thus justifiably bemoan the generally dismal state of agricultural knowledge: "We have had theories of agriculture without end, propounded for our consideration; innumerable guesses have been hazarded upon every conceivable topic; inconclusive experiments which no man can number have been made, and yet to our shame be it spoken, there is scarcely a single question which has been mooted in American agriculture that can be said to be settled on the sure basis of reliable experiments."<sup>37</sup>

Much of the most familiar agricultural experience remained unexplained at the very moment when the need of an expanding body of knowledge for mixed farming was most pressing. With so little physical science to help them, improvers fell back on an intensification of practical approaches to farm problems through reliance on more systematic practical experiments. The Canada Farmer

said that mastery of the intricacies of the most advanced agriculture required "testing the immediate and after effects of fertilizers, the most profitable rotation, the desirableness of new varieties, the amount of feed of every kind required to make a pound of meat, and a host of other things." This meant that agricultural skills and practices based on what may before have passed for careful observation had to be founded on a far more accurate knowledge of nature. The average farmer, however, the journal complained, merely "learns how to perform farm operations, but acquires no knowledge of the subtle forces of nature with which he of all men ought to be familiar."<sup>38</sup>

The experiments of Charles Arnold of Paris, Ontario illustrate the more refined approach desired. Arnold wanted to know why valuable farm crops "have a tendency to degenerate" which left them vulnerable to diseases and harmful insects. He had heard many farmers say, for example, that the attacks of the midge fly on wheat were related to when the crop was sown. They maintained that the different lengths of time it took the varieties of wheat to mature determined whether a particular crop would avoid the worst point of the midge season. "From hearing this saying repeated so often by close observers of these matters," Arnold remarked, "I at one time believed it, but am now convinced that the idea is erroneous." He thought that his experiments with crossing different varieties of wheat gave the hybrids improved physical characteristics which enabled them to resist the onslaught of the midge while older, weaker, or "degenerated" varieties (unfortified by recent crossings) succumbed. Since each variety took about the same time to mature, Arnold rejected the notion that the time factor had anything to do with the crop's survival. The results of such

experiments convinced Arnold and other agricultural improvers that "judicious crossing" could make wheat a reliable crop again, even though it would not be needed as a staple.<sup>39</sup>

The wider application of this and other techniques of strengthening the quality of farm products was not lost upon Arnold and his counterparts. In fruit-growing, for example, hybridization was essential to establish which varieties of fruit could be best adapted to Ontario's soil and climate, to the requirements of shipping, and to consumer tastes. This could be demanding work. As P.E. Bucke, a fruit-grower in the Ottawa Valley, remarked, "We are still groping in the dark, as we do not know what to plant, having to test almost everything." But there were compensations. Experimenters with fruit such as Charles Arnold obtained international reputations for their work. Five of Arnold's hybrid apples, including "Arnold's Beauty," earned him a medal for the best series of hybrids at the Philadelphia Centennial Exhibition in 1876. And experimentalists from other countries were known in Canada. The work with wheat of a certain Mr. Hallett of Great Britain was enthusiastically received in the Canadian agricultural press. Hallett had painstakingly isolated the seeds of the most prolific plants from several varieties of wheat. By repeatedly selecting and planting the seeds of the best individual offspring of the best seeds, he found that the size of the ears of grain could be greatly increased. The Canada Farmer concluded that "careful selection and treatment of seeds" warranted "more attention." Furthermore, the journal observed that a principle of general relevance to agricultural improvement was implicit in Hallett's findings. "From the results of actual experiments," the Farmer said, "it is clear that marked and permanent improvement may be

attained in wheat, as in other vegetable products, and notably in breeds of animals, by selecting the best samples, and those only for propagation . . . ."40

The compact dimensions of the mixed agricultural operation called for a keen eye for the most minute external features of seeds, plants, animals, and insects. The scientific disciplines were still largely uninvolved. Charles Arnold stressed the "delicacy" of the work of hybridization, not the formal scientific knowledge required to do it. And the farmer who wanted to employ Hallett's method of seed selection and improvement was simply told that "in this selection every important quality should be regarded -- the number of berries on the ear, the size of the grain, the quality of the flour, the profligacy, earliness, and hardness of the variety." The farmer needed no immersion in scientific technicalities to follow that advice. He did need great exactness in his work. As a contributor to The Canada Farmer said, "To ensure a good return the land must be cultivated to the best known advantage, and seed must be adapted to the particular soil and climate with the most minute precision both as to quality and quantity."<sup>41</sup>

Men such as Arnold, Hallett, and Bucke pioneered with improved practical techniques of raising agricultural products; they did not really understand why those techniques worked or what had gone wrong when failures occurred. Answers to these questions could not be expected soon, if at all. "Whether the mind of man will ever be sufficiently advanced to grapple with these subjects," said Bucke, "is at present quite uncertain, but the general advancement of the human understanding leads one to imagine that even these at present hidden mysteries

may not be withheld at some future distant day . . . ." Experimental fruit-growers were approaching the still dark "interior" of nature with little to guide them. The President of the Chatham Horticultural Society, William Ross, added that "the seeds, the principles, the origins of fruits, are all within; what we see is but the bell-handle at nature's palace door, by which we are to solicit the hearty welcome awaiting all her visitors." For Ross, "science" was "the courteous porter" at nature's door, but he neither explained what he meant by science nor how it was to take the inquirer past the threshold.<sup>42</sup>

Others who gave the problem some thought came up with no less elusive answers. George Buckland, the Secretary to the Bureau of Agriculture for Ontario, recognized that as agricultural work demanded greater precision, practical experience, no matter how extensive or acutely understood, would reach intellectual barriers which science alone could surmount. Progress in agriculture would eventually depend on assistance from chemistry, geology, "mechanical philosophy," zoology, "vegetable physiology," and "animal physiology." The actual point of contact between practice and science was still vague and not likely to be clarified for some time:

The many and peculiar difficulties which at present beset the pursuits of farmers in relation to the higher teachings and applications of science, should induce them more earnestly than ever to devote their lives to inquiry, patient observation and unfaltering perseverance, welcoming with gratitude every ray of light which science may throw across their path, in the full assurance that, by degrees, present anomalies and perplexities of practice will be explained, and this noble



art removed in great measure if not entirely, out of the dark recesses of empiricism, into the cheering and health-inspiring light of a progressive science.<sup>43</sup>

Buckland advised farmers to leave detailed exploration of the expanding realm of scientific knowledge to professional scientists. A mastery of the sciences could not be obtained in practical agricultural work or even through studies pursued in combination with practical farming. The two spheres of knowledge were too immense to be acquired simultaneously by one man. "What is really needed," he said, "and what is, I think, practicable, is to instruct our youth in the principles of science, as to enable them to appreciate the results obtained by scientific men and advantageously cooperate with them in affecting practical improvements. The amount of scientific knowledge which such a view assumes is no contemptible modicum, and would demand years of patient study and careful observation of an active business life to acquire."<sup>44</sup>

Although this was still a nebulous prescription for the development of scientific agriculture, Buckland believed the increasing difficulty of the problem of agricultural knowledge itself at least disproved the old prejudice "that agriculture is so simple a thing that any youth, however feeble his mind and sluggish his mental habits, can readily be made into a farmer . . ." Farming, he maintained, "instead of being the simplest, is one of the most difficult and complex, as it is unquestionably the most valuable, of the various industries of this brief and busy life." Buckland thought that the broadening intellectual foundation of agriculture in the sciences and "enlarged experience" could remove

farm work's most serious social handicap -- its assumed intellectual inferiority. The Canada Farmer put the matter more bluntly: "The cause of the danger that threatens the social condition of the farmer is apparent -- he does not know enough. The way to remove the evil is equally clear -- he must learn more."<sup>45</sup>

Buckland was convinced "a new era" in farming had recently begun in progressive countries such as Canada where farm practice could eventually be united with science. To these nations "a high and important trust has been committed, which if faithfully executed, will be pregnant with untold blessings to all coming generations."<sup>46</sup> Should farmers only catch a glimpse of rural possibilities when practice and science eventually joined forces they would soon arrive at the proper, more elevated estimation of the nature and value of farm work. The changes affecting the Ontario agricultural economy in the 1860s revived the hopes for a new progressive age in farming which were first raised in the 1840s and then dashed on the disappointments and setbacks of the 1850s. The transition from wheat staple farming to mixed farming, centred on livestock-raising and dairying, promised release from the inherent deficiencies of the wheat plant and the fluctuations of the wheat economy. A contributor to The Canada Farmer set out the contrast between the self-defeating practices and marginal existence of the old wheat farming and the reliable returns awaiting farmers who adjusted to the new economy: "Let us ask what is the present, and the probable future position, of the Canadian farmer? In the past, he suffered great disadvantage. Raising little but wheat, which had first, with great difficulty, to reach, and then to cross the ocean before finding a market, he exhausted his land, and invited the attacks of insects by the yearly increasing weakness of the

growing plant, in endeavouring to raise that which alone he could sell, and which he must sell, to live. But now, all that his dairy can produce or his fields grow, and every head of cattle he can fatten, find ready sale in Canadian, American, or European markets."<sup>47</sup>

The regeneration of Ontario's agricultural economy offered much more than economic security. The reformers thought it also opened up the breathtaking possibility of a radical transformation of farm work and rural society. Farmers needed new and more complex technical and intellectual skills, mechanical devices and scientific knowledge to produce the now more varied and sophisticated commodities. The improvers concluded that farming could no longer be equated with soul-destroying drudgery. More than ever it was becoming an intellectual rather than manual pursuit. The wearying, soil-exhausting, and mind-numbing routines of a primitive monoculture could be exchanged for the multifaceted constantly evolving challenges of the new farming. The farmer who tackled the questions arising from the relationship between the sciences and agricultural practice had professional status conferred on his work. Agricultural improvers thought farming could yet become a scientific profession which offered an avenue to self-development and social respectability once reserved only for men in the traditional professions. A note in The Canada Farmer in 1873 captures the optimistic social vision made possible by the changing nature of farming: "Farming should not be looked upon merely as a means of subsistence, but adopted partly with the view of enabling us to cultivate the moral, intellectual and social powers, and to discharge the duties devolving upon us as citizens, under circumstances the most favorable. It should not tend to make men mere

machines, who toil for the sole purpose of gratifying their appetites, but to elevate and refine to the highest degree of perfection, all the better faculties of our nature."<sup>48</sup>

An earlier lead editorial on the social promise of farming had said that rural Ontario had no greater need than more "gentlemen farmers." The editorial then advanced this definition of the term: "The truth is, a gentleman farmer is one who has been not only brought up to farming as a business of life, or taken to it as a means of livelihood, but has also received such a good education as to be able to divest himself of prejudices, and use his brains to assist his hands in his labours; one who looks upon his calling, not as one of unceasing toil and drudgery, to be followed in the beaten path made by his father or grandfather before him, but rather as a profession, and is therefore able and willing to bring the lights of science to his assistance."<sup>49</sup>

The farmer who was moving toward this goal could be confident that he was fulfilling the divine purpose for man. As the President of the Provincial Agricultural and Arts Association said in his annual address to the members in 1869, "It is intelligence, moral and intellectual, which purifies the heart and elevates the man. It is intelligence -- a broad and substantial knowledge of truth -- which restores to man the image of his Maker -- his high place in the scale of created beings." Farmers who accepted the intellectual challenge of their work, he went on, were transforming the "primeval curse" into a "blessing":

It is but a natural inference from the wisdom and goodness of the

Great Artificer of the universe, that the highest development of the human family is to be obtained from pursuing, with active and intelligent diligence, that sphere of duty which, with unerring certainty, has been pointed out and made necessary by the declaration of Heaven's own word -- 'In the sweat of thy face shalt thou eat bread till thou return unto the ground.' Though this may seem to be, as it really is, the language of displeasure, is it not a blessing in disguise? For is it not the highest wisdom and truest glory of any people to cultivate, honour and cherish the life-ennobling employment of honest and useful industry? And since science has opened new fields of discovery -- calling in as handmaids, mineralogy and geology to instruct and edify -- the occupation of the farmer is no longer that menial office, associated with slowness of speech and dullness of mind, but one calculated to inspire the loftiest thoughts and noblest sentiments; as containing more that is beautiful, varied and wonderful in the mechanism of flowers, plants and shrubs, as well as in the germination, growth and perfection of the infinite variety of fruits and grains, all subject to harmonious laws, making the research and acquaintance of the humblest of the tillers of the soil.<sup>50</sup>

Amid the farm troubles of the 1860s and 1870s in Ontario, therefore, hopes for rural renewal were raised by the early progress of commercial mixed agriculture and more vigorous experimental work. Indeed David Christie, in his presidential address to the Agricultural and Arts Association in 1870, said progressive men were leading their fellow farmers into a new Edenic age:

Let us be encouraged by our own success in the work in which we are engaged. Be assured that the future will yet more abundantly repay your labours. A grand plan of prophecy is advancing, both in the physical and moral world, and we live in the expectation of a coming

era, when the streams which have run for ages alongside of each other will unite, and yield, at the same time, a nobler condition of the earth's surface, and of the spiritual character of its inhabitants. 'They shall not labor in vain, nor bring forth trouble. Instead of the thorn shall come up the fir tree, and instead of the briar shall come up the myrtle tree.'<sup>51</sup>

### III

## "Educate! Experiment!": Founding the Ontario School of Agriculture and Experimental Farm

Leading agricultural improvers realized that an Ontario rural Eden would be a distant dream as long as farmers were unfamiliar with the more intensive practical approaches to commercial mixed agriculture. The expanded intellectual challenge of mixed agriculture involved meticulous and expensive experimental work which few farmers could undertake on their own. In 1874 the Ontario government opened the Ontario School of Agriculture and Experimental Farm near Guelph in order to provide the required leadership in such advanced practical field experiments. The initial progress of the institution by the end of the 1870s brought its founders and staff grounds for confidence in rural Ontario's ability to overcome the problems of the previous two decades. They believed an improved system of mixed farming in the province, linked to formal agricultural education and experiment at Guelph, promised eventual release from the limited potential of the old agriculture based on the degenerating wheat staple, excessively hard manual labour, and haphazard farming methods. The practical farmer trained at the school and farm would provide the knowledge needed to regenerate Ontario farming. The new agricultural experts at Guelph and their students were thus preparing to become the principal custodians of the philosophy of agriculture in Ontario.

3 The Canada Farmer observed that few farmers were known to be serious experimenters in the early 1870s. It complained that "farming is standing still for lack of farmers competent to grapple with the many-sided problem of scientific cultivation." George Buckland pointed out that a single experiment often took a full year to complete and, as the questions investigated became more advanced, valid experiments could involve even longer periods of time. "Agricultural experiments," he said, "are in their very nature, highly complicated, and the number that come within the experience of the busiest and longest life, must be necessarily restricted." Even the renowned Charles Arnold found that the investment of time, labour, and expense which he had made in his experiments had been nearly prohibitive. He did not think he had the resources to pursue his most ambitious plans.<sup>1</sup>

The Farmer noted that a farmer who did try to experiment could be expected to be considered "something of a fool" by his neighbours. If his experiments failed, he was quickly ridiculed and easily discouraged. Agricultural improvers believed that those who perceived farming's emerging intellectual foundation formed a small minority in Ontario. Improvers thought they were not simply making their appeal to an indifferent or sceptical rural audience but one frequently hostile to their ideas. Too many farmers worked their land as inefficiently as ever and not only held science in agriculture in contempt but also brushed aside extensive practical improvements as too expensive to introduce.<sup>2</sup>



Failure to kindle the spirit of improvement in these farmers pointed up the obvious inadequacy of previous attempts to advance the cause of improved agriculture. Educational methods which had been employed between the 1840s and 1860s to raise the general standard of farming were, by the improvers' own admission, reaching the limits of their effectiveness. They were doing little to fend off the multiple threats to rural Ontario in the 1860s: soil exhaustion, shortages of good farmland, the rising appeal of urban life and work for rural young people, and the lure of settlement in the booming American west. The University of Toronto programme in agriculture had failed miserably to make an impression on Ontario farmers. The farm journals, long considered an essential vehicle for agricultural education, and thought by many contributors to The Canada Farmer to be the primary means of educating the farmer, were again shown to be much less effective than had originally been hoped. At the end of 1868, the Farmer complained that only a handful of farmers in Ontario subscribed to it and that it had not yet turned a profit.<sup>3</sup>

The local agricultural society's value as an educational force also came under critical re-evaluation toward the end of the 1860s. The initial burst of agricultural reform activity in the 1840s succeeded in establishing local societies across Canada West. The high priority given this project rested on the assumption that the societies would be a powerful influence for good because they would be closer to the farmers in their communities than any other agency. But after reviewing the work of the societies as described in the annual reports they submitted to the provincial government between 1868 and 1870, John Carling, the Commissioner of Agriculture and Public Works for Ontario, openly complained

that "comparatively little really useful and generally interesting information, fitted for publication, is given in their annual returns." He still thought the societies were "a latent power for good" but "something further was needed" to provide young people in rural areas with instruction in progressive farming.<sup>4</sup>

The "something further" to which Carling alluded turned out to be the establishment by the Ontario government of an agricultural school and experimental farm. The most promising departures in agricultural education in North America during the 1860s were taking place in the agricultural college movement in the United States. George Buckland had been greatly encouraged about the prospects for agricultural education by the creation of a number of agricultural colleges in the United States under the provisions of the Morrill Act of 1862. The act granted every state in the Union 30,000 acres of land for each senator and member of the House of Representatives it then had for the purpose of endowing at least one agricultural college. In a speech at Elmira, New York, Buckland praised Cornell University, which was the home of New York State Agricultural College and the recipient since 1865 of the endowment obtained through the Morrill Act.<sup>5</sup> Among the several other state agricultural colleges to benefit from the Morrill Act those in Michigan and Iowa came to Canadian attention mainly through the efforts of the Reverend W.F. Clarke. As editor of The Canada Farmer (1864-68) and The Ontario Farmer (1869-71), Clarke did more than any other agricultural reformer to introduce Canadian farmers to the American experiment in higher education in agriculture. The Canada Farmer carried a feature illustrated article on the Iowa Agricultural College in May 1868. The Ontario Farmer ran a similar report on the Michigan Agricultural College in

January 1870.<sup>6</sup> In Clarke's opinion, Ontario had for too long "been behind the States of the adjacent Republic in provision for educating our young farmers for an avocation the intelligent and successful prosecution of which necessarily underlies our prosperity and wealth. It is high time that we should be able to point to a well managed and flourishing College of Agriculture as proof that our rulers have a wise care and regard for the foundation interest of our country."<sup>7</sup>

John Carling commissioned Clarke in August 1869 to study the major American agricultural colleges and the programme of the United States Department of Agriculture in Washington, D.C. Clarke's commission instructed him to "submit an economical and practical scheme for the establishment of an Agricultural College in this Province. You will also furnish this Department with any suggestions your tour may enable you to make, whereby its serviceableness to the Agriculture of this Province may be enhanced."<sup>8</sup> Due to an illness Clarke delayed the start of his American tour. He did not submit his report to Carling until 8 June 1870. Clarke thought only two of the colleges he visited -- Massachusetts Agricultural College at Amherst and Michigan Agricultural College at Lansing -- were worthy of extended attention. Massachusetts Agricultural College had been planned in the early 1860s under the terms of the Morrill Act and opened in October 1867. Michigan's opening in May 1857 provided a longer history to examine but, due to the length of time involved in establishing the college's farm facilities, it too had not really left the developmental stage. Both colleges had four-year programmes offering similar curricula in each year. A student graduating after four years would have taken courses in languages, literature, elocution, history, philosophy, mathematics, chemistry, botany,

zoology, physics, entomology, and geology as well as agricultural subjects such as dairying, stock-farming, fruit-growing, and gardening.<sup>9</sup>

Despite these similarities Clarke preferred Michigan as the model for Ontario's agricultural college because its curriculum placed greater emphasis on field labour. At Lansing the students were required to spend three hours each day in field work. Massachusetts asked for only two hours every other day.<sup>10</sup> An article on Michigan published in Clarke's Ontario Farmer contained a long excerpt from a college publication which explained that manual labour on the college farm had a pivotal role in a young farmer's education in the science of agriculture. Instruction in the sciences most closely associated with agriculture naturally received greatest attention in the lecture halls; however, the long and frequent sessions in the field not only gave the students the opportunity to master farming's technical and physical skills but also to test the purely scientific or theoretical presentations made in the lectures. In that way experimental field work provided a necessary check on the sort of wild speculation which had so often in the past brought scientific agriculture into disrepute:

The instruction given in the lecture room is illustrated and enforced by the actual and prolonged study of plants and animals, and the various practices and experiments of the farm and garden. Students are taught to distinguish clearly between those principles and settled rules of Agriculture, in accordance with which they may safely proceed, and those theories or practices which are either exploded, or are as yet the proper objects of experiment and discussion only, but whose too hasty adoption has led to repeated failures, and to the discredit of Science . . . . Agriculture is the creature of experiments. Very few farmers

possess facilities for carrying on experiments accurately, and to definite results. From a lack of general acquaintance with the laws of nature, their experiments, generally, unless guided by scientific men, are comparatively valueless for the determination of vexed questions of practice, and the establishment of general principles. An extensive laboratory, and other means at hand, enable the Institution to enter on a series of experiments, to be prosecuted systematically and continuously from year to year.<sup>11</sup>

Clarke spent less time investigating the second part of his commission -- proposals for changes in the Ontario government's agricultural programmes based on the work of the United States Department of Agriculture. He returned from his visit to the latter's Washington office with "the conviction that some sweeping changes are needed in the management of our agricultural affairs," but without any detailed recommendations. The Americans were not yet doing enough in Clarke's opinion to promote improved farming except in the compilation and publication of agricultural statistics, distribution of seeds and plants, maintenance of a small experimental garden and an entomological service. Clarke thought it would be improper without further study to do more than endorse these programmes and immediately recommend "that something be done" to obtain greater benefits from entomology. For Clarke the agricultural college and farm would be the new focal point for the provincial government's involvement in Ontario farming. He thought that its students "will go forth as missionaries of scientific agriculture" to the farmers of the province.<sup>12</sup>

The provincial government responded in 1871 to Clarke's report by

purchasing about six hundred acres of land near Mimico Station in the Township of Etobicoke for a school of agriculture and experimental farm. The site pleased the Secretary of the Bureau of Agriculture, George Buckland, but virtually ignored one of Clarke's principal recommendations -- that the school be established without ties to a university. Buckland thought the Mimico location would allow students who wanted to pursue further study in literature or science to move on easily to the nearby University of Toronto. In addition, he said "non-resident teachers" in specialized fields (presumably Buckland and certain of his colleagues at the university) would be at a convenient commuting distance from the school.<sup>13</sup> These plans flew in the face of the academic independence Clarke believed was behind the early success of the agricultural colleges in Michigan and Massachusetts. (Neither college was affiliated with a university.) In Clarke's estimation Buckland's aims resembled the formula for agricultural education which had clearly failed at the University of Toronto. Clarke petitioned the government to relocate the school near a town in some progressive rural area in order to avoid the many dangers associated with an urban university setting for agricultural education. He reminded the government that his report of 1870 had warned that when farming was taught in a university the agricultural students felt inferior to the students who were preparing for the legal, medical, and clerical professions:

It would seem as a matter of theory, that a school of agriculture affiliated with our noble Provincial University; and profiting by its existing facilities for pursuing such studies as though pertaining to a general literary course, are also cognate and necessary to an agricultural course, ought to prosper and be widely useful; but

stubborn facts refuse to sustain the theory, and prove beyond successful dispute, that to teach agriculture effectively, there must be a separate College for the purpose with a model or experimental farm attached, where the students can be taught practice as well as principles, and where, without sacrifice of respectability, or loss of caste, they can doff the gown and trencher, put on the smock-frock, and handle the dung-fork, or the hoe, in the actual manipulations of farm-work.<sup>14</sup>

Clarke had no objection to students of agriculture taking literary courses as long as the courses were taught at a college set apart primarily for agricultural purposes.

These academic objections were not the only ones made of the Mimico site. Clarke also claimed that its poor soils and inadequate supply of water made it unsuitable. He was joined in this criticism by the Council of the Agricultural and Arts Association (before Confederation known as the Provincial Agricultural Association) after it inspected the site at the request of Archibald McKellar, who was John Carling's successor as Commissioner of Agriculture. The council's president, Stephen White, even went so far as to say that "the whole neighbourhood is repulsive and seems to be malarious."<sup>15</sup> At McKellar's request the council examined alternate sites near Guelph and on 26 February 1872 White reported that F.W. Stone, a prominent livestock-raiser, had made a firm offer to sell his 550 acre farm near Guelph known as Moreton Lodge, after the council visited the property and pronounced it eminently suitable for the school of agriculture.<sup>16</sup> The government concluded the purchase of the Stone farm in

October 1873 and immediately began to prepare the existing facilities for the arrival of the first class of students on 1 May 1874.

To determine what needed to be done to transform the Stone farm into an agricultural school Archibald McKellar appointed the Provincial Farm Commission on 10 October 1873. The commission was composed of eight leading experts in agricultural affairs. David Christie, who chaired the commission, George Brown of The Canada Farmer, and George Buckland were its most prominent members. The commission recommended in its report submitted on 31 January 1874 that in the beginning the school should provide only a gradual introduction to the study of scientific agriculture. The commissioners argued that they "have had careful regard to the character and results of the Agricultural Colleges in other countries -- and while anticipating the enlargement of the scope of the School and the elevation of its scientific curriculum from year to year, under the guidance of experience, they have endeavoured to avoid the error of sacrificing the practical to the theoretical, into which so many similar Institutions have unhappily fallen, and to place its operations (at the outset at any rate) on a strictly practical basis."<sup>17</sup>

Recognizing that construction of the school buildings and preparation of the farm required time, the commission only proposed measures for the operation of the institution during what it called the "Preparatory Term." During that unspecified length of time the commission said there ought neither to be a definite curriculum nor stiff admission standard. Students would agree to come to the school for a year and devote almost all of their time to the installation of



school and farm facilities: "During the said Preparatory Term the chief aim should be to teach the pupils how to perform farm work in the best and most profitable manner -- coupled with such an amount of scientific knowledge as will enable them clearly to comprehend the results sought to be obtained from each operation, and the scientific facts and principles on which it is based; and that the light obtained during this Preparatory Term should determine whether or not the amount of scientific instruction should be increased, and, if so, in what manner it can most usefully be imparted."<sup>18</sup>

The school's founders went out of their way to assure the public that it would not be turned over to naive enthusiasts for science. George Buckland said that its motto would be "Practice with Science." Clearly that meant scientific instruction would be subordinate to the primary goal of teaching the best methods of farming. Buckland also said the school would be established "in a cautious tentative manner." The government would not "set up utopian standards which may dazzle for a while." "No vain attempt," he explained, "is contemplated to make youths intended for farming as a means of gaining a livelihood, accomplished chemists, or profound geologists, or indeed adepts in any branch of physical science, but simply to give them reliable information as to the actual results at which scientific men have already arrived, which have a bearing on agricultural practice, in connection with industrial training, and the formation of correct business habits, as will tend to qualify them for becoming on their own account, intelligent, improving and successful farmers." The Canada Farmer strongly endorsed Buckland's proposed motto and the work of the Provincial Farm Commission. The journal said the motto should mean "practice improved by

science, not as the operations of some state institutions read, science with little practical application." Above all, the school and farm should not be permitted to join those institutions as "asylums for theorists."<sup>19</sup>

When the Ontario School of Agriculture and Experimental Farm (OSA) opened in May 1874 it was unquestionably a modest vehicle for the founders' ringing faith in the uplifting social influence of agricultural science. The fact that the principal reported to the Commissioner of Agriculture rather than the Chief Superintendant of Schools strongly implies that it was thought to be of marginal significance among the province's educational institutions. The school's status was not enhanced by the fact that it was grouped for budgetary purposes with asylums, prisons, and charitable institutions such as those for the deaf, dumb, and blind or that it had no right to grant diplomas or degrees and that the basic admission requirement was the same as that for entry into a high school. The low admission standard did not obviate the need to go to great lengths to ensure that there would be enough students to justify the school's existence. During the preparatory term there were to be no tuition fees and each Township Council in Ontario was given the opportunity to nominate one person for admission to the school. The names were then selected by lot and the candidates admitted in order of their selection as places for them came open. The Provincial Farm Commission recommended that twenty to thirty students be accepted at first with the number to increase with the amount of work to be done on the facilities. The students were to receive free room and board and fifty dollars upon satisfactory completion of their year.<sup>20</sup>

The school's opening, already delayed by a dispute over its location, was spoiled by a public scandal involving the faculty during the summer of 1874. In brief, a dispute resulted from a three-cornered battle for control of the school. The provincial government insisted on making staff appointments despite the opposition of the first principal, Henry McCandless, who previously had been Professor of Agriculture at Cornell University. One of the government's appointees was the Reverend Clarke, the first rector. Clarke later admitted he had hoped to have been named principal. Clarke and McCandless fell out with one another almost immediately. Clarke complained of the principal's "tyranny and incapacity" as an administrator. McCandless attempted to undercut Clarke's position by seeking advice about the purchase of supplies from the farm foreman James Stirton. The principal later claimed Clarke was inexperienced in these matters. On top of this failing, he said Clarke had been playing cards with the students. For their part, twenty-six of the thirty-four students at the school that first summer wrote to Premier Oliver Mowat threatening to quit the school unless McCandless was discharged. Clarke resigned his post in June 1874 and McCandless resigned upon Mowat's request in July. In December a public inquiry into the affair was opened by a committee headed by David Christie. Charges and countercharges were levelled by the main combatants including the claim that McCandless was involved in sexual misconduct on the school's premises. The founders' gingerly attempt to gain a foothold in Ontario for formal agricultural education suffered a setback as the scandal made the school an object of ridicule across the province.<sup>21</sup>

It is a measure of the degree of unrest at the institution that Colonel

Thomas Scoble, Inspector of Asylums and Prisons, was placed in charge until the new rector, William Johnston, took over as acting principal on 5 August 1874. Charles Roberts, the new principal and a gold medallist at the Royal Agricultural College, Cirencester, England arrived in the fall of 1874. However he spent much of the following winter in England tending to personal business. He returned to Guelph in March 1875 but later that spring, according to T.H. Mason, a student that year, Roberts experienced a nervous breakdown and attempted to drown himself by jumping from a bridge into the Speed River. He survived, and after recovering from this injuries returned to England. Johnston replaced him in early 1876. Johnston was just twenty-seven years of age when he became principal. In 1874 he had graduated from the University of Toronto with the gold medal in metaphysics. He had no training in the application of science to agriculture or any practical farm experience, but he had taught school before becoming the OSA rector.<sup>22</sup>

During Johnston's tenure (1876-1879), the school enjoyed its first extended period of stability. In that time, he attempted to implement the guidelines set down by the Provincial Farm Commission, but with so little experience in agricultural matters, he spent much of his time studying agricultural education in other countries. He concluded that Ontario could borrow little. The province had to come up with a programme of agricultural education suited to its particular social and economic conditions.<sup>23</sup>

Johnston thought that the 1860s began a new stage in Ontario's agricultural development which was characterized by greatly increased competition for world

food markets. At the same time, the natural resource Ontario needed to meet the competition -- available, fertile farmland -- had declined. The cost of manual labour in the province remained high. In Europe, which with the United States was Ontario's main competition, the three basic elements of farming -- capital, technical knowledge, and manual labour -- were distributed between wealthy landed aristocracies, the estate or farm managers trained in scientific agriculture whom they employed, and the peasant labourers or tenant farmers the manager directed. These arrangements gave the Europeans a competitive advantage over Ontario in the world agricultural economy. In a new and developing country Johnston believed a person had early in life to become "a producer" capable of participation in all aspects of the productive process. And Ontario agriculture relied for success almost exclusively on the well-informed efficient individual farmer. "To compete successfully," Johnston said, "as proprietors of small holdings possessing small capital, against cheap labour used by large capital, is now requiring and will henceforth require all the energy, knowledge and skill of our agricultural producers."<sup>24</sup>

Johnston thought an agricultural education for Ontarians had to address the three main elements in farming. Farming was a business and the farmer "a working capitalist"; it was also a "trade" and an "applied science." To conduct the business of farming a young man needed a knowledge of arithmetic, bookkeeping, business forms, land measurement, property law, economics, and the ability to write and speak well.<sup>25</sup> Mastery of the "trade" of farming required an "apprenticeship" in the barn and field. A young farmer's "apprenticeship" began on his father's farm and could not simply be acquired from a higher education in

agriculture, although field work did have to share time on the curriculum equally with the third element in agriculture -- the science of farming. Johnston said the science of agriculture had two valid and complementary components. "A science in one sense," he explained, "and that the most important one, is a collection of the principles and laws that are deduced from the facts of observation. And those principles and laws again become the rules of practice. If therefore we can gather together the rules of practice of the best farmers, and from them deduce any laws, we will be making what may in one sense be called a science of agriculture." He also called this science "the theory of practical husbandry." The science of agriculture also borrowed information from the pure sciences directly related to farming. Among these Johnston included geology, chemistry, botany, entomology, zoology, and veterinary science. A thorough course in scientific farming embraced both components but not every student should be compelled to study both. A grounding in the first and most important one -- "the science of practical husbandry" -- would be sufficient for those who would not take the time to go further. By 1879 Johnston had organized the various elements in the curriculum into a two-year programme divided between the "Course of Study" which offered lectures in the business and science of agriculture and the "Course of Apprenticeship" which taught the trade of farming through supervised labour on the farm. On average the students spent five hours per day in each area during the school year.<sup>26</sup>

"The watchword of agricultural progress in Ontario to-day," said Johnston, "should be educate! educate! experiment! experiment!" An education in scientific agriculture went hand-in-hand with experimental work. "If it be true," Johnston

explained, ". . . that Agriculture is a science, then the subject matter must be the facts not only of observation but experiment."<sup>27</sup> Johnston believed that the necessary agricultural experiments were so problematic, even for the progressive farmer, that government institutions such as the experimental farm at the agricultural school were required to conduct them: "In older countries the work is undertaken by the richer land-owners as well as by the State, but on this side of the Atlantic that class of the community does not exist, and if there be any value to be obtained by long continued, extensive, and expensive experiments in agriculture, that can only be realized by State action . . . . And if we are to keep pace with other countries in our competition on the world's markets we must experiment . . . ." Johnston thought that Ontario's demand for experimental work was great enough to warrant the creation of eight experimental "stations" across the province in addition to the one at Guelph.<sup>28</sup>

The fact that experimental work, in Johnston's view, was the motor of agricultural science and education, helps explain the independent and indeed dominant place enjoyed by his principal colleague, William Brown, who came on staff in 1876 as Professor of Agriculture and Farm Superintendent. The Provincial Farm Commission had recommended that the school's principal ought to be the officer in charge of both classroom instruction and field work. Johnston conceded that the pressing need to put the farm and other facilities in working order, coupled with his own inexperience in agricultural matters, made Brown, in effect, the senior official at the institution. Brown ended up reporting directly to the provincial Commissioner of Agriculture, not to Johnston.<sup>29</sup>

Professor Brown brought to the school and farm extensive practical experience in agriculture obtained in his native Scotland. Before coming to Ontario in 1871 to take up farming near Orillia, he had managed a number of Scottish landed estates. He was a member of the Highland and Agricultural Society of Scotland. In 1873 his prize essay on agricultural fences was published in the society's transactions. Brown's formal education in Scotland was limited to the parochial schools, which he left at the age of seventeen.<sup>30</sup>

Brown allotted natural science a subordinate role in agricultural improvement. Science, he said, was "the handmaiden of practice." Like Johnston, he worked instead toward what he termed "the science of our agricultural practice." This was "not the practice that is supposed to have been taught by science, for no one could possibly become a farmer in practice by applying any amount of scientific knowledge. It is as true in ours as in other professions, that scientific men learn from practical farmers the very sciences which they themselves practice -- in no other way could science be applied to farm practice, I think." Brown meant that the scientist could only assist the farmer once the latter had isolated the practical problems he needed to solve and found that he alone could not solve them through long experience or experiments he could design to improve his understanding.<sup>31</sup> However, Brown rarely consulted scientific experts in his experimental work: "As yet the world's experience has failed to shew," he argued, "that the practical farmer needs more than a familiar acquaintance with the Principles of the sciences that affect his business. It is an old exploded notion that a farmer should be a practical Chemist and Botanist . . . . What I desire to submit is that, in order to produce a plant and animal to the best



advantage it is simply unnecessary to take them to pieces as the expert alone can do after a lifetime's work. Our Chemistry and Botany should be therefore but an appreciative peep into how they affect the farmer in producing the particular plant and animal, under conditions." Brown preferred other authorities. In his cattle-feeding experiments, for example, he claimed that "the only chemist we consulted . . . was Professor 'Cattle Stomach', whose practical judgement and truthfulness have never been doubted by anyone."<sup>32</sup>

Brown responded to Ontario's agricultural priorities in the 1870s by making the problems of mixed farming the basis of the farm's experimental programme. He said that "we find mixed farming to be the most difficult, the hardest physically, the deepest mentally, and the most reliable of any other system." The required transformation of Ontario farming could only be accomplished when farmers obtained from proper experiments accurate knowledge of the best means of deploying new equipment and techniques to produce new and better crops and other commodities. "We are on the eve of a new system of farming," Brown said in 1878, "in which every item of intelligence becomes invaluable."<sup>33</sup> All the same, Brown did not expect the experiments he conducted on the farm to make any major breakthroughs in farming practice. He intended to start out with fairly simple tests of various and sometimes rival farming methods to produce results which farmers could apply quickly and profitably. His deliberately cautious approach was meant to avoid the exaggerated hopes some agricultural improvers had raised in the past. In probing "the unknown habits of many of our farm crops," he was prepared to accept "growing experience as a guide" and, when confounded by the results of his research, "to try again, and wait, and vary, and

labour. . . ."<sup>34</sup>

Between 1876 and 1887 Brown conducted two hundred types of experiments into an extensive range of questions raised in mixed agriculture: the impact of manure, various fertilizers, and mixtures of fertilizers on particular crops; the relationship between varieties of feed, mixtures of feed, and cooked and uncooked feed on the development of different livestock; the results of planting crops at various distances, at different depths, and by machine drilling and broadcast sowing; the utility of planting crops in differing rotational sequences; and the quality of milk, cheese, cream, and butter from various breeds of cattle, and when fed different kinds of fodder. At the outset of this programme in 1876, Brown thought it would take about five years to establish the experimental farm as a "model" of approved agriculture for Ontario farmers. Between 1876 and 1878, the preliminary work involved in upgrading the existing Stone farm and in placing new land under the plough was undertaken: stumps and stones were removed; water was drained and fencing installed; the farm was stocked (Brown went to Britain to purchase purebred livestock); shade and ornamental trees were planted; and some "initiatory experiments" were carried out to familiarize the professor with the soil, climate, and general character of what could be grown on the farm.<sup>35</sup>

By 1880 Brown was satisfied with the progress which he thought had been made. "The problem of agricultural education," he said, "is being gradually and surely unfolded in our case." In the previous year, he had announced that his experimental work could "now . . . enter upon an advanced stage. . . ." To facilitate this work and to take the farm's experimental methods more directly to

Ontario farmers, Brown supported the formation in 1879 of the Ontario Agricultural and Experimental Union. The members of the union (there were 120 in 1880) were school officials, students, and former students who wanted to maintain contact with each other for the purpose of exchanging current information on progressive farming. They were also expected to conduct agricultural experiments and to report their findings to the union. The union's constitution made provision for members to receive five samples of seed every year from the experimental farm for these experiments. Brown was president of the union in 1880.<sup>36</sup>

William Johnston, too, was pleased by 1879 with the early development of the school and farm. He had worked diligently to communicate the institution's programme across rural Ontario in addresses to farmers and an extensive personal correspondence, as well as through preparation and distribution of circulars and annual reports. The results of his efforts can be seen in the school's encouraging enrolment figures. In 1874 thirty-four students had attended classes. By 1879 total attendance had reached 162.<sup>37</sup> Considerable public interest was also being shown in the institution. The number of visitors to the campus was about 9000 for 1879 alone. Several hundred of them were members of the Dominion Grange, the largest farmers' association. At its annual meeting in Guelph in 1879 the Grange passed a resolution which endorsed the work of the school and farm. Rising enrolment, evidence of public acceptance, and the progress of Brown's department allowed Johnston to report in 1879 that the institution's foundation had been laid; the school and farm were "at the close of the preparatory stage."<sup>38</sup>

The work of Johnston and Brown was applauded by the Ontario government. Commissioner of Agriculture S.C. Wood declared the school and farm "firmly established" in his report for 1878. When Johnston resigned as president in 1879, Wood praised the "indomitable efforts" he had made in bringing the institution "from an original state of chaos to its present flourishing condition." Although he was naturally pleased with signs of growing public support for the school and farm, Wood thought that not enough had been done to demonstrate the institution's value.<sup>39</sup> The Ontario Agricultural Commission, which Wood proposed and chaired, helped serve this purpose. Brown was appointed one of the seventeen members of the commission; he and Johnston were called as expert witnesses; and the commission's warm endorsement of the school and farm was one of the principal features of its report. The provincial government was also sufficiently satisfied with the progress of the school and farm by 1880 to advertize them prominently in promotional literature designed to attract British farm immigrants to Ontario.<sup>40</sup>

A further expression of confidence in the institution also came in 1880 when the provincial government passed "An Act Respecting the Agricultural College." The act put the institution on a firm legislative basis for the first time and enhanced its pretensions by designating it a "college." The status of the renamed Ontario Agricultural College and Experimental Farm (OAC) as the Ontario government's principal, if yet modest, educational and technical arm in agricultural development work was affirmed by the new legislation. The government reserved the right to set the curriculum, hire the staff, and establish admission standards as well as general administrative regulations. By 1880 the

provincial government was spending more to maintain the college and farm than it was on all other agricultural programmes combined. It had given OAC the task of addressing the problems which beset farming in Ontario in the 1860s and 1870s with practical instruction and experiment in scientific agriculture. The officers of the institution thus saw a unique and central role for OAC in rural Ontario's future.<sup>41</sup>

In the intensely practical orientation of OAC, William Brown and William Johnston thought Ontario had the makings of an institution for agricultural education and experiment which would eventually be second to none.<sup>42</sup> The province finally not only had the means to re-enter the path of improvement, but also to enjoy a leading position in future agricultural progress. This formula for rural uplift at OAC might be labelled Ontario agrarian nationalism. This concept (which will be explored more fully in Part Two) posited that the college education in improved agriculture was the bulwark of the agrarian economy and values deemed essential to the regional leadership Ontario must provide to permit Canada to achieve greatness in the British Empire and wider world. Principal Johnston explained that the college had been founded in 1874 because it was recognized "that Canada depended, and would be obliged to depend, largely, if not exclusively, on her raw produce for her national wealth. And amongst the various forms of raw material none were so valuable as those included under the head of agricultural produce. To observant statesmen it was plain that the readiest manner of increasing the national wealth was by increasing the quantity and quality of that produce."<sup>43</sup>

The struggle to compel nature to yield her abundance had intensified, however, because, as Johnston pointed out to the Ontario Agricultural Commission in 1880, the province's farmers had to compete more strenuously in international markets.<sup>44</sup> This circumstance evoked military analogies. Brown wrote that Ontario farmers had to be equipped by experimental agriculture for "the great battle of the commercial world." Johnston hoped that OAC could assemble what he described as "an army" of hundreds of agricultural experimentalists from across the province.<sup>45</sup> The students trained on Brown's experimental farm and the members of the Ontario Agricultural and Experimental Union were the obvious nucleus of that fighting force. Members of the union along with the general student body were urged by college spokesmen to submit to tighter mental and moral discipline in order to succeed in "the world's battle." In keeping with the martial associations of scientific agriculture, the college students formed the Ontario Field Battery of Artillery in 1878. Seventy-four students were members of the battery in that year. Captain Walter Clarke, a veteran of the Crimean War and a former Sergeant-Major in the Royal Artillery, acted as the college instructor in artillery and rifle drill as well as physical exercise. In 1880 the artillery unit won the Governor General's prize for efficiency at the Dominion Artillery Association competition. Johnston was pleased that the formation of the battery had contributed to "an esprit de corps amongst the mass of the students."<sup>46</sup>

The idea that farming was much like a military operation and that agricultural science and technology were the farmer's sword and buckler pervaded thinking about agricultural improvement in Ontario in the late nineteenth century.

Uncleared and undrained land, foul weather, insect pests, weeds, and plant and animal diseases made work on a farm a struggle to place and keep the land under control. With this in mind, J.C. Rykert, the President of the Agricultural and Arts Association of Ontario, said in 1880 that farmers had to be "armed with knowledge," which he thought was preferably acquired at OAC.<sup>47</sup> The Canada Farmer said they also had to be expert in wielding their other "weapons of war" -- improved farm implements. To win the "battle" for an improved farm, said the journal, "the farmer needs many of the qualities of the true soldier." Another editorialist said farming demanded the same careful planning and single-mindedness the Prussian commanders demonstrated in their victory over the French in 1870. "It is true," he allowed, "that peculiarities of weather may necessitate some modification of plans as the season moves on, just as unlooked for contingencies may lead the general to modify the details of the campaign, but in its essential features the one plan will be adhered to throughout." And L.E. Shipley, who was also a president of the Agricultural Association, paraphrased Admiral Nelson's famous remark at Trafalgar to say that in the work of agricultural improvement, "Canada expects every man to do his duty!"<sup>48</sup>

During the late nineteenth century, the Ontario Agricultural College and Experimental Farm aspired to be the command post for the army of Ontario farmers bearing their weapons of machinery and practical "scientific" knowledge. College men wanted to mobilize rural Ontario to subdue nature and win for farmers a more favourable social and economic standing. In his final report to the provincial government as president of the institution in 1879 Johnston elaborated upon the work which lay before it:

The majority of the Institution has only been reached; the real work of life lies ever onward. That work is to lead the van in all the education, literary and technical, of the future producers from the soil; to assist them in training their minds, beautifying their homes, raising their social status, ennobling their profession and enriching their country by becoming so thoroughly qualified in their business as greatly to increase the amount of its agricultural produce. It is so to experiment on the different varieties of seeds, plants, trees, shrubs, soils, manures, and modes of cultivation; the various breeds and crosses of cattle, sheep, swine, and poultry; that to all the farmers of the Province the best of the raw materials that the world can produce, and the latest modes of handling them that it uses, may always be placed within their reach, that Ontario may ever occupy a prominent place in the forefront of the march of agricultural improvement.<sup>49</sup>



#### IV

### The Limits of Practical Agriculture

During the 1880s the hopes of the late 1870s for practical agriculture at OAC met with frustration and disappointment. As this chapter points out, Professor Brown's findings on the experimental farm were unable to set the pace for the "march of improvement." A provincial "army" of experimentalists did not assemble under the OAC standard. The Ontario Agricultural and Experimental Union was little more than a debating society (lively as those debates often were) for the small circle of college officials and alumni. Much of OAC's prestige and resources was invested in Brown's work. As it faltered in the 1880s, and Brown himself openly raised questions about the value of an OAC education, enrolment dropped sharply, student interest and discipline became major concerns, and a public feud broke out between Brown and Johnston's successor as college president, James Mills, over solutions to these problems. With the campus in considerable turmoil in the 1880s, OAC was in no position to fulfil the social, economic, and patriotic goals of Ontario agrarian nationalism. Serious economic difficulties in rural Ontario in the 1880s and early 1890s, and the political unrest which resulted from them, underlined the college's inability to renew provincial agriculture with technical rather than political means. The practical approach to the problem of agricultural knowledge had by 1890 been unable to help ease the "deep doubts" about Canada's future which "hung over the early 1890s like a pall."<sup>1</sup>

In 1879 Professor Brown announced, with some foresight, that he was ready to enter "an advanced stage" of experimentation in which a practical agriculturalist, such as he was, "may ere long get beyond his depth." Three years later this phase of the experimental work had proceeded far enough to permit "a critical review" of the results obtained since 1876.<sup>2</sup> Brown had never predicted that his experimental work would arrive at extraordinary findings. He had actually gone out of his way to avoid arousing the kind of exaggerated hope which he thought bred cynicism about experimental agriculture. The purpose of experimentation, he once said, "is to verify more than to discover."<sup>3</sup> Yet the overall results of his work, while useful, still disappointed him. Too many of his findings appeared decidedly pedestrian and others raised more questions than they settled. Nothing like a science of practical agriculture, in the sense he and Johnston gave the term, had emerged and no clear insight into the connection between agriculture and the natural sciences had been obtained. In 1882, defiant but somewhat weary and disheartened, Brown asked a few telling questions:

The Science of our Agricultural practice - where is it? Are we doing more than the good average farmer after all? Understand, we are speaking of more than ordinary practical experience, and more than pure practice in crop-growing, in which, of itself, we think, our lessons are good; but wherein are we capable of tracing all the scientific relations of such practice as already indicated?

I have taken many young men over our fields every year, in practical illustration of the lecture room statements, but how much could I say positively in regard to the existing co-partnerships of our allied sciences with the agency under foot - called soil! Have manures

been assistants, or substitutes; or among themselves, have they been or are they now competitors of food for crops; how much injurious matter has been dissipated by the action of drainage, certain fertilizers, and cultivation, and to what extent did chemical condition indicate productive powers - active and dormant? These, and others, have been to me, as they are still to many men, dark things, waiting, it may be, a more able and subtle exponent than The Ontario Experimental Farm.<sup>4</sup>

Brown's frustration reflected the limits of the practical approach to farm improvement, which had been favoured by leading agricultural improvers since the 1830s, and intensified in the late 1860s by the founders of OAC in their search for solutions to Ontario's rural problems through experimental work in mixed farming. Brown's work confirmed that intelligent practical farming could often produce bountiful yields. He was unable, however, to guarantee these results or account for them adequately. One of the experimental plots which flourished in 1882 had done unexpectedly poorly in the 1880 and 1881 phases of the crop rotation he had devised for it. "An examination of the field at this stage," he said, "showed nothing to the eye as needed by drainage or manuring."<sup>5</sup> Despite the limitations of such direct and controlled experimental observations Brown would not concede that the natural sciences might be able to extend his power of observation much for practical purposes. He stated the problem in a comment on his experiments with mixtures of cattle feed:

Most foods are better in combination than alone, and the combinations should be so arranged as to leave little or no waste. These are facts

from the experience of many. The kinds and proportions of food to suit each individual animal exactly, so that it shall just receive the best nutritive ratio, are not so easily struck as may appear to some. If we take the corn, peas, oats, hay, turnips, mangolds, bran, with linseed cake or cottonseed cake, and look at them by their chemical standing, it becomes a nice mathematical lesson to hit the life or heat forming materials that should accompany the flesh forming materials, so as to secure this nutritive ratio. All the foods named must be chemically balanced, and an agreement made with practice, for no amount of scientific knowledge can square off any animal's meals without a copartnership with the practical feeder.<sup>6</sup>

Regardless of the technical imprecision of the diets he concocted for the cattle, Brown was satisfied with the growth of the animals. And although he recognized that he had to develop his analytical skills to understand his findings better, there were still enough practical successes (and doubts about science) to hold him to the practical priorities he had set down in the mid-1870s. Brown remained pleased in 1884 that his experiments "are not of that character that go in search of the unknown above or below us: they are part of our everyday handling, and therefore the more attractive."<sup>7</sup>

Although the science instructors at OAC had to concur with Brown's assessment of the scant contribution the sciences had made to his experimental work, they were much more optimistic about the long-term contribution science could make. In their view the most problematic sphere of agricultural research -- the invisible or microscopic realm -- was accessible only to science.<sup>8</sup> It made little sense to spurn scientific help just as the boundaries of practical

knowledge were being reached. James Panton, the Professor of Natural History and Geology, pointed out that chemical knowledge was related to Professor Brown's feeding experiments. "If this is the case," he asked, "is it not of intense importance that a farmer has some knowledge of the chemical composition of foods, etc., and the part they play in the animal economy . . . . How important, then, that more science should be known in this direction, that feeding may no longer be carried on in a sort of haphazard manner. If the laws which underlie scientific feeding were better known, and the chemical composition of plants understood, much waste would certainly be prevented, and a knowledge of science be found to be of the utmost practical importance."<sup>9</sup>

Panton did have to acknowledge how hard it was to combine the scientific and practical approaches to experimental problems.<sup>10</sup> The challenge for the science staff at OAC was not made any easier by the low priority placed on scientific work in the guidelines established for the college by the Provincial Farm Commission in 1873. The college had actually been able to attract distinguished graduates in science from the University of Toronto to serve on the teaching staff, but it had not been successful in keeping them for long. Three men taught chemistry between 1875 and 1879. Johnston reported that they left because they were unhappy with the low salary paid them. In 1879 the Professor of Chemistry earned a thousand dollars per year while Johnston and the Professor of Agriculture earned twice that. The problem was made worse by the fact that promising university graduates in the sciences had to adapt their education to agricultural needs because they could not prepare for a career in agricultural science as such. It appears from one of Johnston's reports that in coming to the

college they faced the challenge of learning the science of agriculture as well as teaching it.<sup>11</sup> In these circumstances the inadequate facilities and equipment they had for classroom instruction and their own experiments added to their complaints. "The science of Biology," wrote the professor in that subject in 1883, "has now reached such a state of advancement that it is only with a thoroughly equipped laboratory, with proper instruments, and with ample literature, that one can expect to make satisfactory investigations. The Biological department of the Ontario Agricultural College has no specially appointed laboratory, no instruments, microscopes, etc., by which either instruction may be communicated to the students, or investigations carried on by the Professor, and the Biological literature, though certain valuable works have been added in the last two years, is very scant."<sup>12</sup>

The continuing uncertainties of even intelligent farm practice and the still remote practical benefits of science in agriculture exposed OAC's intellectual and institutional quandary. By the mid-1880s Brown's very slow and modest progress with the practical approach to the "science" of agriculture had raised serious public doubts about whether the college could teach more about farming than, as he put it, the "good average farmer." He readily acknowledged that "Many consider they are as able, and better able to educate in farming, as any agricultural college can: true, but do they, and what of the science?"<sup>13</sup> As soon, of course, as he implied that the college alone could teach the science of farming, the inconclusive results of his experiments and his admitted ignorance of the natural sciences and resistance to their introduction in experimental work undermined his claim. John Campbell, one of Brown's former students, had put

the matter bluntly in a letter to the Globe in 1878:

If the wants and wishes of farmers' sons are to be consulted, and if our Agricultural College is ever going to be a success, the teaching of practical work at the College should be confined within narrow limits, and the students should receive a thorough knowledge of the natural sciences, with some other studies added. The opinion held by some that farmers' sons go there for the purpose of learning farm work is an idea too contemptible to be entertained for a moment. The folly of attempting to teach what can be learned in a much shorter time on any first class farm in the country has been a stumbling block in the road ever since the institution was opened.<sup>14</sup>

For Campbell, the social promise of improved agriculture could not be fulfilled through the meagre curriculum at Guelph. Although the exposure to scientific farming which the college had given did lead Campbell and a few other OAC students to inquire about further study in the subject at University College, they learned that to qualify for entrance to the university they required additional preparatory instruction which OAC did not provide and they had no time to acquire. "We left the Guelph institution," said Campbell, "without obtaining the object for which we entered it, with the bitter reflection that in this land of schools and colleges, this land that boasts of its educational system as well as its advancement in the agricultural art, there was not a single institution, public or private, where a young man about to engage in agricultural or horticultural pursuits, could obtain an education to qualify him for his business in the same way as a professional man is educated for his."<sup>15</sup>

In the 1880s, James Mills, who became William Johnston's successor as the college president in October 1879, worked to put the institution's social and intellectual *raison d'être* beyond dispute. Unlike Johnston, Mills combined the requisite Ontario farm experience with impressive educational and administrative qualifications. He was born in 1840 near Bond Head, Upper Canada and raised on a farm. Mills came to OAC after graduating from Victoria College in 1868 where his highest marks were in the classics and he received a gold medal for general proficiency. His teaching experience was gained at Stanstead Academy in Quebec and Cobourg Collegiate Institute between 1868 and 1872 and in six subsequent years as Principal of Brantford Collegiate Institute. The collegiate was considered one of the best schools in the province during Mills's tenure as principal. It was especially noted for the high number of outstanding university graduates who had received a secondary education there.<sup>16</sup>

From the outset at OAC Mills articulated an ambitious social purpose for the college which was to be achieved through improved academic standards. In the early 1880s he argued that the college could best facilitate the transition to scientific agriculture by attracting young men to progressive farming "for the sake of the social status it gives them" rather than for any immediate or large financial gain. Mills thought this conception of agriculture had ancient roots in Roman authors Virgil and Horace who "prided themselves on being farmers, and loved to talk about their farms and their flocks." And it still held sway in Britain where the aristocracy "scorn the very idea of engaging in law, medicine, or any kind of trade; but they are all willing to be classed among the agriculturalists of the country." Even the Queen herself, by virtue of her farms, "is pleased to be



ranked among those who till the soil of her vast dominions." Mills concluded that there was no reason for farmers to feel embarrassed about their occupation even though its social status was well below that of law, medicine, and business in the eyes of "some thoughtless people." Citing England again as the proper example, he said, "many of the tradespeople and professional men in the large cities . . . are working late and early and saving money to buy land and move out into the country, in the hope that thereby they may gain social prestige and be admitted into a better class of society." The only reason Canadian farming had not yet risen in the same fashion was the farmers' need of "more taste and more education." Education was the solution to rural social problems. "In every community," said Mills, "the educated classes, be they few or many, are always the ruling classes; and as long as the lawyers, doctors, and other professional men in this country, are better educated than farmers, so long will they rule over farmers even if the latter were relatively twice as numerous as they now are; so long will the farmers be hewers of wood and carriers of water for their professional neighbors." Farming, which was the most important profession because agriculture was the economic foundation of society, required as much formal education as any other profession.<sup>17</sup>

Mills asked his students for a commitment to rural life and to life-long study of scientific agriculture for the honour of being a progressive farmer and in order eventually to reap the full social, economic, and political benefit of their efforts. Until that time farming would bring the limited financial returns and require the hard physical work which were its chief social liabilities. The college, he said, had to validate "the belief that manual labour is not at all incompatible with

intelligence, refinement, and respectability - that a farmer may be a well-informed gentleman of the highest type." Farming had intrinsic virtues which were the basis of its claim to social equality with the professions if not preeminence. Since these virtues may not have been obvious to everyone, Mills thought OAC had to instill "the belief that there is no more honourable occupation than that of the agriculturalist; that socially, politically, even financially, there are few to compare with it; and that in the matter of independence, contentment, and real happiness, there is scarcely one equal to it."<sup>18</sup> Mills did not intend to alter the college's practical priorities; he simply insisted they were not its only objectives: "Our primary aim is to make good practical farmers; but we are not forgetful of the fact that it is no less important to make good citizens - to add some of the graces and refining influences of a broader culture, and thereby fit our students for filling positions of trust, influence, and respectability in Church and State."<sup>19</sup>

Mills's principal recommendations to the provincial government were designed to strengthen the college wing of the institution. The subjects on the curriculum which he emphasized -- English literature and composition and the sciences -- were designed to make OAC students gentlemen as well as practical and scientific farmers. He told the Ontario Agricultural Commission that OAC needed a museum to house entomological and geological specimens used in classroom demonstrations, a library, and botany and chemistry laboratories equipped "with the best apparatus that money can secure." "Chemistry is the foundation of scientific agriculture," Mills said, "and without it no real progress can be made."<sup>20</sup> And, as Mills explained, the rationalism at the core of

scientific analysis of nature was also a source of rural social progress. "The study of the relations of the plant, the soil, and the animal to each other, and to his profession, under the heads of Botany, Chemistry etc.," said Mills of the OAC student, "not only shows him the reasons for the rules of the best farm practice, and enables him afterwards to discover other such rules, but likewise forms in him habits of reasoning closely, systematically and correctly, which cannot fail in after life to make him a better citizen."<sup>21</sup> Professor Panton maintained that science provided something far more important than "a few facts" which would probably be rendered obsolete by the advance of knowledge. Science gave the student a true education. "Agricultural knowledge," he said, "is not an agricultural education. The former is a cultivation of some facts; the latter is a disciplined mind capable of grasping with problems which are usually met with in farm life." He told a meeting of the Agricultural and Experimental Union that students thus disciplined by science embarked on life with greater prospects than those with only a rudimentary practical preparation for farming:

In the world's broad field of battle,  
 In the bivouac of life,  
 Be not like dumb, driven cattle!  
 Be a hero in the strife!<sup>22</sup>

Mills and Panton's emphasis on the pivotal role of science and English literature and composition was not shared by William Brown. Brown's ambitions for the students were quite modest by comparison. He looked forward to them

becoming skilful, efficient farmers or farm managers. He seemed to cast doubt on the very possibility and necessity of significant social uplift through OAC. The incoming students, Brown said, "are all the men they will ever be as regards aims and independent feelings . . . ." Most of them had come to the college "to learn agriculture - direct practical and scientific agriculture, and nothing else." They wanted instruction in what they "can see and feel as of immediate use" rather than the "three R's" and the sciences.<sup>23</sup> Brown thought that those who insisted on a larger commitment to science -- and the allusion cannot be mistaken for a reference to anyone but Mills -- were being unfaithful to the aims of the institution's founders and unfair to the students.<sup>24</sup>

Brown's resignation from the OAC staff in July 1888 put an end to what Mills later described as the "endless friction" between the college and farm during the mid-1880s.<sup>25</sup> However, the open dissension at the institution, the failure of Mills and Brown to find a suitable formula for agricultural education, the inability to wed science and practice in the experimental fields, and Brown's candid musing about OAC's *raison d'être* exacted a heavy toll. The decline in student enrolment in the 1880s and increased concern about student misbehaviour and apathy indicate that the college and farm could neither yet command broad public support nor intellectual authority.

The number of students on the college roll rose from 146 to 217 between 1878 and 1881; however, it fell steadily each year thereafter until the total reached 110 in 1887 -- the lowest number during the 1880s. The percentage of the student body from Ontario declined as well from 84 per cent in 1878 to the lowest

point for the 1880s -- 61 per cent in 1885.<sup>26</sup> This problem figured prominently in the discussions at meetings of the Agricultural and Experimental Union in the mid-1880s. OAC graduate C.H. Major told the union that the main cause of the college and farm's uncertain status in the province was that the curriculum was "too theoretical" for "practical Ontario." "It seems to me," he added, "that it is more desirable for a graduate of this place to be able to take his place on the waggon and load hay, than for him to be obliged to tramp hay in the mow while he shoots off to his comrade about this crop containing probably somewhere in the region of 76.19 per cent of H<sub>2</sub>O, and only 23.81 per cent of solid matter."<sup>27</sup> Professor Panton, on the other hand, complained before the union of the "indifference" and "indolence" of "some of our exceedingly practical students who imagine that unless every lecture can be shown to directly bear on the farm the time is lost . . . ." <sup>28</sup>

Major thought a serious mistake had been made in turning the college gymnasium over to the chemistry department for scientific work. He said that after a hard day of study the students needed a diversion from intellectual activity. Without this outlet there was an "endless row" in the college residence at the end of each day -- a commotion interrupted only by a brief truce when the lights were turned off. Dormitory doors and furniture were routinely broken in student pranks and horseplay. Another OAC alumnus remembered the time during his student days in the 1890s when the boys "executed" a sheep by hanging it from the flagstaff of the main college building.<sup>29</sup> There is evidence that on occasion staff fared only slightly better than sheep. Student harassment of the residence master and mathematics instructor, E.L. Hunt, resulted in a provincial royal

commission of inquiry. The affair began in December 1883 when the windows in Hunt's quarters were broken by ink bottles thrown through them; it reached the climax a month later when five masked students broke into his room in the dead of night intending to gag, tie, and then dunk him under the water tap outside his door. Hunt's screams while being dragged from bed scattered the conspirators before the deed could be done. As if this outrage was not enough to tarnish the institution, it was discovered that two of the guilty students lied under oath to the commissioners to protect the others.<sup>30</sup> Hunt's troubles did not end with this incident. In 1889 a formal complaint about his "unsatisfactory and inefficient" teaching was lodged with the Minister of Agriculture in a petition signed by about fifty students. Hunt survived the challenge but left OAC anyway in November 1892 to prepare for the ministry at Knox College in Toronto. It is not surprising that Mills found managing the OAC residence "the most thankless and annoying business in which a man ever engaged." Friends of the college had to admit that certain "rascals" among the students had left "a stench in the nostrils of respectable and respecting people" and that "the idea had gone abroad that this institution was an asylum for hard seeds and riffraff, instead of a school for scientific education in agriculture."<sup>31</sup>

Although Mills was not oblivious to defects in the college and farm, he also drew attention to rural economic difficulties as a possible reason for disappointing enrolment figures in the 1880s. The market value of all field crops in the province fell from an average annual total of \$16 per acre between 1882 and 1886 to \$14.90 per acre from 1887 to 1891. The value of all field crops tumbled to \$13.40 per acre in 1887 — the least remunerative year for farming between 1882

and 1891.<sup>32</sup> Mills acknowledged in 1887 that low prices for farm products had brought farmers "hard times." "The trouble is real and serious," he wrote. In rural Ontario, "a feeling of unrest and dissatisfaction is abroad."<sup>33</sup> Two years later in Lambton County discontent found expression in creation of the first Canadian lodge of the Patrons of Industry -- a farmer's organization with a strong base in neighbouring Michigan. By 1893 the Ontario Patrons had about 100,000 members in 2000 lodges. The continuing decline of farm product prices in the early 1890s helps account for their initial success. The market value of all field crops fell in each year after the high point for the 1890s of \$16.70 per acre was reached in 1891 until it hit the low point for the decade -- \$10.44 in 1896. "Our aim," said Patron Grand President C.A. Mallory, "has been to discover as far as possible the causes of the depression in the agricultural interests of this country." In 1893 the Patrons pursued their reform course into provincial politics and elected seventeen candidates to the Legislative Assembly in the June election.<sup>34</sup>

In 1888 Mills was neither entirely sure of what to do about the economic distress nor of the causes of the OAC enrolment problem. About the former, he asked, "What shall we do? What can we do?" Of low college enrolment, he said, "Is it because of the hard times? because farmers think it does not pay to educate boys for the farm? because we are not doing our work properly? or because the farmers have mistaken notions of what our work really is? I confess my inability to give a satisfactory answer."<sup>35</sup>

Mills's exasperation sums up the dispiriting inadequacy of agricultural improvement programmes fifty years or so after the first sustained efforts in such

work had been launched in Ontario. The most ambitious provincial commitment to agricultural improvement, the college at Guelph, was floundering on problems which had stymied the earliest improvers in the 1830s and 1840s. By the time of William Brown's less than triumphant departure from OAC in 1888, the college, which was expected to be in the "van" of the "march" of rural progress, was in fact closer to retreat and even disarray; and agriculture, the supposed foundation of human society and well-being, was, in Ontario, falling far short of accomplishing its mission. The "primeval curse" had not been lifted; Eden had not been regained.

The intellectual problems of the 1880s, which assailed OAC with self-doubt and discouragement, had counterparts in other major areas of Canadian life. A deepening sense of anxiety about certain tendencies in Canadian social, moral, material, and national development was generally experienced. In the late 1880s and the 1890s, however, as Part Two demonstrates, leading figures in several walks of life, including the provincial government officials and teaching staff who administered OAC, found in popular forms of philosophical idealism (the by then dominant philosophical school in Canadian intellectual circles) a powerful source of inspiration to continue attacking them.



## Notes

### Part One

#### Practical Agriculture

##### Abbreviations

<u>ACJ</u>	<u>The Agriculturalist and Canadian Journal</u>
<u>AEU</u>	<u>Annual Report of the Ontario Agricultural and Experimental Union</u>
<u>BAC</u>	<u>The British American Cultivator</u>
<u>CA</u>	<u>The Canadian Agriculturalist</u>
<u>CF</u>	<u>The Canada Farmer</u>
<u>DAR</u>	<u>Annual Report of the Department of Agriculture for the Province of Ontario</u>
<u>DCB</u>	<u>Dictionary of Canadian Biography</u>
<u>FGA</u>	<u>Annual Report of the Fruit Growers' Association of Ontario</u>
<u>JTBA</u>	<u>Journal and Transactions of the Board of Agriculture of Upper Canada</u>
<u>OAC</u>	<u>Annual Report of the Ontario Agricultural College</u>
<u>OF</u>	<u>The Ontario Farmer</u>
<u>OSA</u>	<u>Annual Report of the Ontario School of Agriculture and Experimental Farm</u>
<u>PFC</u>	<u>Report of the Provincial Farm Commission</u>
<u>RCA</u>	<u>Annual Report of the Commissioner of Agriculture and Arts for the Province of Ontario</u>
<u>TBA</u>	<u>Transactions of the Board of Agriculture and of the Agricultural Association of Upper Canada</u>

### Chapter I: Removing the "Primeval Curse"

1. Evans, Treatise, p. 1; JTBA, 1856, vol. 1, p. 59.
2. CA, June 1850, p. 140.
3. Ibid.
4. Evans, Treatise, pp. 6, iii.
5. J.D. Chambers and G.E. Mingay, The Agricultural Revolution, 1750-1880 (London, 1966), pp. 54-76.
6. M.W. Rossiter, The Emergence of Agricultural Science: Justus Liebig and the Americans, 1840-1880 (New Haven, 1975), pp. 11-12.
7. Ibid., pp. 19-26, 29-46.
8. E.J. Russell, A History of Agricultural Science in Great Britain, 1620-1954 (London, 1966), pp. 88-94; J.D. Sykes, "Agriculture and Science," in G.E. Mingay, ed., The Victorian Countryside, vol. 1 (Boston, 1981), pp. 263-64.
9. CA, February 1850, p. 29; March 1850, p. 57.
10. Rossiter, The Emergence of Agricultural Science, pp.93 passim; CA, January 1850, p. 147.
11. Ibid., March 1850, p. 57.
12. BAC, March 1842, p. 34; May 1842, p. 72. For Edmundson and Evans see Ann MacKenzie, "William Graham Edmundson," DCB vol. VIII, pp. 266-67 and Jean-Claude Robert, "William Evans," ibid, pp. 277-79. Although the Cultivator was not the first agricultural periodical in Upper Canada when it appeared in 1842, it was the first to enjoy extended life. The Cultivator was published monthly by Edmundson between January 1842 and December 1847. In January 1848 it merged with The Canada Farmer, a paper edited by William McDougall and published since 1847, to become The Agriculturalist and Canadian Journal. See also Fred Landon, "The Agricultural Journals of Upper Canada," Agricultural History 9, no. 4 (October 1935), pp. 167-75.
13. BAC, March 1846, pp. 68-69; January 1845, p. 32; August 1845, p. 226.
14. ACJ, 15 February 1848, pp. 28-29; 1 April 1848, p. 64; BAC, January 1847, pp. 19, 22-27; George Buckland, "On the Farming of Kent," Royal Agricultural Society of England, Journal, 1845, pp. 251-302. Land agents in Britain were hired to manage large landed estates on the basis of their

expert understanding of the new farming techniques; they were known to be students of the scientific questions related to farming and vigorous advocates of rural improvement; see G.E. Mingay, Rural Life in Victorian England (London, 1976), pp. 126-45; see also Ann MacKenzie, "George Buckland," DCB, vol. XI, pp. 132-33.

15. CA, February 1850, p. 29; ACJ, 1 January 1848, pp. 8-9; BAC January 1847, pp. 25-27.
16. Evans, Treatise, p. 257.
17. Elwood Jones, "Adam Fergusson," DCB, vol. IX, pp. 251-52.
18. CA, March 1853, pp. 69-71.
19. BAC, September 1846, pp. 262-63; November 1846, pp. 339-44.
20. CA, September 1849, p. 226; BAC, September 1849, p. 262; November 1846, p. 341; CA, March 1853, p. 70.
21. J.M.S. Careless, "David Christie," DCB, vol. X, pp. 168-71; Careless, Brown of the Globe (Toronto, 1959), vol. 1, pp. 111-13.
22. BAC, February 1843, p. 30; November 1845, pp. 364-65; Jones, History of Agriculture in Ontario, p. 96; CA, January 1849, opposite p. 1.
23. CA, September 1850, p. 200; BAC, November 1846, pp. 339-40; JTBA, vol. 1, 1856, pp. 594-96, 605-06; CA, 1 January 1849, p. 7.
24. CA, August 1850, pp. 170-71; BAC, January 1847, p. 25.
25. BAC, September 1846, pp. 260-62; December 1846, pp. 353-55; Fowke, Canadian Agricultural Policy, pp. 114-15. Leeds and Grenville counties shared one society.
26. J.G. Hodgins, ed., Documentary History of Education in Upper Canada, 1791-1876 (Toronto, 1900), vol. VII, pp. 38-39, 41; Alison Prentice, The School Promoters: Education and Social Class in Mid-Nineteenth Century Upper Canada (Toronto, 1977), pp. 96, 105-06.
27. ACJ, 15 February 1848, pp. 28-29; CA, April 1850, pp. 75-76; Henry Youle Hind, Lectures on Agricultural Chemistry or Elements of the Science of Agriculture (Second edition, Toronto, 1851), p. iii; A.J. Madill, History of Agricultural Education in Ontario (Toronto, 1930), pp. 59-61.
28. JTBA, vol. 1, 1856, pp. 121-22; CA, September 1850, p. 193.
29. Jones, History of Agriculture in Ontario, pp. 328-33.

30. Fowke, Canadian Agricultural Policy, pp. 112-15.
31. CA, March 1852, p.70.
32. JTBA, 1856, vol. 1, p. 28.
33. CA, May 1850, p. 114; June 1850, pp. 125-26; April 1850, p. 76.
34. CA, June 1850, pp. 125-27.
35. Boyce, Hutton of Hastings, pp. 1-5.
36. Ibid., pp. 82, 55-56, 59, 96, 160, 122, 237, 241.
37. Ibid., pp. 141-42.
38. Ibid., pp. 110, 97; (emphasis in original).
39. Wesley Turner, "William Hutton," DCB, vol. IX, pp. 404-05; Boyce, Hutton of Hastings, pp. 160, 91, 161.
40. Ibid., p. 171.
41. Ibid., pp. 182-83, 195.
42. Ibid., pp. 23, 142.
43. Ibid., pp. 171-72, 236-38, 234.
44. Ibid., pp. 233-34; (emphasis in original).
45. CA, 1 January 1849, p. 8; (emphasis in original).
46. BAC, March 1842, p. 34; September 1846 p. 260; CA, 1 January 1849, p. 7; (emphasis in original).
47. Ibid., p. 2.
48. ACJ, 1 January 1848, p. 9.
49. T.H. Levere and R.A. Jarrell, eds., A Curious Field-Book: Science and Society in Canadian History (Toronto, 1974), pp. 162-64; (emphasis in original).
50. BAC, August, 1845, p. 226; October 1847, p. 292.
51. Hind, Agricultural Chemistry, pp. 8, 135-36.
52. Hodgins, Documentary History of Education in Upper Canada, vol. VII, pp.

- 144-45; CA, 1 January 1849, p. 6; Hind, Agricultural Chemistry, p. 10.
53. George Daniels, American Science in the Age of Jackson (New York, 1968), pp. 106, 152-53; CA, 1 January 1849, p. 7; 1 February 1849, p. 31.
54. CA, 1 January 1849, pp. 6-7; 1 February 1849, p. 31; 1 March 1849, p. 69.
55. Ibid., March 1850, p. 59.
56. JTBA, 1856, vol. 1, p. 39.
57. ACJ, 1 February 1848, p. 16.
58. CA, August 1857, p. 203.
59. Ibid., p. 235.
60. Boyce, Hutton of Hastings, pp. 224-25.
61. BAC, November 1842, p. 166; January 1847, p. 24.
62. Ibid., November 1842, p. 166; (emphasis added).
63. A.B. McKillop, A Disciplined Intelligence: Critical Inquiry and Canadian Thought in the Victorian Era (Montreal, 1979), pp. 88-89.
64. CA, February 1850, p. 38; (emphasis in original).
65. Ibid., March 1850, p. 59; (emphasis added).
66. McKillop, A Disciplined Intelligence, pp. 60-62; (emphasis in original).
67. Hodgins, Documentary History of Education in Upper Canada, vol. VII, p. 148.
68. CA, June 1851; p. 127.
69. Evans, Agricultural Improvement, pp. 63, 32; (emphasis in original).
70. McKillop, A Disciplined Intelligence, pp. 39, 41-42; (emphasis in original); CA, March 1852, p. 70; January 1852, p. 12.
71. Daniels, American Science, pp. 256-57.
72. McKillop, A Disciplined Intelligence, pp. 24-28, 7-8.
73. Evans, Agricultural Improvement, pp. 65-66, p. 104.
74. Ibid., pp. 82, 45, 79-80; (emphasis in original).

75. Ibid., p. 44; (emphasis in original).
76. Carl Berger, Science, God, and Nature in Victorian Canada (Toronto, 1983), p. 14; McKillop, A Disciplined Intelligence, pp. 93-94; Daniels, American Science, pp. 63-85.
77. McKillop, A Disciplined Intelligence, p. 95.
78. Daniels, American Science, pp. 65-66; Anthony Quinton, Francis Bacon, (Oxford, 1980), pp. 82-83.
79. CA, June 1851, pp. 129-30, 132.
80. Ibid., 1 January 1849, p. 8.
81. Ibid., 1 January 1849, p. 3; 1 March 1849, pp. 61-62.
82. BAC, 1 February 1842, p. 20.
83. CA, August 1850, p. 171; BAC, January 1842, p. 1; Evans, Treatise, pp. viii-ix; CA, 1 January 1849, p. 2; (emphasis added).
84. Ibid., January 1852, p. 30.
85. Boyce, Hutton of Hastings, pp. 234-35; (emphasis in original); Evans, Agricultural Improvement, pp. 85-86; CA, April 1852, p. 107; Hodgins, Documentary History of Education in Upper Canada, vol. VII, p. 142.
86. Boyce, Hutton of Hastings, pp. 233-35; Hodgins, Documentary History of Education in Upper Canada, vol. VII, p. 143.
87. CA, August 1850, pp. 169-71.
88. Ibid., 1 January 1849, p. 2.
89. Ibid., 1 January 1849, pp. 6-7; 1 February 1849, pp. 31-34; (emphasis in original).
90. Ibid., 1 February 1849, pp. 32-33; (emphasis in original).
91. Ibid., 1 January 1849, pp. 7-8.
92. Ibid., p. 8.
93. CA, July 1850, p. 147.
94. Ibid., June 1851, pp. 123-27.
95. Ibid., December 1850, p. 268.

96. Ibid., October 1853, pp. 297-98.
97. Ibid., April 1850, p. 77; November 1852, p. 349; August 1850, p. 171; Jones, History of Agriculture in Ontario, pp. 176, 198; G.N. Tucker, The Canadian Commercial Revolution, 1845-1851 (Toronto, 1964; Carleton Library edition), p. 164; CA, January 1851, p. 2; September 1851, p. 199; McCallum, Unequal Beginnings, pp. 18-19; CA, August 1857, pp. 199-201; February 1859, pp. 25-27.
98. Ibid., August 1857, pp. 199-202.
99. Ibid., June 1857, p. 145; September 1857, pp. 229-30.
100. JTBA, vol. 1, 1856, p. 573; Jones, History of Agriculture in Ontario, pp. 330-31; Madill, History of Agricultural Education in Ontario, pp. 63, 67-68.
101. TBA, vol. 4, 1860, pp. 108-36.
102. CA, August 1858, p. 174; (emphasis in original). Farewell's defence of science in agriculture resembles the one adopted by Samuel Johnson, the leading American agricultural scientist in the 1850s. Johnson, who had been a student under Norton and Liebig, began a long and distinguished career as a professor of agricultural chemistry at Yale in 1856. Johnson openly condemned chemical soil analysis from the scientific viewpoint. He concluded that the failures of soil analysis demonstrated that agricultural science was far more complicated than leading scientists such as Norton and Liebig had allowed in the 1840s. In Johnson's view, the solution to the problems soil analysis had failed to remedy depended on the introduction of a great variety of sciences and much more sophisticated experimental research -- not abandonment of science in agriculture. Historian Margaret Rossiter's comment on Johnson's vision of agricultural science applies equally well to the outlook of Professor Buckland's protégé: "Such a view was broad-minded, but it was based more on hope for the future than on present accomplishments"; see Rossiter, The Emergence of Agricultural Science, p. 134, passim. Despite Norton and Johnson's pioneering efforts in the 1840s and 1850s, by 1870 "there was no agricultural science profession in America and only a handful of agricultural science practitioners"; see Alan Marcus, Agricultural Science and the Quest for Legitimacy: Farmers, Agricultural Colleges, and Experiment Stations, 1870-1890 (Ames, Iowa, 1985), p. 6.
103. TBA, vol. 3, 1859, pp. 73.
104. Ibid., p. 74.
105. Ibid., pp. 76-78, 74; (emphasis added).
106. Ibid., vol. 3, 1859, pp. 73, 84.

107. CA, January 1863, pp. 4-5; CF, 15 January 1864, pp. 8, 16. For a discussion of the primacy of such "practical men" in mid-Victorian Britain, see Walter E. Houghton, The Victorian Frame of Mind, 1830-1870 (New Haven, 1957), pp. 124-25, 128.
108. CF, 15 May 1865, p. 158; (emphasis in original).
109. Ibid.; (emphasis in original).
110. Ibid.

## Chapter II: Crisis and Renewal

1. The wheat harvest dropped from 24.6 million bushels reported in 1861 to 14.2 million in returns published in 1871. The average yield per acre reported in the 1851 census was 15.8 bushels; in the 1861 report it rose to 17.7, but in 1871 the figure tumbled to a mere 10.4 bushels. Wheat exports followed a similar pattern. Although the volume of exported wheat established a new height in 1861 (when Canada West exported 17.4 million bushels), by 1866 the total slipped to 12.9 million. The descent hit 10.5 million bushels in 1868 and 8.9 by 1871. And wheat prices fell from \$1.40 per bushel in 1859 to 96 cents in 1864. They rose briefly to a high for the decade in 1866-67 of about \$1.50, but declined again to about 90 cents in 1870. See M.C. Urquhart and K.A. Buckley, eds., Historical Statistics of Canada (Toronto, 1965), p. 384; McCallum, Unequal Beginnings, pp. 19-20, 126; David Gagan, Hopeful Travellers: Families, Land, and Social Change in Mid-Victorian Peel County, Canada West (Toronto, 1981), p.47; and Marvin McNis, "The Changing Structure of Canadian Agriculture, 1867-1897," The Journal of Economic History 42, no. 1 (March 1982), pp. 193-95.
2. CF, 15 April 1868, pp. 113, 121; 15 July 1869, p. 245; 15 July 1870, p. 243; 1 October 1867, pp. 299-301.
3. Ibid., 15 December 1868, p. 369; Jones, History of Agriculture in Ontario, pp. 289-303; Doug Owram, Promise of Eden: The Canadian Expansionist Movement and the Idea of the West, 1856-1900 (Toronto, 1980), pp. 43-44.
4. F.A. Shannon, The Farmer's Last Frontier, Agriculture, 1860-1897 (New York, 1945), pp. 190, 417; Michael Tracy, Agriculture in Western Europe: Crisis and Adaptation Since 1880 (London, 1964), p. 23.
5. Ontario Agricultural Commission, Report, 1881, pp. 361-62, 369; Jones, History of Agriculture in Ontario, pp. 245-46; Fred Landon, Western Ontario



and the American Frontier (Toronto, 1967; Carleton Library edition), pp. 249-51; Tracy, Agriculture in Western Europe, pp. 22-24; D.A. Lawr, "The Development of Ontario Farming, 1870-1914: Patterns of Change and Growth," Ontario History 64, no. 4 (December 1972), pp. 243-44.

6. Gilbert Fite, The Farmers' Frontier, 1865-1900 (New York, 1966), pp. 13-14.
7. CF, 1 December 1868, p. 361; 2 November 1868, pp. 328-29; 1 August 1869, p. 245; Fowke, Canadian Agricultural Policy, pp. 134-35; RCA, 1877, p. viii.
8. CF, 15 August 1867, p. 250; 15 January 1872, p. 22.
9. Ibid., 15 April 1868, p. 121; 1 October 1867, p. 300.
10. The social impact of the land problem has been examined in a particular case in David Gagan's study of Peel County. Gagan shows that the expansion of the wheat economy in the 1840s and 1850s encouraged farmers in the county to increase the size of their farms. The "typical" size of a farm in Peel County (which became one of the leading wheat-producing areas in Canada West in the 1850s) grew from about 100 to 130 acres between 1850 and 1860. As individual holdings became significantly larger, the amount of available land was reduced after 1860 for would-be farmers. The number of men between the ages of fifteen and thirty for every 1000 acres of available land rose by 40 per cent in the 1850s. Farmers chose not to subdivide their land in the 1860s in an already contracted wheat economy to provide farms for each of their sons or for others who might want to acquire farms in the county. The average size of a farm in fact increased during the decade by about another ten acres. It is no coincidence that by 1871 the number of men between fifteen and thirty for every 1000 acres of available land in the county decreased by 40 per cent. See David Gagan, "Land, Population, and Social Change: The 'Critical Years' in Rural Canada West," The Canadian Historical Review 59, no. 3 (September 1978), pp. 295-96; and Gagan, Hopeful Travellers, pp. 43-45.
11. Between 1850 and 1870 the urban proportion of the provincial population increased from 14.6 to 20.2 per cent; McCallum, Unequal Beginnings, p. 55; CF, 15 August 1867, p. 250.
12. Ibid.; 1 January 1868, p. 8; 15 August 1873, pp. 282-83.
13. Gagan, Hopeful Travellers, p. 71.
14. OF, April 1869, p. 103; February 1870, p. 33; CF, 1 May 1865, p. 138.
15. Gagan, Hopeful Travellers, p. 155, passim.
16. Oyam, Promise of Eden, pp. 3, 43-48, 76, 109, 219.

17. CF, 1 October 1867, p. 300; 1 December 1868, p. 361.
18. Ibid., 1 October 1867, pp. 299-301.
19. Jones, History of Agriculture in Ontario, p. 86; McCallum, Unequal Beginnings, p. 51.
20. D.C. Masters, The Reciprocity Treaty of 1854 (Toronto, 1963; Carleton Library edition), p. 147. Between 1850 and 1855, agricultural products other than wheat and flour were 9.8 per cent of all Canadian exports. By 1866-71 the figure had risen to 39.2 per cent; McCallum, Unequal Beginnings, p. 48.
21. Urquhart and Buckley, eds., Historical Statistics of Canada, p. 386.
22. Jones, History of Agriculture in Ontario, pp. 216-30; McCallum, Unequal Beginnings, pp. 47-48.
23. In 1860 Canadian exports of cheese -- mainly from Canada West to the United States -- totaled 124,320 pounds. In 1871 Canadian cheese exports to all countries reached 8.2 million pounds and a value of \$1.1 million. Ten years later the amount of that trade -- largely by then from Ontario to Great Britain -- came to 49.2 million pounds worth about \$5.5 million. Butter exports totaled 5.5 million pounds and were valued at \$792,621 in 1860; they grew markedly in the 1860s reaching 15.4 million pounds and a value of \$3.0 million in 1871. Canada. Sessional Papers, No. 8H, 1894, Butter and Cheese Special Report, pp. 21-22, 27-28; Jones, History of Agriculture in Ontario, pp. 229-30; 358-59; Robert Ankli and Wendy Millar, "Ontario Agriculture in Transition: The Switch from Wheat to Cheese," The Journal of Economic History, 42, no. 1 (March 1982), p. 209; CF, 1 October 1867, pp. 299-301.
24. Ontario Agricultural Commission, Report, 1881, pp. 242, 276-83; OF, October 1870, p. 292.
25. CF, 15 January 1873, pp. 8-9.
26. Ibid., 1 October 1867, p. 300.
27. Ibid., 15 January 1864, p. 8; 15 January 1873, pp. 8-9.
28. OF, October 1870, p. 291.
29. RCA, 1879, pp. ix-xiii. (Wood, as the Commissioner of Agriculture and Arts, was a member of the provincial cabinet.)
30. Ontario Agricultural Commission, Report, 1881, pp. 231, 361-62. Prior to the 1870s the United States was Ontario's primary foreign market for livestock. In 1873 there were no cattle exports to Europe from Canada.

After the American Civil War the Reciprocity Treaty came to an end and tariff increases began to reduce Canadian cattle exports to the point where new markets had to be sought. By 1880 Canada (principally Ontario) sent about 50,000 cattle to Great Britain. When the value of shipments of sheep from Canada to Britain is added to the value of cattle the total comes to about \$5.5 million for 1880. The Ontario Agricultural Commission said of these statistics that "the trade with Great Britain has come to the rescue of the Canadian farmer." "The hope of the farmer," it added, "is in a foreign market for his cattle"; (*ibid.*, p. 238; and Jones, History of Agriculture in Ontario, pp. 278-79). Butter shipments reached a peak for the 1870s in 1872 when 19.0 million pounds worth \$3.6 million were exported and a low point for the decade in 1875 of 9.2 million pounds worth \$2.3 million. By 1881 the total was back up to 17.6 million. As with cheese exports, the trend of butter exports between 1871 and 1881 was toward a greatly expanded trade with Great Britain and much lower sales to the United States. Canadian butter exports to Britain and the United States came to 9.9 and 4.2 million pounds respectively in 1871. By 1881 British imports from Canada had risen to 16.2 million out of the total of 17.6 million pounds exported. The Americans only imported 291,862 pounds of Canadian butter in 1881. Ontario's considerable stake in the butter trade can be inferred from the fact that the province produced about 50 per cent of Canada's butter in 1871 and 1881; (Canada. Sessional Papers, No. 8H, 1894, Butter and Cheese Special Report, pp. 27-28). The total value of exports of "green fruits," which the Ontario Agricultural Commission said amounted mainly to apples, grew from \$30,150 in 1868-69 to \$364,390 in 1879-80. Only \$50,404 worth of this fruit was shipped to the United States. The rest went to Britain. The commission added that "Ontario is practically the one fruit growing and exporting Province of the Dominion"; Ontario Agricultural Commission, Report, 1881, p. 53.

31. Ontario Agricultural Commission, Report, 1881, pp. 231-403, 242; the commission's official report also appeared as a separate publication under the revealingly ambitious title Canadian Farming: An Encyclopedia of Agriculture (Toronto, 1881).
32. Ontario Agricultural Commission, Report, 1881, p. 520.
33. Ibid., pp. 93-94 (for Saunders); p. 488 (for Ballantyne); p. 513 (for Whitelaw); p. 274 (for Brown); pp. 37, 85 (for Arnold); pp. 111, 105 (for Dempsey); CF, 15 August, 1871, p. 283.
34. See pp. 52-54 above.
35. CA, January 1853, pp. 1-3; Jones, History of Agriculture in Ontario, pp. 333-31; CA, September 1850, p. 204; CA, January 1857, p. 13.
36. CF, 15 September 1871, p. 342.
37. Ibid., 16 October 1871, p. 379; 15 September, 1871, pp. 342-43; 2 March

- 1874, pp. 91-92; OF, April 1871, pp. 119-21; Clarence Danhof, Change in Agriculture: The Northern United States, 1820-1870 (Cambridge, Mass., 1969), p. 70.
38. CF, 15 March 1875, pp. 53-54; (emphasis added).
  39. OF, December 1869, pp. 374-76; (emphasis added); CF, 15 July 1870, p. 243.
  40. "FGA," in Annual Report of the Commissioner of Agriculture and Public Works for the Province of Ontario, 1872, p. 282; Ontario Agricultural Commission, Report, 1881, p. 37; CF, 15 July 1870, p. 243; 15 December 1868, p. 369.
  41. OF, December 1869, p. 375; CF, 15 December 1868, p. 369; 1 June 1867, p. 161.
  42. "FGA," in RCA, 1877, Appendix D, p. 292; RCA, 1878, p. 71.
  43. OF, March 1870, pp. 65-66.
  44. Ibid.
  45. OF, March 1870, pp. 65-66; February 1870, pp. 34-35; CF, 15 March 1875, p. 53.
  46. OF, February 1870, p. 35.
  47. CF, 16 January 1871, p. 18.
  48. Ibid., 30 April 1873, p. 139.
  49. Ibid., 15 August 1869, p. 302.
  50. OF, October 1869, pp. 295-96.
  51. Ibid., October 1870, p. 294.

### Chapter III: "Educate! Experiment!: Founding the Ontario School of Agriculture and Experimental Farm

1. CF, 15 August 1872, p. 280; 15 March 1875, p. 53; OF, February 1870, p. 33; December 1869, pp. 374-76.

2. CF, 15 July 1870, p. 263; 15 July 1875, p. 134.
3. Ibid., 16 November 1868, p. 345.
4. RCA, 1868, p. 3; Annual Report of the Commissioner of Agriculture and Public Works, 1870, pp. vi, x-xi.
5. OF, May 1870, pp. 129-31; G.P. Colman, Education and Agriculture: A History of the New York State College of Agriculture at Cornell University (Ithaca, 1963), p. 41.
6. CF, 1 May 1868; pp. 136-37; OF, January 1870, pp. 1-3.
7. Ontario. Sessional Papers No. 55, vol. IV, Part II, 1871-72, p. 17.
8. Ibid., pp. 1-2.
9. Ibid., pp. 2-10.
10. Ibid., pp. 3, 5.
11. OF, January 1870, pp. 1-3; Clarke, it is worth noting, was impressed with the Baconian philosophical underpinnings of Michigan's work in agriculture. "Very special prominence," he said, "is given to Inductive Logic, embracing, in particular, the methods of securing exactness in our observations of natural phenomena, and of eliminating error from experiments or comparisons of phenomena while endeavouring to ascertain natural laws." (Ontario. Sessional Papers No. 55, vol. IV, Part II, 1871-72, p. 8; emphasis in original.)
12. Ibid., pp. 13, 19.
13. Ibid., pp. 14-15.
14. Ibid., p. 17.
15. Ibid., pp. 20-21.
16. Ibid., pp. 22-23.
17. "PFC" in RCA, 1876, Appendix G, p. 376.
18. Ibid., p. 379.
19. Annual Report of the Commissioner of Agriculture and Public Works, 1871, p. xiv; CF, 15 August 1872, p. 280; 15 March 1875, pp. 53-54.
20. "PFC" in RCA, 1876, Appendix G, pp. 379-80.

21. A.M. Ross, The College on the Hill: History of the Ontario Agricultural College, 1874-1974 (Toronto, 1974), pp. 9-16.
22. Ibid., p. 17; A.M. Ross, "William Johnston," DCB, vol. XI, p. 454.
23. OSA, 1875, p. 18; Ontario Agricultural Commission, Report, 1881, vol. V, Appendix P, pp. 47-48.
24. Ibid., p. 49.
25. Ibid., pp. 16, 52.
26. Ibid., pp. 16-17, 60-61.
27. Ibid., pp. 49, 73.
28. Ibid., pp. 73, 79.
29. "PFC" in RCA, 1876, Appendix G, p. 381; Ontario Agricultural Commission, Report, vol. V, Appendix P, p. 69.
30. "Report of the Professor of Agriculture and Farm Superintendent," p. 76 in OSA, 1879; see also the entry for Brown in George M. Rose, ed., A Cyclopaedia of Canadian Biography, vol. I (Toronto, 1886), pp. 201-2.
31. "Report of the Professor of Agriculture and Farm Superintendent," p. 67 in OSA, 1879; "OAC," p. 157 in RCA, 1882, Appendix E.
32. "OAC," pp. 142, 216-17 in RCA, 1884.
33. "Report of the Professor of Agriculture, Farm Manager, and Experimental Superintendent," p. 9 in "OAC" in RCA, 1883; OSA, 1878, p. 48; (emphasis in original).
34. "Report of the Professor of Agriculture and Farm Superintendent," pp. 21-22 in OSA, 1879; OSA, 1876, p. 17.
35. "OAC," pp. 152-55 in DAR, 1886; RCA, 1877, p. xv; "Report of the Professor of Agriculture and Farm Superintendent," p. 22 in OSA, 1879.
36. "OAC," pp. 504, 501-2 in RCA, 1880; OSA, 1879, p. 22.
37. OSA, 1877, p. 12; 1879, p. 20; Ross, College on the Hill, pp. 36-37; "OAC," p. 4 in DAR, vol. I, 1893.
38. OSA, 1878, p. 13; 1879, pp. 13-14, 29; Ross, College on the Hill, p. 26.
39. RCA, 1878, p. xvii; 1879, pp. xx, ix.

40. Ontario Agricultural Commission, Report, 1881, pp. 527, 205, 273-74; The British Farmer's and Farm Labourer's Guide to Ontario (Toronto, 1880; reprint edition, 1974), pp. 52-53. The Guide carried illustrations of the Guelph campus (opposite p. 1 and on p. 12). A "practical letter" from William Brown to British farmers on the advantages of farming in Ontario appears on pp. 89-99. Brown considered himself something of an expert on immigration; see his "The Philosophy of Immigration," Rose - Belford's Canadian Monthly and National Review, 2 (June 1879), pp. 696-701.
41. "OAC," pp. 310, 341 in RCA, 1880; William Johnston told the Ontario Agricultural Commission in 1880 that the annual budget for the college was about \$22,000; he added that the provincial government's capital expenditure on the college to that time had been about \$200,000; (see vol. V, Appendix P, p. 61 of the commission report.)
42. "OAC," p. 333 in RCA, 1880, Appendix E; Ontario Agricultural Commission, Report, 1881, vol. V, Appendix P, p. 61.
43. OSA, 1875, pp. 2-3.
44. Ontario Agricultural Commission, Report, 1881, vol. V, Appendix P, p. 49.
45. "Report of the Professor of Agriculture and Farm Superintendent," p. 58 in OSA, 1879; "The Ex-President's Report," ibid., pp. 28-29.
46. "AEU," p. 230 in DAR, 1885; Ross, College on the Hill, p. 87; OSA, 1878, pp. 16-17.
47. RCA, 1880, pp. 112, 114.
48. CF, 1 July 1864, p. 180; 1 June 1865, p. 161; Canadian Live-Stock Journal, October 1886, p. 289; RCA, 1877, p. 195.
49. "The Ex-President's Report," p. 28 in OSA, 1879; (emphasis added).

#### Chapter IV: The Limits of Practical Agriculture

1. R. Craig Brown and Ramsey Cook, Canada, 1896-1921: A Nation Transformed (Toronto, 1974), p. 4; for evidence of such pessimism in the 1880s about Canada's future see Carl Berger's introduction to Goldwin Smith, Canada and the Canadian Question (Toronto, 1891; University of Toronto Press edition, 1971), p. vi. This theme will be explored more fully in relation to scientific agriculture in Part Two.

2. "Report of the Professor of Agriculture and Farm Superintendent," p. 22 in OSA, 1879; "OAC," p. 157 in RCA, 1882, Appendix E.
3. Ibid., pp. 22-23, "OAC," p. 152 in DAR, 1886.
4. "OAC," pp. 157-58 in RCA, 1882, Appendix E. Brown hoped that despite the inconclusiveness of much of his work, "the government will deal liberally, and the country bear patiently with the farmers' only direct public indulgence — their Experimental Farm." He added that "few people are aware of all the care, judgment, watching, comparing, and general supervision that has been exercised, well or indifferently, through so much in these long seven years"; ibid., pp. 174-75.
5. Ibid., p. 160; (emphasis added).
6. William Brown, "Science and Practice in the Production of Beef and Mutton," p. 27 in RCA, 1882, Appendix B.
7. "OAC," p. 199 in RCA, 1884; Brown wrote in cryptic asides in one of his reports, "Must learn how to interpret the results" and "to tell why and wherefore"; see "OAC," p. 158 in DAR, 1886; "OAC," pp. 216-17 in RCA, 1884.
8. "OAC," p. 170 in RCA, 1883; "AEU," pp. 232-33 in DAR, 1885.
9. "AEU," p. 232 in DAR, 1885.
10. Ibid., p. 229.
11. OSA, 1878, p. 13; "The Ex-President's Report," Appendix F, Table 2, ibid., p. 73.
12. "OAC," p. 170 in RCA, 1883.
13. "OAC," pp. 154-55 in DAR, 1887.
14. Ross, College on the Hill, p. 164.
15. Ibid., p. 165.
16. J.B. Reynolds, "James Mills, M.A. LL.D.," The OAC Review, (January 1925), p. 105; Henry J. Morgan, The Canadian Men and Women of the Time: A Handbook of Canadian Biography of Living Characters (Toronto, 1912), p. 807; George Rose, ed., A Cyclopaedia of Canadian Biography, vol. 1 (Toronto, 1886), pp. 594-96; Robert M. Stamp, The Schools of Ontario, 1876-1976 (Toronto, 1982), p.8.
17. Ontario Agricultural Commission, Report, 1881, vol. V, Appendix P, p. 12; "AEU," pp. 220-22 in DAR, 1890; "OAC," p. 340 in RCA, 1880, Appendix E.



18. "OAC," p. 20 in RCA, 1883; "OAC," p. 341 in ibid., 1880, Appendix E.
19. "OAC," p. 16 in ibid., 1882, Appendix E.
20. Ontario Agricultural Commission, Report, 1881, vol. V, Appendix P, pp. 6-7; "OAC," pp. 31-32 in DAR, 1886.
21. "OAC," p. 356 in RCA, 1880, Appendix E.
22. "AEU," pp. 229, 233 in DAR, 1885.
23. "OAC," p. 504 in RCA, 1880, Appendix E; "OAC," p. 142 in ibid., 1884.
24. "OAC," pp. 142, 146 in RCA, 1884.
25. "AEU," p. 69 in DAR, vol. 1, 1899. (Brown got as far away from OAC as possible. He emigrated to Australia.)
26. "OAC," p. 4 in DAR, vol. 1, 1893.
27. "AEU," pp. 221-23 in DAR, 1885.
28. Ibid., pp. 233, 230.
29. Ibid., p. 227; The OAC Review, (June 1924), p. 311; Ross, College on the Hill, p. 68.
30. Archives of Ontario, RG 18 B-5, Records of Royal Commissions, Commission to Enquire into Certain Misconduct at the Agricultural College, Guelph, 25 January 1884, Report, n.p.
31. Ross, College on the Hill, p. 43; "OAC," p. 337 in RCA, 1880, Appendix E; "AEU," p. 242 in DAR, 1885.
32. Ontario Department of Agriculture. Annual Report of the Statistics Branch, 1939, Part 1. -- Agricultural Statistics, p. 4 (hereafter as Ontario. Report of the Statistics Branch, 1939).
33. "OAC," pp. 3-4, in DAR, 1887.
34. L.A. Wood, A History of Farmers' Movements in Canada (Toronto, 1924; University of Toronto Press edition, 1975), pp. 111-12; S.E.D. Shortt, "Social Change and Political Crisis in Rural Ontario; The Patrons of Industry, 1889-1896," in Donald Swainson, ed., Oliver Mowat's Ontario (Toronto, 1972), pp. 212-13, 222; Ontario. Report of the Statistics Branch, 1939, p. 41.
35. "OAC," pp. 3-5 in DAR, 1887.

## Part Two

### Agrarian Idealism at Ontario Agricultural College

#### Introduction

From the mid-1890s to the end of the Great War, Canada experienced what has been called "the great transformation." Rapid industrial and urban growth and unprecedented numbers of immigrants (with far more varied ethnic backgrounds than ever before) created "a new, unfamiliar society."<sup>1</sup> Beyond Canada's borders, strategic and economic competition between the most advanced industrializing powers -- Britain, France, Germany, and the United States -- changed the global order in unsettling ways. In the 1880s and early 1890s, many Canadians were particularly concerned about the possibly hostile intentions of their southern neighbour. Countries which aspired to genuine nationhood would have to enter the international fray. Canada thus became involved in a wider range of foreign affairs. The federal Department of Trade and Commerce was established in 1892; the Canadian government extended its diplomatic activities through the Joint High Commission established in 1898 to deal with Canadian-American relations; and Canadian contingents fought overseas for the first time in the Boer War and then again in World War I. As Principal Grant of Queen's University said in 1894, "The days of isolation are over. Canada cannot hold aloof even if she would, and her young men are too virile to shun the needed strain and conflict if they

could."<sup>2</sup>

At this critical moment, however, when changing world conditions were about to test Canadian mettle more seriously, certain characteristics of the new society taking shape at home seemed to threaten the country's strength. Despite his praise of Canadian youth, Principal Grant, like many other leading public figures, was profoundly ambivalent about the changes occurring in Canadian life. The problems of rural Canada in the new society were among their chief concerns. Most had long thought that agriculture would be the motive force of national progress. Rural life, they believed, would always be the essential social and economic basis of Christian faith and morals as well as individual health and vigour. Canadian farms were "the springs of our civilization." Industrial and urban expansion, seemingly at the expense of rural areas, caused many in public life to fear "that Canadian development was unbalanced and unhealthy."<sup>3</sup>

These worries about the ultimate fate of a society which, though enlarging and prospering, was becoming detached from its rural moral and spiritual foundations, were worsened by the inroads of Darwinism and higher biblical criticism on orthodox Christian belief. Prominent Canadian educators, clergymen, politicians, and journalists recoiled in horror from the prospect of a modern world built on ever more presumptuous secular interpretations of nature and religious tradition and soul-destroying industrial work and urban life.

Popular versions of philosophical idealism informed the most important Canadian reactions to this emerging crisis. The vision of the good society

conveyed in these expressions of idealism gave farming and rural values a central place. One of the popular variants of idealism was the agrarian idealism espoused at Ontario Agricultural College. OAC made the most comprehensive idealist statement in Ontario of the rural perspective on modern Canadian society. College officials argued that a transformed or "new agriculture" in the province, erected on idealist principles, and radiating from Guelph across rural Canada, would be the best basis on which modern Canada could pursue a leading role in the British Empire and wider world.

Part Two examines the salient features of OAC's agrarian idealism. The first chapter in Part Two introduces the late nineteenth-century Canadian social, economic, and intellectual conditions in which idealism took hold, its main tenets, and examples of its important popular manifestations in Canadian society. The chapter contends that agrarian idealism at OAC is a significant variant of the popular form idealism took in English-speaking Canada at the turn of the century.

**Modernity**

By the late 1880s, the intellectual troubles of the Ontario Agricultural College and rural Ontario's economic problems placed agricultural development in the province in difficulty just as Western Canadian agriculture also faltered. Immigration to the West decreased; the Winnipeg land boom collapsed; crop prices fell; and optimism about Western prospects turned to widespread disillusion. Disappointment with the country's unacceptable rate of material progress in the 1880s deepened as the ethnic, religious, and sectional tensions Confederation was expected to ease reared up as virulently as ever. Champions of Western Canada such as Charles Mair railed against alleged Eastern responsibility for their region's plight; the Riel Rebellion of 1885 detonated linguistic and religious controversies which reappeared in the early 1890s in the Manitoba Schools Question. In the mid-1880s there was talk of secession in Nova Scotia while provincial governments in Ontario and Quebec asserted their autonomy against perceived federal encroachment. The ambitious national purposes of Confederation seemed far from realization.<sup>1</sup>

The uneasiness caused by these strains on national life was aggravated by disturbing questions about the validity of Christian doctrine and moral teaching

which spread across the English-speaking world in the wake of Darwinism and historical or higher criticism of the Bible. Many of the first Canadian intellectual figures to encounter Darwinism and higher criticism between 1860 and 1890 mounted fierce opposition to them. These critics saw disastrous moral and social consequences should the Bible be riddled with historical and scientific errors in a Darwinian universe which, at best, seemed to leave God a mere bystander while the struggle for survival engulfed nature and society. Sensitive, informed minds were under pressure; they were forced to wrestle with unprecedented challenges to orthodox views in what a prominent professor at Queen's University called an intellectual "emergency."<sup>2</sup>

Among leaders of opinion in Canada in the 1880s, Goldwin Smith probably experienced more keenly than most the deflation of conventional assumptions caused by Canada's economic and political underdevelopment and the religious and moral controversies of the day. Smith advocated Canada's annexation to the United States as the only alternative to an untenable Confederation and, with much less enthusiasm, he accepted the validity of natural selection and higher criticism. He was left with a threadbare Christian theism which he anxiously acknowledged had little definite doctrinal, moral, and social content. For Smith, in fact, the bleak logic of modern science and theology would lead inexorably to the breakdown of the civilizing restraints forestalling social strife and moral anarchy.<sup>3</sup>

Although few of Smith's contemporaries shared either his continentalism or despair, they experienced many of his anxieties. Continentalist sentiment

vanished as the prosperity of the late 1890s and the 1900s established at least the economic viability of Canadian nationhood; but such rapid and spectacular growth had a dark side which brought out the ambivalent attitudes of the most influential English-Canadian commentators towards modern social and economic change. These people were far from opposed to Canada's economic development. They took pride in such material progress as there had been since the days of the Loyalists. They welcomed the prospect of enormous increases in Canada's population and wealth. But when the country actually began to experience some of this expansion at the turn of the century, their satisfaction was accompanied by dire warnings about the dangers of materialism, selfish individualism, love of luxury and ease, urban poverty and crime, and political and business corruption. If unchecked, these tendencies would thoroughly undermine the spiritual, moral, and cultural bases of civilized society.<sup>4</sup>

As these responses imply, the "Laurier boom" created a new industrial, commercial, and urban environment of daunting magnitude and complexity. Among observers of this development there was a profound sense that change was moving along lines which were fundamentally unsound. After 1900 the urban-industrial sector quickly came to overshadow the older rural base of society. The movement of large numbers of rural Canadians to the cities was deeply worrisome. Few Canadians had anticipated that rural life would be so decisively overwhelmed by material progress in other sectors. Whether they lived in cities or rural areas, Canadian intellectual leaders, in the universities and churches especially, believed that the countryside was the cradle of essential social values. A society which weakened that foundation put itself in grave peril.<sup>5</sup>

These Canadians viewed the emerging crisis with one eye on other countries in which social and intellectual problems had already reached more frightening, even intractable stages. Canadians adapted solutions to these problems mainly from foreign counterparts who had anticipated them or had experienced them first-hand. The principal Canadian responses to the turn-of-the-century crisis had European sources. These influences were largely British or they often arrived from other European countries through the filter of British social thought.

Between the 1830s and 1870s leading intellectual figures in Britain believed that their society was passing through the final phases in the life of a traditional order (based on orthodox Christianity, an agricultural economy, and a rigid hierarchical social structure) which had taken recognizable form in the Middle Ages. The new order being fashioned by massive industrialization and urbanization, wider political democracy, technological innovation, and scientific discovery raised "widespread doubt about the nature of man, society, and the universe." The mid-Victorian intellectual project in Britain was a "reconstruction of thought" which would allow new purpose to be found in life in "this dynamic, free-wheeling society" while alleviating its terrifying social problems.<sup>6</sup> This task was undertaken by philosophical thinkers such as John Stuart Mill and a host of less systematic, but no less important, social critics and literary figures led by Thomas Carlyle, Alfred, Lord Tennyson, John Ruskin, Charles Kingsley, and Thomas and Matthew Arnold. Although these Victorians never lost confidence in the existence of a comprehensive body of truth about man, society, and the universe (which the properly formed intellect could grasp), they were still some distance from their goal by the 1870s. As Walter Houghton observes, "The very



effort to resolve the situation made it worse. New solutions raised new controversies, which raised new questions."<sup>7</sup>

As has already been intimated, parallel social, economic, and intellectual challenges began to affect Canada between the 1860s and 1880s in the early skirmishes of industrial and urban development with rural life and the arrival of the Darwinism and higher criticism which left Goldwin Smith a "sceptic who needed God." By the early 1890s the call had gone out in Canada too for a thoroughgoing social and moral regeneration.<sup>8</sup> Canadian attempts at a reconstruction of thought in the 1880s and early 1890s produced a spectrum of views which ranges from the evolutionary positivism of W.D. LeSueur, the militant free-thought of Allen Pringle, the mystical "cosmic consciousness" of Dr. Maurice Bucke, and the Reverend B.F. Austin's spiritualism to Flora MacDonald Denison's feminism, the theosophic socialism of Phillips Thompson, and the Christian republicanism of humorist J.W. Bengough.<sup>9</sup> These individuals, however, did more to whip up the commotion of nostrums and issues encircling thoughtful people than to help sort it out. These "regenerators" were avant-garde iconoclasts rather than representatives of general opinion on the questions they addressed. Only Dr. Bucke, the superintendent of the insane asylum at London, Ontario, held a major position in any important Canadian institution.

Although Canadians on the whole rejected the ideas of these "regenerators" before 1910, there was general concern in the country about the need for a regeneration of society. Representatives of mainstream opinion in leading positions in Canadian institutions preferred, however, philosophical idealism in

its popular formulations and practical manifestations as a blueprint for societal renewal. Idealism became the dominant philosophical school in Canadian academic and intellectual circles by about 1890. Through the influence of philosophers such as John Watson of Queen's University (who was one of the world's leading exponents of idealism), idealism emerged as the framework of thought within which the seemingly worsening Victorian intellectual, religious, moral, and social problems could be attacked. Idealism taught that ultimate truth in these matters, God's truth, was accessible to the human mind. Beneath the surface chaos of social and economic change and religious and moral questioning, there was a deeper, fundamental structure of reality -- a natural order, law, or truth about the world -- which was knowable (thus rational) and eternal and universal (thus essentially stable and true for all people at all times). For idealists, that which was natural and fundamental in existence was spiritual, moral, and therefore Christian. Since the spiritual essence of things was also rational, there could be no fear of critical inquiry or the highest educational, scientific, and cultural attainments. If the rational was spiritual and moral, the properly functioning critical intellect could not lead to secular materialism or moral relativism. In the area of social truth, if the universal moral law was the fundamental reality governing existence, an individual's pursuit of pure self-interest was inherently immoral. Moral social behaviour began when an individual understood his obligation to attempt to obey this law. Since the universal moral law was the highest wisdom for an individual's community (as well as all humanity), self-denying public service in ever-widening spheres of action was the basis of true citizenship and any legitimate claim to social leadership at home or in the world at large. If people from distinct and even conflicting backgrounds

could begin to follow the moral law, a new, higher harmony of once disparate elements in society could eventually be realized. For its adherents, idealism promised a means of ensuring that modern change served the best traditional, Christian, spiritual, moral, and communal values. Progress in any aspect of life would be, in effect, fulfilment in new forms of the substance of the old or eternal.<sup>10</sup>

At the turn of the century in Britain and Canada, those who attempted to implement in social and political affairs the idealism of the university lecture hall developed what has been aptly termed "a creed of practical idealism." "Shorn of its philosophic intricacies," writes Terry Cook, "Idealism as a creed became a practical amalgam of ideas and values through which materialism, secularism, and individualism could be effectively opposed. Idealism as a creed was not so much philosophy qua metaphysics and epistemology, but philosophy qua right living and personal ethics."<sup>11</sup> This popular or practical effort to fashion Canadian life along idealist lines had broad support among leading educators, clergymen, and literary figures. The impact of the creed of idealism can be seen in Sir George Parkin's attempts to rouse public opinion behind the "new imperialism," which found a rationale in the idealistic Christian motives and virtues the burden of world empire would, he hoped, inspire.<sup>12</sup> The creed shaped J.H. Putman's formative contribution to the "new education" in Ontario public schools. Putman, who had been a student of John Watson's at Queen's, wanted the schools to ensure that the highest ideals of citizenship would permeate the province's emerging industrial, urban order and the new empire of which Canada was a leading member.<sup>13</sup> The rise of liberal Protestantism or the "new Christianity" through the work of one of

its leading spokesmen, the Reverend Salem Bland, can also be traced to the idealist influence of Watson as well as of Principal George Grant of Queen's in the 1890s. Bland sought the embodiment of spiritual and moral law in the social salvation of all people in the Kingdom of God on earth rather than individual salvation of some for the Kingdom of Heaven hereafter.<sup>14</sup> And idealism invigorated Canadian literary and cultural activity at the turn of the century. In idealism, men of letters such as Bliss Carman and Archibald MacMechan found philosophical confirmation of the spiritual nature of the universe, and in literature they believed they had a means of access to the spirit.<sup>15</sup>

As this preference for literary endeavour suggests, practical idealists favoured certain points of contact between the spiritual and material realms. They thought that the reasoning, conceptualizing powers of the mind, for example, had to be highly developed so that the rational structures of existence could be perceived. Reason, in turn, was properly directed by certain innate determinants of value. Practical idealists heeded the promptings of the soul, intuition, emotion, and will. These resources of the inner life or "character" were shaped by the inherent biological traits of one's race, and these were significantly affected by climate and geography. For practical idealists the natural setting in which people could best ascend to the ideal was the rural or pastoral environment.<sup>16</sup>

The idealists' preference for rural life found a variety of expressions. For Sir Andrew Macphail, Professor of the History of Medicine at McGill University, a return to agricultural work by large numbers of people was the only way to

protect civilized society from the corrosion of cities and industries. Archibald MacMechan, Professor of English at Dalhousie University, made a less drastic assertion of rural priorities in his admittedly vague injunction to Canadians to remain close to the countryside. J.H. Putman, however, felt obliged to pursue more indirect methods of approach to the unsurpassed benefits of agricultural life. He realized that Canadians in most major urban centres would be unable to experience the rural influences he had enjoyed as a boy on an Ontario farm. Putman sought new "natural" sources of social well-being for a largely urban society in the "new education," (which placed great emphasis on school gardening, nature study, physical education, manual training, and domestic science), and in urban reforms such as provision of parks, civic "beautification" through landscaping, gardening, and other horticultural improvements, and suburban housing developments.<sup>17</sup>

One of the most comprehensive statements of the social purposes of popular Idealism came from George Parkin, who was Headmaster of Upper Canada College (1895-1902) and a life-long advocate of imperial unity. Like Macphail and Putman, Parkin was raised on a farm where, says his biographer, he learned "the primary importance and social significance of farming."<sup>18</sup> In large measure, Parkin's idealism reformulated what he saw as the simple Christian virtues exemplified in rural societies for the massive new challenges of life in a world dominated by technologically advanced, industrial, urban nations whose economic and strategic interests extended across the globe. These values were the antidote for the chaotic, aimless pursuit of wealth, self-interest, and power which was, in Parkin's view, too often characteristic of modern countries such as Great Britain

and Canada. Traditional virtues were strengthened in this modern setting by revitalized educational institutions such as Upper Canada College in Toronto. For Parkin, the college was a moral bulwark called for by the great ethical risks run in modern life:

How, for instance, can the homes of the rich, with their luxury, their environment of servants, their social excitements and distractions, be a suitable place for steady discipline and the simple life demanded by the young? Life on a Canadian farm is not easy, as I know from experience, but for purposes of mental and moral training, a lad on a quiet Canadian farm has an infinite advantage over another who has to fight against the temptations and distractions of a rich home, say in Toronto or Montreal.<sup>19</sup>

Parkin believed that the minds and characters of Canada's future leaders could be formed most effectively by commitment to an expanded, united British Empire in which Canada would play a prominent role. Cast in the Christian idealist philosophical framework which he had acquired at Oxford in the early 1870s, Parkin thought that the work of strengthening the empire would provide the best practical means of conforming to the Christian spiritual truths governing existence. The immense responsibility of maintaining a world-wide empire could summon up the mental power, moral force, strength of character, and sense of duty required to attack modern social problems in Britain and the dominions.<sup>20</sup>

The British nation's credentials for the work of empire were its unrivalled racial instincts and characteristics. These traits had been established by a lengthy historical experience which brought together in the Anglo-Saxon race the

best features of Roman, Viking, Celtic, and Norman stock as well as Hebrew, Greek, and Christian influences. By the end of the nineteenth century, the race's genius for the arts of civilization had been registered in the splendid history of British commerce, constitutional government, overseas settlement, cultural achievement, and Christianity. The Anglo-Saxon race had shown itself to be the human community in which the underlying spiritual forces of the universe had been best embodied. Expansion of the British Empire, therefore, was inevitable and natural. It was in complete harmony with the laws of existence. The British claim to imperial rule and world leadership arose, in fact, from an obligation to serve the highest good of others by following the principles which upheld that ideal.<sup>21</sup>

Canada had a major contribution to make to the new empire. Canadian history indicated to Parkin that the primary natural, spiritual forces (which directed the general destiny of the British people) had been operating with especially favourable effect in Canada. The country had been established on the correct organic basis by the Loyalists' respect for traditional moral and political ideals. These values had subsequently been ingrained even more deeply upon the Canadian character by the country's harsh northern climate. The rigors of life in the north had developed a purer, hardier, more virtuous racial type. Since weaker, non-northern, non-Anglo-Saxon peoples could not tolerate such climatic conditions, they had been discouraged from settling in Canada and thus prevented from contaminating the blood of the race. The country's geography and natural resources also marked it out for inevitable distinction within the empire. Canada's geographical location between the Atlantic and Pacific Oceans gave the

country a pivotal strategic and commercial position as an imperial thoroughfare. The east-west axis of Canada's lakes and rivers gave a natural physical basis to the organic ideals which had brought transcontinental political union in the 1860s and 1870s. The unsurpassed beauty of the Canadian landscape stirred deep emotional responses from Canadians, thus strengthening the intuitive foundations of human character and exercising the mind's imaginative or idealizing capacity. The incalculable resources of Canadian mines, fisheries, forests, and, above all, farms could provide enough of the vital necessities of imperial power to make the British Empire virtually self-sufficient. In Parkin's view, Canadian adherence to the idealist creed had built up considerable immunity to the sort of deterioration of racial character which was reaching dangerous levels in Britain due to the excesses of industrialization, urbanization, and materialism. Canada's principal duty or mission in the new empire, as Parkin and other Canadian imperialists saw it, was to regenerate the Anglo-Saxon race with the undiluted racial stock, clear minds, and robust characters bred in a northern climate among those who worked mainly in primary resource industries such as farming.<sup>22</sup>

As Parkin's biographer notes, this role for Canada called for a society which was preferably "rural, conservative, and spiritual." Although Parkin recognized the economic importance of other natural resources and, to a lesser extent, of manufacturing, he thought that "agriculture will always be the mainstay of Canada . . . . The agricultural possibilities of the country surpass all others." Despite his rural preferences, Parkin devoted very little attention to agricultural improvement or education; however, he applauded those who had. He praised the "very considerable efforts" of Canadian governments "to elevate farming as an



occupation." "Everyone who knows the country," he added, "will admit that in no direction could effort be more usefully applied." Parkin also perceived that some who were personally involved in agricultural uplift shared his idealist creed. He complimented the individual engaged in the work of agricultural education (particularly in agricultural colleges) by calling him "a practical idealist."<sup>23</sup>

Parkin's awareness of a practical agrarian idealism suggests something of the variety of popular forms of idealism in Canadian society at the turn of the century. Indeed, idealism as a practical creed may not only be studied in J.H. Putman's contribution to the "new education" and Parkin's conception of the "new Empire," but also in the "new agriculture" promoted in Ontario primarily at the Ontario Agricultural College. Beginning in the early 1890s, C.C. James, Ontario's Deputy Minister of Agriculture (1891-1912) and former Professor of Chemistry at OAC (1886-91), told farmers in Ontario that they could fashion a "new agriculture" by making the means of agricultural development available to them in the modern world serve idealist ends. Agrarian idealism could take the progress Ontario farmers had already made towards mixed agriculture to much higher levels. Improved rail, steamship, and cable communication in the late nineteenth century could open rich markets for an ever widening variety of dairy, livestock, and field products. Scientific and technological advances, he argued, could further these agricultural goals as impressively as they had assisted industrial development. Rural Ontario could actually accomplish the transition to the new agriculture in tandem with the expanding industrial-urban world. James thought that the essential feature of modern society was its interdependence. Modern societies shared the same basic economic, technological, and

communications infrastructure. This rural-urban system could allow agriculture to enjoy the advantages which led to the success of urban manufacturing, but, in the long run, agriculture would prove to be the most advanced form of manufacturing because the sophisticated process of transforming the natural elements into the finest food was far superior to ordinary industrial processes.<sup>24</sup>

The global perspective required of farmers could also put an end to their age-old physical isolation, rude self-sufficiency, and social introversion. James argued that the greater services required beyond the farm to process, package, store, and transport such agricultural products, as cheese provided urban employment. At the same time, the modern progressive farmer would be increasingly dependent on the tools, machinery, and other supplies which were manufactured or sold in the cities. The farmer's growing exposure to urban society could introduce rural Ontarians to an array of urban consumer goods and social and cultural amenities which would improve rural social life. James saw no reason why farmers too should not have well-built, attractively designed homes, beautifully landscaped grounds and gardens, running water, telephones, electricity, good roads, a varied, wholesome diet, and wider recreational and cultural opportunities. And if farmers could adjust to the demands of the new agriculture, the resultant prosperity would not only prove beyond doubt that farming was the economic basis of Canadian society, but it would effect a reconciliation between city and country which would be the foundation of a more unified and stable Canada.<sup>25</sup> To seize the opportunity for rural progress which these developments presented, the farmer first had to improve himself. James told an audience at OAC in 1893 that a farmer had to have, before anything else,

an ideal:

After all, the improvement depends upon the man himself, upon his views of life, the motives that prompt him to action, the aim or ideal that he holds up before him, the sentiment that rules his every act. I need say in conclusion only this, that if you as farmers, as young developing farmers, have a true ideal of farm life and try to live up to it, if you take a proper pride in your life work, if you arouse the world's respect by respecting yourselves, if you develop within yourselves a true sentiment, if you guide your acts by the best and noblest thoughts, you will do your share to raise and improve the social condition of the farmers of Ontario.<sup>26</sup>

At the turn of the century, OAC became the Ontario Department of Agriculture's principal means of promoting the new agriculture. The provincial government intended to educate at the college an elite of scientific agriculturalists which would lead Ontario's farmers through the complexities of the modern world. From the late 1880s the college academic and extracurricular programme was revised in order to lay the practical idealist basis of their leadership. These changes departed from both the almost exclusive emphasis on practical instruction and the modest social goals for college students which the founders of the college, and leading staff members such as Professor Brown, favoured in the 1870s and early 1880s. To fulfil the promise of the new agriculture, their successors thought that these limited aims had to be discarded. The OAC programme in the 1890s and 1900s summoned the student to pursue ideals of agrarian life which would stimulate personal development. The student could expect to master modern agriculture by beginning at OAC to marshal his

rich latent sources of idealism: his spirit, mind, and character.

The student idealist who was conscious of the proximity of the spiritual dimension of existence had his moral vision and ambition (his moral idealism) stirred by the new accessibility of spiritual power. To realize the greatly increased practical benefits which this additional moral force made possible, the critical, interpretive, indeed visionary powers of the mind had to be strengthened. These powers of reason would enable him to conceive manifestations of the highest moral ideals and to explore an ever widening range of scientific and practical means of advancing these ideals in agriculture. The primary objective of the college programme would no longer be to teach and refine established practical agricultural skill and rules. These were far from sufficient to support the varied, quickly changing demands of the new agriculture. The principle aim of an OAC education became the formation of a man whom college men said had character. The individual whose mental powers had been awakened and his entire being galvanized by an expanding spirit-derived moral vision for modern agriculture had character. He would master the practical circumstances of the new agriculture in accordance with his ideals.

The remaining chapters examine in detail how the new OAC programme was expected to promote spiritual, intellectual, and character development for practical agricultural improvement. The main features of the programme, however, can be summarized here. College officials espoused liberal Protestantism as a means of sustaining spiritual vitality in the face of modern challenges to Christian belief. The campus chapter of the YMCA (which was

established in 1889) became the focal point of this effort. Literary studies and cultural and athletic activities gained new prominence at OAC as further means of increasing spiritual discernment, moral energy, intellectual capacity and creativity, and improving character. The college Literary Society, which conducted student debates and provided opportunity for public speaking, extended the range of its concerns from largely practical agricultural subjects to moral, social, political, and economic questions of the day. In 1889 the society launched a monthly student periodical, The OAC Review, to encourage the self-development which literary effort assisted. The columns of the Review and Literary Society meetings were nourished by the revised English course on the curriculum. Although English had been a subject of study since the college opened in 1874, it had only been taught on a part-time basis and mainly to improve grammar and business communication. A few literary classics were read primarily to place the best examples of sentence construction before the students. By the turn of the century, classics of literature, poetry, and history by Wordsworth, Scott, Shakespeare, Tennyson, Carlyle, and Milton, among others, were not only on the curriculum for that reason but also because these authors stretched the student's mind with spiritual insight and uplifted his character with the moral example of their lives and writings. Due to the growing importance of the English course, the college appointed a professor to teach it full-time in 1906. In the same year, the college hired its first full-time athletic instructor to coordinate the expanding sports programme. The popularity of college athletics, which can be gauged by the formation of the campus Athletic Association in 1892, grew because college men thought organized sport made a major contribution to the moral, intellectual, and social bases of sound character.

The idealist orientation of the OAC programme at the turn of the century is also apparent on the scientific side of the curriculum. C.C. James told farmers in the early 1890s that the promise of the new agriculture could only be realized with the aid of the sciences. Practical or non-scientific approaches to agricultural questions had not answered many of the most important of them. And practical experience, even when it arrived at correct information, was simply too slow a means of obtaining it. The anticipated complexities of the new agriculture merely magnified the inadequacies of practical experience. By the late 1880s, OAC men had concluded that science in agriculture offered the only negotiable path of advance. Scientific knowledge, however, was itself still often limited and, where it was definite, reliable agricultural applications had yet to be worked out over a wide area. Scientific progress depended upon easing the hitherto tight Baconian and conservative Protestant restrictions on speculative reason. Informed theory would have to be the motor of empirical research because, contrary to Baconian expectation, even the most rigorous experimental scientific and practical observations, since inevitably still partial and often contradictory, had failed, in and of themselves, to impose adequate patterns of understanding. Idealism permitted this departure from mid-Victorian intellectual convention. As will be shown, OAC men expressed their high aspirations for the intellect in scientific farming in idealist terms.

Although James Mills had argued since becoming college president in 1879 that science (and chemistry in particular) was the true foundation of agricultural knowledge, the provincial government's new commitment to science in agriculture

was not formally launched until 1888 (at the convocation for the first graduating class in the Bachelor of the Science of Agriculture degree programme). The degree could be obtained by those who remained at OAC for a third year of study after successful completion of the existing two-year programme. The third year's concentration on "advanced practical instruction in Chemistry" gave it the scientific orientation for which Mills had longed. Moreover, unlike the students in the first and second years, those in this "post-graduate course" were not obligated to perform manual labour on the farm.<sup>27</sup> In 1888 Mills reported that the college had arranged an affiliation with the University of Toronto for the purpose of conferring the BSA degree on those who successfully completed the third year of study. The third-year student received instruction from the college professors in Guelph but the university's appointees conducted the examinations. The third-year curriculum was rounded out with compulsory courses in natural history, "mechanical drawing," English, and options in geology, agriculture, dairying, mathematics, and Latin. In October 1888 the first five Bachelors of the Science of Agriculture were granted their degrees in a special convocation at the university.<sup>28</sup>

The college's facilities and staff soon expanded to accommodate the scientific priorities. In sharp contrast with the views of the founders of the college and former Professor Brown (who did not think OAC students should be scientists in any way), James Mills said in 1891 that OAC intended to produce "first-class chemists" and "good botanists."<sup>29</sup> A chemistry laboratory opened in 1887. Construction of a botany laboratory was completed in 1892. When the chemistry laboratory was destroyed by fire in 1896 a new one, which was twice as large as

the original, was erected in the same year. In 1901 a fourth year of scientific study was added to the BSA programme, and in 1902 a biology and physics building was built.

The science faculty also grew during these years as the best members of the early classes of BSAs were hired as professors. By 1898, a decade after the graduation of the first class of BSAs, eight of the sixteen staff members at OAC in scientific and agricultural subjects had the degree. Three of the other eight were graduates of the two-year college programme.<sup>30</sup> Of the six members of the faculty who taught only science subjects in 1898, four had the BSA. Of this group, Manning Doherty also had a master's degree from Cornell University and F.C. Harrison, who became the college's first bacteriologist in 1895, had studied bacteriology in the summer of that year at Harvard and Yale. (He later obtained a doctorate in science from McGill University.) The two science professors who did not have a BSA were A.E. Shuttleworth (who had a doctorate in chemistry) and William Lochhead (the professor of biology and geology) who had a master's degree in science from Cornell. The appointment in 1891 of OAC chemistry professor C.C. James, a Victoria College graduate, as Deputy Minister of Agriculture for Ontario is itself a further indication of the provincial government's growing emphasis on finding scientific leaders and remedies for rural problems through the agricultural college.<sup>31</sup>

The college-based Ontario Agricultural and Experimental Union became the most important link between the scientific experts at OAC and Ontario farmers. Under the direction of C.A. Zavitz (BSA), the college experimentalist in field



agriculture, the union pursued practical applications of scientific experiments conducted in the college laboratories. Before Zavitz came on staff at the college in 1888, experimental work had been done almost entirely on the OAC farm. In 1886 one experiment was conducted elsewhere in the province by twelve former college students working under farm supervision. The farm directed another experiment with ninety experimenters in 1888. Zavitz wanted to extend the variety, number, and frequency of experiments because single experiments, seldom repeated, and conducted principally on the farm were of little value to farmers in other parts of the province where different environmental conditions obtained. After 1890 growing urgency in college circles about the need for experimental work quickly swelled the statistics for experiments. There were four experiments in 1890 and twelve in 1891 done by 203 experimenters. The figures continued to increase during the decade until in 1900 Zavitz and the Agricultural and Experimental Union organized and directed thirty-one experiments conducted by 2,354 experimenters. Almost every township in the province was represented in the list of participants. Zavitz said that "many of Ontario's best farmers joined in these cooperative experiments in agriculture."<sup>32</sup> By the mid-1890s, leading members of the science staff chaired or sat on union committees which devised such practical field trials in the major sectors of the new agriculture. Between 1896 and 1900, for example, there were experimental committees on botany, entomology, soil physics, chemistry, dairying, horticulture, agriculture, livestock, and poultry. OAC's science professors became public figures in rural Ontario. They responded to hundreds of letters of inquiry each year from the general public. They also delivered addresses to various agricultural associations and wrote newspaper and periodical articles and college

technical bulletins and other reports. The Ontario government demonstrated a commitment to the experimental solution to rural problems by increasing the annual grant to the union from \$200.00 in 1890 to \$1200.00 in 1900. John Dryden gave the rising expenditure an unqualified endorsement. "No money," he said, "which the Legislature annually gives for the purpose of the development of any of our industries is doing greater service than that which is annually given to the Union."<sup>33</sup>

The hopes animating the ambitious experimental programme in the 1890s were buoyed by the continuing transformation, rapid expansion, and, in the second half of the decade, economic recovery of agriculture in Ontario. By the early 1890s a major shift had already occurred in land use patterns in the province. Between 1882 and 1891 the traditional principal grain crops -- wheat and barley -- were grown on an average of 19.9 per cent of cleared farmland, but fodder and forage crops such as oats, corn, roots, hay, and clover were grown on an average of 38.7 per cent of that land. Between 1892 and 1901 the average amount of land in wheat and barley dropped to 14 per cent and rose to 42.9 per cent for forage and fodder crops. Ontario farmers were using more and more of their land and crops to support livestock in the last twenty years of the nineteenth century.<sup>34</sup>

This development is also registered by the growing number and increasing market value of livestock. In 1882 there were about 10 million farm animals in the province. By 1901 the number had reached about 15.9 million. The value of livestock in Ontario grew by over 50 per cent between 1892 and 1901 or from \$80 million to \$129 million. Canadian exports of live animals continued to increase at

the end of the century, although not uniformly. Between 1881 and 1890 the country exported an annual average of 91,000 cattle and 340,000 sheep and lambs. In the next decade the annual averages were 140,000 cattle and 340,000 sheep and lambs.<sup>35</sup>

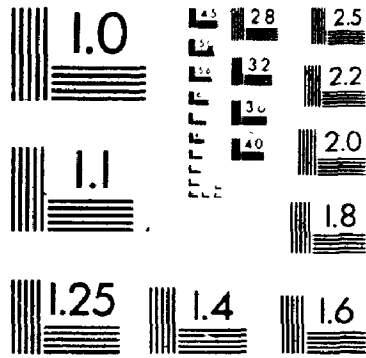
The statistics for exports of animal products also throw light on the rapid growth of the Canadian meat-processing and -packing industry. In 1891 only about 7.9 million pounds of bacon, beef, ham, and pork were exported. By 1901 meat exports had risen sharply to about 115.9 million pounds. Despite the increase in meat exports, butter and cheese still easily dominated the Canadian trade in animal products. Their lead, though, diminished from about ten times the value of all meat products in 1891 to about twice that in 1901. Butter exports went from 3.7 million pounds in 1891 to 16.3 million in 1901 and cheese exports from 106 million pounds to 195 million over the same period.<sup>36</sup>

On the heels of growth in dairying came the revival of market values of field crops in Ontario. There was a steady rise in the value per acre of field crops from the low point for the 1890s of \$10.44 in 1896 to the high point for the 1900s of \$18.99 in 1907.<sup>37</sup> The yield per acre of the principal field crops rose with their market value between 1892 and 1911. From 1892 to 1901 the average yield per acre of fall and spring wheat was 20.1 and 15.2 bushels respectively. These amounts went up to an average of 23.5 and 17.9 bushels respectively between 1902 and 1911. Barley increased from an average of 26 to 30.5 bushels over the same time. Hay and clover increased from 1.3 tons per acre to 1.5, and oats went from 35.1 to 36.6 bushels.<sup>38</sup>

The college and the Ontario Department of Agriculture were immensely satisfied with the extent of the transformation, growth, and recovery of the provincial agricultural economy at the turn of the century. In an address to the Agricultural and Experimental Union in 1903, C.C. James put the total value of farm property in Ontario in 1901 at just over one billion dollars. That, he said, included an increase of about \$140 million since 1897. Livestock-raising and dairying were largely but not solely responsible for the expansion of Ontario farming. "While we have been increasing the output of live stock and cheese," James remarked, "our great crop-producing capabilities have been going ahead at the same time. The productiveness of the soil of the country has been increasing . . . . The condition to-day is better than it has been for twenty or twenty-five years."<sup>39</sup>

In 1903 James told a meeting of the Agricultural and Experimental Union that OAC was the most important influence behind the improved position of farming in the province. The deputy minister's assessment was eagerly encouraged in college circles. As if returning the compliment, The OAC Review remarked in 1899 that Ontario had attained "unrivalled prominence as an agricultural province" on the strength of the provincial government's support for agricultural education. Later in the year the Review congratulated the Experimental Union on its indispensable contribution to Ontario's claim to be the richest and most productive agricultural region in Canada. "By the patient and continued efforts of this army of workers," the Review said, "Ontario is not only maintaining, but increasing its superiority as an agricultural province."<sup>40</sup> Readers of the Review had only to consult the available agricultural statistics for

# 3



confirmation of Ontario's endowment as the country's agricultural heartland. In 1901 Ontario, with 21.3 million acres, had more land in farms than any other province. The entire prairie region, where 15.3 million acres were in farms, was a still distant second. Ontario alone in 1900 produced 52.3 per cent of the total value of Canadian field crops and 52 per cent of the total value of Canadian dairy products. The province also had most of the country's livestock in 1901: 44 per cent of the milch cows and other horned cattle; 40 per cent of the sheep, 66 per cent of the swine; and 58 per cent of the poultry. And Ontario actually produced more wheat in 1900 than any other single province and the entire prairie region. In James's estimation, Ontario's billion dollar agricultural economy made farming "our greatest industry."<sup>41</sup>

OAC's contribution to Ontario's undisputed leadership in Canadian agriculture earned it a central place in rural life in the province. By 1899 and the twenty-fifth anniversary of the opening of the college and farm President Mills could report that "unbounded confidence in the growth and prosperity of the College has been noticed in the institution, among the ex-students, and in a rapidly widening circle outside." The college experimentalist, C.A. Zavitz, was not reticent about saying that the experimental programme deserved particular credit for helping to improve OAC's standing in rural Ontario. He linked the programme with rising student enrolment and the increasing number of farmers and their families which had visited the college and farm during the annual excursions to Guelph that had been organized by the provincial government. In 1897, 18,050 excursionists toured the OAC grounds. The number rose steadily each year until 45,000 made the trip in 1904. At the end of the nineteenth

century enrolment recovered from the downward trend of the 1880s. In 1892 there were 159 students on the roll compared with the low point for enrolment in the previous decade of 110 in 1887. In 1900, 259 students were enrolled — the highest total recorded to that date. As pleasing was the significant rise in the proportion of Ontario residents on the roll. It grew from the low point of 61 per cent in 1885 to 83 per cent in 1900.<sup>42</sup> By 1905, 336 students were in the "general course," which led after two years to the Associate Diploma in agriculture or, for those who studied a further two years, to the BSA. Various "short courses" had an enrolment of an additional 310 students. Twenty-nine students earned the BSA in 1905. In 1910 the number of students in the general programme reached a new high of 443. The total in the short courses was 532. Twenty-eight students received the BSA.<sup>43</sup>

Provincial agricultural officials attributed OAC's success to the idealism of college men. Their idealism also promised an even greater role for OAC in the ongoing development of the new agriculture. Looking back in 1906 over recent college and rural progress in the province, Ontario's Minister of Agriculture, Nelson Monteith (BSA), who in the previous year had become the first college graduate to serve as provincial agriculture minister, reminded OAC students that their work with Ontario's farmers had not yet been completed. "I look to the young men," he continued, "to the student body, to go out among them and still further raise the ideal of life upon the farm. I believe you are the leaven that is able to do it . . . . It is an inspiration to look around on the splendid student body we have here to-day, and feel that they are being imbued from day to day with higher ideals as citizens of this Province." C.C. James made a similar appeal to

OAC students a few years later when he charged them to "go out, so to speak, as missionaries and to carry what some people call 'the gospel of the new agriculture' to the world at large."<sup>44</sup>

Practical idealism took hold at OAC in the late 1880s because it promised to solve Ontario's most difficult rural problems when failure to do so would have dealt a devastating setback to farming's already far too precarious progress. Practical idealism indicated that heretofore concealed intellectual depths to agricultural problems could be reached by developing previously untapped capacities of mind and character. And, as has been shown, idealism permitted the view that farming was the vocation which was most accessible to the natural, interior structures of existence. Practical idealists could thus expect to master the scientific and technical complexities of the new mixed agriculture; they could be sure that Ontario farmers could compete successfully in the global agricultural economy which was emerging at the end of the nineteenth century; and if agriculture in Ontario could be rejuvenated along these lines, there would be an unparalleled infusion into Canadian society of spiritual, intellectual, and moral power through agrarian idealists. Practical idealism thus made possible a confident reaffirmation of the preeminence of rural life in the face of the agricultural problems of the 1880s and in an increasingly volatile industrializing and urbanizing world.

Farmers could actually embrace modern change with the certainty that the idealism elicited by the enlarged challenge of the new agricultural would make plain the inherent superiority of rural life. The rural backwardness which had



continually hampered the attempts of progressive farmers to keep agriculture abreast of modern developments in industry and urban life would finally be removed. Agrarian idealists who had had the benefit of an upbringing in a regenerated rural Ontario would easily qualify for wider service in Ontario and Canada's leadership elite with like-minded idealists from other walks of life.

Practical idealism at OAC also reinvigorated the Ontario agrarian nationalism which Principal Johnston had articulated in the 1870s as the main purpose of the college and which the troubles of the 1880s had left unfulfilled. If rural life was the preferred means of achieving idealism's broad regenerative purposes, Ontario farmers were in the most advantageous position to assist them. Ontario had the best rural base from which to start the idealist renewal. Despite its problems, and the expansion of prairie agriculture, Ontario clearly had the largest, most diversified, and advanced agricultural sector in Canada before World War I. Furthermore, Ontario's rural mission was the logical culmination of the province's distinctive historical experience. Ontario also had the natural setting (soil, climate, topography, and geographical location) and the British, moral, social, and racial character which suited its farmers best for the agrarian idealist mission in Canada. With the foundations of Canadian society thus secured, the country could not be better prepared for assumption of the approaching, heavy imperial burden.

With these conceptions of the nature of the duties at hand for Ontario farmers, there could be little question about the validity of an agricultural education at OAC. Practical idealism put the *raison d'être* of the college on

unassailable ground. Realizing ideals through the new agriculture was no straightforward matter. It involved an intense soul-searching, mind-expanding struggle. The OAC student became a soldier in a rural army which was battling toward the higher ground of idealism. There was a clear need, then, for an educational institution which taught young men how the laws of nature and society could enable them to assert the prior claims of rural life in Canadian society. As Headmaster of Upper Canada College in the late 1890s, George Parkin relied on an idealist programme (designed for urban youth) to revitalize that institution after the Ontario government almost dissolved the faltering college in 1887.<sup>45</sup> At the turn of the century, those responsible for OAC accomplished a similar idealist educational success for rural youth at their own once beleaguered college.

## VI

### Spirit

Agrarian idealism at OAC offered, before all else, a means of buttressing the weakened spiritual foundations of modern life. The practical idealist at the college attempted to build his life on this irreducible, all-pervasive, and, thus, undoubted, spiritual reality. The student initiated this process by an encounter with the overwhelming presence of the spirit in nature and Christianity. The power of the spirit in nature awakened the spiritual resources in him which then aroused his latent moral and intellectual energies. In Jesus, Christianity gave the spirit ultimate human expression. As the supreme embodiment of rational, moral, spiritual power, Jesus was the model of perfected being. His life gave added spiritual dynamism as well as practical moral content to the surge of developmental force experienced in nature. The central claims of Christianity seemed to acquire much greater validity because they now rested on the immediate spiritual and moral impact of Jesus rather than on the authority of wooden doctrinal and scriptural accounts of him. This liberal Protestantism, which Christian idealists were advancing more generally in Anglo-Canadian religious life, wedded spiritual vitality with the intellectual rigour required of the modern scientific agriculturalist.

This chapter discusses the intellectual origins of the idealist spiritual affirmation at OAC and its manifestation in attitudes towards nature and in the emphases adopted in Christian teaching on the campus, particularly through the

college chapter of the Young Men's Christian Association. The YMCA tried to provide this spiritual basis and direction for an OAC education. The other principal features of the college academic and extracurricular programme -- scientific and literary studies, cultural activities, and organized athletics, which are discussed in the remaining two chapters -- were to develop modern moral, intellectual, social, and economic applications of spiritual force. The agrarian ideal at OAC was a vision of Ontario rural life in which the visible realms of nature, individual character, and social relations were flawless manifestations of invisible spiritual power.

This chapter begins with a discussion of the broader European intellectual ancestry of agrarian idealism at OAC. The large influence at the college of popular British literary figures such as Thomas Carlyle (1795-1881) is considered. Carlyle was deeply affected by the idealism of Kant, Fichte, and Goethe. He conveyed their ideas in popular form for a wide audience in the English-speaking world. By introducing some of his more academic readers in Britain to the German sources of his writings, Carlyle also assisted the triumph at mid-century of philosophical idealism in British higher education. This development had a profound impact on the philosophical underpinnings of university teaching in English-speaking Canada at the turn of the century.

The practical idealism of leading OAC staff members such as Professor James Reynolds reflects these varied influences. Reynolds's ideas are prominent throughout the chapter because he was ~~the~~ most important idealist on the teaching staff. Reynolds was raised on a farm in Durham County, Ontario. He

graduated from the University of Toronto with a bachelor's degree in 1893. There he had been greatly impressed by idealist Professor George Paxton Young. Although he began his career at OAC by teaching physics, mathematics, and English, Reynolds was increasingly drawn to the latter subject. In 1906 he became the college's first full-time English professor. He obtained a master's degree in English literature from the University of Toronto in 1911. Reynolds became President of Manitoba Agricultural College in 1915. He held that position until 1920, when he returned to OAC to serve as college president until he retired in 1928.

The mounting intellectual and economic problems facing Canadians at the turn of the century were topics of more than passing interest at Ontario Agricultural College. By 1900, said Professor Reynolds, modern societies had arrived on the shores of the "dark, broad seas" of knowledge. "The whole world of nature, of geography, and of society," he explained, "is brought within our ken. No part of nature or of society is any longer a Druidical enclosure to the inquiring or ambitious mind."<sup>1</sup> As OAC graduate Walter Brown noted, the intelligent farmer's social and economic agenda was indeed lengthy. The global nature of modern agriculture in Canada made it so:

This young nation is growing rapidly, and is calling into being different economic problems, faster, apparently, than our citizens are acquiring

the knowledge and ability to solve them. Our natural resources are awaiting development, while the amount of capital, and the number of men at our disposal are limited. Geographically, politically, and socially we lack unity and compactness. Inhabited Canada has ample length, but comparatively little breadth. Our Farthest West is bound to our Farthest East by a ribbon of steel, yet each has its own individuality, purposes, tastes and interests. Our provinces are federated by law; but differ materially in race, origin, language, institutions, aspirations and ideals. We are self-governing, yet subjects of the greatest Sovereign in Christendom. We are independent, yet part of a world-wide Empire. We are isolated in our destiny and individuality, yet stretch our whole length on the borders of a mighty, aggressive and ambitious Republic, whose people speak the same language, read the same books, observe similar laws, and practice the same political economy. . . .

How shall we develop our resources, increase our population, secure farm labour and domestic help, find avenues of advancement for our young men, keep our boys and girls on the farms, improve the social and intellectual attractiveness of the country, educate the farmers, artisans and unskilled workmen, remove the drudgery from the rural home, avoid industrial conflicts, abolish pauperism, intemperance and crime, control transportation facilities, monopolies and trusts, govern our cities, maintain our friendly relations with the United States, improve our status as a nation within the Empire, etc?<sup>2</sup>

Brown thought that these questions brought Canada to a critical turning point. "Circumstances," he claimed, "sometimes thrust upon a nation's attention problems of the first magnitude, and temporarily the whole people go to school. If they discover the real difficulties, and grapple with them until they are solved, then design new plans to meet the requirements of the new conditions, the nation

survives, while its people advance a step in civilization. On the other hand, should they fail, as so many have done and are doing, to meet the national crises, their days are numbered."<sup>3</sup>

For Reynolds, the very attempt to address these problems, given the positivist intellectual tendencies of the day, would have compounded them with ethical and religious uncertainties had it not been for idealism. Reynolds recognized that the ambitious critical intellect engaged in the solution of material problems could threaten perception of spiritual truth by substituting "definite knowledge" about existence for "the mystery" which had enveloped so much of it prior to the Victorian era. He had discovered, however, that nineteenth-century scientific rationalism had had a paradoxical effect on his own understanding of ultimate reality. "Science," he maintained, "while removing old mysteries, brings to light new ones; while she settles some problems, she suggests many more, and still the mystery remains."<sup>4</sup> Reynolds's spiritual confidence, at the edge of man's "dark, broad seas," was encouraged by idealism: "The bewilderment and oppression that fall on the human mind when viewing the vastness of time and space and matter are relieved by the acceptance of the Idealistic philosophy. . . . The Idealistic philosophy credits only two sorts of existence — the Infinite Spirit, and the finite spirit of man. Supported by this belief the mind gains its equilibrium, and the vast world no longer stands between the human spirit and the divine."<sup>5</sup>

Reynolds never expressed much awareness of the technical subtleties of philosophical idealism, and he was neither explicit in his short unpublished memoir

nor his many publications and addresses about all the sources of his idealism. Still, the surviving record does reveal one significant source -- the Scottish man of letters and social critic Thomas Carlyle. The evidence also allows Reynolds to be understood, like George Parkin and J.H. Putman (both of whose idealism was also greatly influenced by Carlyle), primarily as a practical idealist. Like Parkin and Putman, Reynolds found that idealism provided the necessary spiritual and moral basis for critical inquiry and practical action.

Reynolds thought Carlyle had done the most to cast this spiritual anchor into the treacherous currents of nineteenth-century rationalism and materialism. Carlyle's literary genius, which Reynolds said made him the greatest writer of English prose, showed him to be "the prophet of this century, a veritable Elijah, uttering denunciations against Mammonism, materialism, against idleness, insincerity and infidelity." Carlyle's "peculiar power as an interpreter of life," Reynolds explained, "lay in his deep insight and penetration beyond the surface into the true meaning and spiritual essence of things." Outward behaviour and material realities, Carlyle taught, and Reynolds pointed out, "are as windows through which the philosophic eye looks into infinitude itself." At this depth, the "mystic" Carlyle observed, "so spiritual is our daily life: all that we do springs out of mystery, spirit, invisible force."<sup>6</sup>

An individual's response to the mystery of existence determined everything in life for Carlyle. Sceptical denial of the unseen realm or lax, myopic indifference to it severed the roots of authentic values and purposeful activity. The result was swift decline into "the somnambulist state." There the pursuit of



banal creature comforts mesmerized human drones. As Carlyle saw it, a person must wrestle with the central questions imposed by the mystery of existence: "What am I? What is this unfathomable Thing I live in, which men name Universe? What is Life; what is Death? What am I to believe? What am I to do?" There were no ready-made answers to these questions. They could only be sought by the individual who, in awe before the gravity of the ultimate issues, discerned that the only adequate response was unceasing struggle in daily work toward the higher ground.<sup>7</sup>

Carlyle was by no means accomplished in academic philosophy. Yet his reading in the 1820s of German philosophy and literature by Kant and Goethe, among others, alleviated the personal spiritual anguish caused by the collapse of his childhood Christian faith. The Germans taught him that, regardless of the supposed inadequacies of orthodox Christianity, there remained a spiritual dimension to existence which governed the observable material order.<sup>8</sup> Carlyle was a prism refracting this philosophical light in essays, books, and lectures across the literary world of nineteenth-century Britain. During the late 1840s, his home in Chelsea was frequented by a number of brilliant young intellectuals. Among them were Charles Buller, Harriet Martineau, Thackeray, Dickens, Browning, Tennyson, Kingsley, and Thomas Arnold. They had come to maturity in the wake of eighteenth-century Enlightenment rationalism, the emerging historical and scientific criticism of the Bible, revolution and war in Europe, and the social distress and political dislocation in Britain brought on by the early stages of industrialization. Carlyle's own radical questioning of existence was pertinent in these unsettled conditions. His teaching that, against all doubt and decay, man

had illimitable spiritual resources with which to attain self-fulfilment and social improvement, worked like a tonic on the perplexed.<sup>9</sup>

Carlyle's influence on his British followers, from academics such as J.A. Froude to popular writers such as Samuel Smiles, is well known. Together their histories, novels, poetry, sermons, and lectures bolstered "the spiritual view of the world in an age of increasing materialism, and unbelief."<sup>10</sup> This literary outpouring inevitably attracted interest in Victorian Canada. For a number of prominent Canadians Carlyle became a central figure in the amalgam of academic philosophical and popular sources of their practical idealism. When Carlyle died in 1881, Principal Grant of Queen's mourned that the "world seems poorer, to me now that he is gone. What a grand spiritual force he was! As I read his writings now, I am half-crying." And George Parkin so absorbed the Carlylean vision that he has been described as a "Canadian Carlyle."<sup>11</sup>

Among other idealists in Canada who were deeply influenced by Carlyle are J.H. Putman and Archibald MacMechan. Putman drew on Carlyle's literary authority to justify educational reforms which were to ensure that the "ultimate purpose of education is a spiritual purpose and all real education is a spiritual work."<sup>12</sup> In MacMechan's view, "Saint Thomas of Carlyle," more than any other intellectual figure, helped place Christianity on firmer ground in works such as Sartor Resartus, which affirmed "a moral order in the universe." It is a measure of the value he placed on Carlyle's ideas, and of their continuing general appeal at the turn of the century, that MacMechan wrote introductions to reprints of two of Carlyle's books — one of which was Sartor Resartus. MacMechan believed his

teaching role as a professor of literature at Dalhousie was "essentially a religious one." In his lectures and literary and historical works, MacMechan tried to show how ancient Christian principles could support Carlylean content.<sup>13</sup>

Although Carlyle's passionate formulations of German idealism smoothed out its subtleties for general readers such as Reynolds, Parkin, Putman, and MacMechan, his popular works did draw discerning minds back to the original German philosophical sources. In so doing, Carlyle helped prepare the way for the philosophical idealism which dominated British and Canadian universities in the late nineteenth and early twentieth centuries.<sup>14</sup> Thus, at about the same time in their lives as Reynolds, Parkin, Putman, and MacMechan were first reading Carlyle, they were being exposed as university students to the academic idealism which he had also influenced.

The career of Scottish philosopher Edward Caird is a vantage point from which to examine more closely the nature of philosophical idealism and its migration to Canada. While a student at the University of Glasgow, Caird was introduced to the ideas of Schiller and Goethe by reading Carlyle. Caird then spent a year studying in Germany before attending Oxford in the 1860s. At Oxford he immersed himself in the works of Kant and Hegel under the guidance of the renowned Platonist Benjamin Jowett and in close association with T.H. Green, who was also strongly influenced by Carlyle.<sup>15</sup> Oxford in the 1860s and 1870s, particularly through Green's teaching, was the most important location of dissatisfaction with the reigning empiricism fashioned largely by Locke and Hume and invigorated by Bentham and John Stuart Mill. Early Victorian critics of

empiricism feared that its ultimate outcome would be anarchic individualism, amoral materialism, and agnosticism. Obviously unappeased by the moral checks and balances Mill believed he had built into his liberalism, John Grote, a forerunner of the idealist school, characterized Mill's ideas as "inexpressibly depressing and desolate."<sup>16</sup>

Idealists Caird and Green rejected the empiricist view that knowledge of the external world is conveyed by the senses to an essentially passive mental mirror which performs its task best in isolation from other aspects of human nature (such as emotion) which cause distortions of perception. Kant convinced them that the mind itself is an "active agent" which selects, organizes, and gives meaning to the messages delivered by the senses. The stream of discrete sensations is processed by the rational nature of the mind into something intelligible. Truth is not a straightforward correspondence between the object of perception and the impression that object makes on the canvas of the mind. Knowledge was the product of a conceptualizing mind working upon the material world. In effect, knowledge or reality had other than a solely objective material basis.<sup>17</sup>

Although Kant believed in the existence of a realm of the spirit, he thought the human mind could not penetrate it very far. Hegel, however, boldly attempted to bridge the material and spiritual worlds. He asserted the view that the work of the reasoning intellect could not go on entirely within a self-contained mental apartment. If knowledge was in large part the product of an active mind, what activated it? Contrary to Kant, but like Carlyle's mentors Goethe and Fichte, Hegel granted a positive formative role in orienting the mind's

activities to "the subjective side" of personality -- or "the whole individuality," "passion," or "the whole energy of will and character."<sup>18</sup> At the same time, however, if rational understanding had other than simply material origins (which were external to the mind) reason had to be inner and spiritual in nature. Hegel thought that rational knowledge had to be the manifestation of a mind or spirit external to the human mind and the material world. Ultimate or ideal truth is full comprehension of the rational basis of the universe which, in other words, is knowledge of what Hegel called the Absolute Idea or God. Man's purpose is to bring his will ("the subjective side") gradually into conformity with the ideal spirit so that he may facilitate its materialization in greater knowledge, higher morals, improved social relations, and thus a strong and stable polity. History, for Hegel, is a process toward complete realization of the rational spiritual ideal or God's will in human affairs:

Two elements, therefore, enter into the object of our investigation; the first the Idea, the second the complex of human passions; the one the warp, the other the woof of the vast tapestry of universal history. The concrete mean and union of the two is liberty, under the conditions of morality in a state. We have spoken of the idea of freedom as the nature of Spirit, and the absolute goal of history. . . . The history of the world begins with its general aim -- the realization of the idea of Spirit -- only in an implicit form (an sich) that is, as nature; an inmost unconscious instinct; and the whole process of history (as already observed) is directed to rendering this unconscious impulse a conscious one. Thus appearing in the form of merely natural existence, natural will -- that which has been called the subjective side -- physical craving, instinct, passion, private interest, as also opinion and subjective conception, -- spontaneously present themselves

at the very commencement. This vast congeries of volitions, interests and activities, constitute the instruments and means of the world-spirit for attaining its object; bringing it to consciousness, and realizing it. And this aim is none other than finding itself -- coming to itself -- and contemplating itself in concrete actuality.<sup>19</sup>

Edward Caird saw in the ideas of Carlyle, Kant, and Hegel a means of fortifying the philosophical basis of Christian faith against scepticism. The eagerness with which idealism was adopted at British universities indicates how deeply this need was felt. In the 1870s and 1880s, Caird at the University of Glasgow and Green at Oxford introduced their students to philosophical idealism. (George Parkin was among them at Oxford.) Through their writings, Caird and Green reached a wider international audience. By the time Caird returned to Oxford to teach in 1893, he and Green had produced a body of work which, despite the latter's death in 1882, placed them among the world's leading authorities on idealism.<sup>20</sup>

One of the other members of this international academic elite was John Watson of Queen's University, who had been Caird's best student at Glasgow in the early 1870s. In 1872 Watson arrived in Canada to begin a brilliant career (spanning nearly half a century) as professor of mental and moral philosophy at Queen's. Due mainly to the influence of Caird, Green, and Watson, idealism became the principal philosophical school at universities in English-speaking Canada about 1890. Idealism was formulated as a "practical creed" in important areas of Canadian educational and cultural life by men such as Parkin, Putman, MacMechan, and Reynolds. Putman studied under Watson at Queen's at

the turn of the century.<sup>21</sup> MacMechan and Reynolds, both of whom attended the University of Toronto in the 1880s, were exposed to the idealist teaching of Professor George Paxton Young. For Reynolds, the "noble" Young was "the greatest of scholars" at the university. Students such as MacMechan and Reynolds did not grasp the technical intricacies of idealism; nonetheless, as another of Young's admiring students remarked, the professor undoubtedly conveyed to them his commitment to "the ideal life."<sup>22</sup>

Reynolds took this idealist message to the OAC campus. In 1900 he told the members of the Ontario Agricultural and Experimental Union that he hoped OAC graduates "shall be men, shall be men of lofty ideals, shall be men of noble aspirations."<sup>23</sup> But what were these ideals? What was "the ideal life" at OAC? The practical agrarian idealism propounded at OAC was a means of navigating what Reynolds called "the dark, broad seas" of the modern world. By the turn of the century the ultimate shape of modern life in Ontario and the rest of Canada had not been clearly determined in the minds of OAC men. In this sense of unease, even alarm, they shared, but in a different setting, the intellectual framework or mind-set of such other Canadians as Parkin, Grant, and Putman. There were, OAC men believed, many troubling indications that a society which seemed to be losing its rural, spiritual, and moral bearings would inevitably careen out of control.<sup>24</sup> The new agriculture could, however, stabilize societal development along the correct path.

At OAC the ideal was a conception of the highest development of the new agriculture and Ontario rural life in the modern world. It was a vision of a

regenerated social order which would be brought into being largely by the moral force and intellectual power of Ontario's scientific farmers under the leadership of the college. Their idealism had a spiritual basis. James Reynolds spoke of "the spiritual forces that make ideals."<sup>25</sup> W.C. Good, who was in 1902-03 a chemistry instructor at OAC (and later in life a leading member of the Progressive party) told the college community that the means by which material wealth accumulates could not be known without a grasp of "the manifold and essentially spiritual nature of human life." "It would be an interesting inquiry for economists," he went on, " -- that of determining how far certain qualities of head and heart, the affections, the virtues, the religious life, affect industrial efficiency, -- how far, in fact, the primary seeking of the Kingdom of God and His righteousness is destined to add 'all these things,' and at the same time to qualify the users to make the most of them." For Good the material and spiritual were tightly intertwined:

In this world of sense and time the warp of matter is shot through with the woof of spirit, and many a strange pattern results -- patterns of glorious brilliancy or of sober steadfastness, patterns in divers colours, patterns beautiful and full of inspiration, patterns ugly and dispiriting, patterns faded and torn and incomplete -- all these coming from the loom of time, and teaching men lessons in economy; whereof, indeed, no one has yet caught the secret save he with mind and heart tuned to the music of the ideal.<sup>26</sup>

The ideal for Good was the Christian spiritual power pervading existence. The student of the science of economics, he said, "studies the outward manifestations of the ideal." Good then added:



In fact, the ideal hovers over all sciences, for example over Biology and Chemistry, for no true student of these sciences can long remain oblivious to the mysterious force which permeates all the world of nature, and guides those vast movements and evolutions which fascinate the observer:

'The one far off divine event

To which the whole creation moves,'

cannot be separated from the world of nature, studied by the naturalist, the physicist and chemist.<sup>27</sup>

As the agrarian idealist probed the economic and natural world in his studies at OAC, he soon came upon their divine dimension -- which involved a form of spiritual understanding he must acquire before further rural progress was possible. OAC student J.R. Hutton employed a stanza of unattributed verse to express this idea:

'The works of God are fair for naught,  
Unless our eyes, in seeing,  
See hidden in the thing, the thought  
That animates its being.'<sup>28</sup>

Idealists taught that this rational, divine, spirit was the basis of existence. Nature embodied the spiritual reality and mediated it to man by quickening the spiritual resources of those who sought this experience in nature. Unlike their early Victorian counterparts, OAC men did not think that a "primeval curse" had left man and nature as badly flawed relections of an ultimate spiritual reality or God which existed beyond them. As historians Peter Gordon and John White note, idealists taught that "nature has now a more positive role in the universal

order. . . . It is one form in which Spirit comes to express itself." Study of man and nature could provide the most direct access to the divine power within them. The thoroughgoing spiritual character of the universe, as Reynolds said, meant that God and man could no longer be thought to be widely separated by the immense, essentially alien material realm.<sup>29</sup> Man is not then in conflict with nature, forcing it to serve his ends. He does not impose greater order or beauty upon nature as much as assist the spiritual power in nature to do so. This force is hindered by human ignorance, selfishness, and dullness of spirit. The new availability of divine moral power within nature placed a truly harmonious relationship between God, man, and nature well within reach. This prospect was a cornerstone of the agrarian ideal. As OAC science professor William Lochhead said, "A cry has gone forth that we must get back to Nature and study her ways, if we are ever to realize the best and highest ideals of education." Lochhead expanded on this view in a comment made elsewhere in The OAC Review on what he saw as a general change in popular attitudes towards nature:

If we rightly apprehend the signs of the times, our grand old mother, Nature, is to be studied, appreciated, and loved as never before. The great source of beauty, of inspiration, of truth; the perfection of art, the soul of poetry, the mysterious something which bespeaks a beneficent Creator, will be known to men. Beauty, harmony, and truth will fill their lives, learning from Her -- the great visible teacher in whom all perfection dwells.<sup>30</sup>

James Reynolds thought that Archibald Lampman's poetry captured the essence of this shift in perception of nature. Reynolds recommended a poem to college men in which Lampman wrote of the spiritual awakening he experienced in

his walks through the countryside:

I felt what joyance all this nature has,  
 And saw myself made clear as in a glass,  
 How that my soul was for the most part dead.  
 O light, I cried, and heaven, with all your blue,  
 O earth, with all your sunny fruitfulness  
 And ye, tall lilies, of the wind-vexed field,  
 What power and beauty life indeed might yield,  
 Could we but cast away its conscious stress,  
 Simple of heart becoming even as you.<sup>31</sup>

The President of the University of Toronto, Sir Robert Falconer, who was also one of the leading idealists in English-speaking Canada at the turn of the century, outlined the broad social implications of nature's transforming power in an address at OAC in 1907. Within the natural world, he said, "there is the one underlying order, and that order, I believe you all recognize, is a moral order." Obedience to this moral "law" enabled a farmer to bring a new "spirit" to his work:

A man who goes with such a spirit as this out into his daily work is more than a drudge, and he finds in his work a means of education, his day's toil as he goes to it in the morning and returns in the evening becomes to him a means of elevating him; he is not merely lost in the routine of things, but he discovers as the days pass that, through the instrumentality of his daily toil, he is developing within him those things that are permanent, those things that set him above the daily toil, and that make him the master of the situation where he is.<sup>32</sup>

The mind and character of the farmer could be elevated to even greater heights by an education at OAC. This in turn would release into modern society the saving power of the rural "moral ideal":

And so such an institution as this should be sending out into our country men and women of power and insight and of breadth; and we may look to the future to have in our farms and from our farms even greater results than the past. . . .

I hope also that the relative proportion between the farming population and the urban and village population may not be changed to the detriment of the farm. It will be a sad day for us should it ever come -- I do not believe that in Canada it ever will -- but it will be a sad day should the time ever come when people would rush from our lands into the cities, and crowd themselves into mean and narrow streets; lose their individualities, as is so often the case, in factories, and have their children brought where they have no breadth and scope, and where they hardly know whether there are stars or not . . . .

If the life of the people through the country is kept healthy and pure as it has been (and we come from good stock), if the duties of the citizen are wrought into the minds of those who are on the farm, then I believe there will be a strong, healthful, public interest abroad, and the life of the country as a whole will remain pure, or will be purified. And so I would urge you, when you go out, to carry your education with you, and not to think that you can live a life to yourselves. The man or woman who lives a life to himself or herself may become a wealthy farmer, or a wealthy farmer's wife, but each will become a narrow individual, who will be of very little value to anyone. But if you go out with a fine sense of your duty, a fine sense of your responsibility to others, with an elevated moral ideal animating you, the resolve even if

it be at some cost to yourselves and with actual reluctance, nevertheless taking your place, in the rural parts, in the school sections, in the municipal councils, or wherever it may be, then you will be contributing of what you have received here, and enabling those who come after you to get some greater share of the privileges that you yourself owe to others who have preceded you.<sup>33</sup>

For OAC men, the moral ideal implicit in the natural order was best understood within a Christian framework. In James Reynolds's words, "The world is fed by the farm. Wealth in its divinest form is produced there. The highest ideal of Christian conduct is service, and to accept the work of producing part of the world's food is to realize that ideal of conduct."<sup>34</sup> OAC officials thought it vital to ensure that the college experience deepened the student's Christian spirituality. The campus chapter of the Young Men's Christian Association was the focal point for Christian work at the college. The chapter was founded in 1889 with the full support of college President James Mills, who himself was a prominent Methodist layman. Mill's made one of the college rooms (a former smoking room, he was pleased to point out) available to the association.<sup>35</sup> The association attempted to infuse a spiritual perspective into every aspect of a student's life.

The first vice-president of the YMCA in 1889, C.A. Zavitz (BSA), who had a long and distinguished career as OAC's Professor of Field Husbandry and Experimentalist, believed deeply in the primacy of the spirit. "The true quality," he said late in his life, "of character, conduct and influence of all people depends upon their spiritual cooperation with God who is the very source of intelligence,

wisdom, love, goodness and power. . . . During and since my forty-one years of very active service in college teaching and in scientific research in agriculture, the Christ Spirit within me has been the most precious thing in my life."<sup>36</sup> YMCA spokesmen believed the association had a "special responsibility" to nurture the student's "relationship to God and his duty towards his fellow man." The YMCA viewed itself as the guardian of campus social and moral standards. "It is here," said one spokesman, "to uncover and expose to right influences any evil tendencies which may appear in the student body." He added that the association also existed to ensure that every student had opportunity for "development to the fullest extent of all sides of Christian manhood, physical, mental, social, and spiritual" through such extracurricular means as group Bible studies, the Literary Society, and the Athletic Association. The college YMCA pursued an even larger role in Ontario rural life in 1915 when a graduate of the BSA programme was hired as the association's first full-time Student Secretary. He supervised YMCA work at the college during the academic year. In the summer, he helped organize rural debating clubs, boys' clubs and camps, Sunday School groups, leadership training classes, and team sports in order to create "community spirit."<sup>37</sup>

The stewards of campus spiritual life in the YMCA saw reason to be vigilant. They believed that, if misconceived, material and educational progress could weaken faith and morals. YMCA leaders thought that without their Christian witness the study of natural science at the college could leave the uncritical Christian faith of many students severely shaken. One such student, Paul Angle, a graduate of the class of 1909, discovered that participation in YMCA activities shored up his wavering religious faith when it seemed to him

that the theory of evolution appeared to contradict the account of divine creation in Genesis. Through the association, Angle became acquainted with James Reynolds, who happened to be its honorary president at that time. Angle later said, "I shall never forget his guidance in the controversy engendered by the teaching of the theory of evolution in our study of Zoology. . . . Reynolds' advice was: 'Don't get excited, religion is a personal matter which deals with a part of one's personality that cannot be materially measured. If it has meant something to you, cling to it till you can reconcile the two views, or can intelligently and honestly prove to yourself the inadequacy of one or the other, be not the first to use the new or yet the last to cast the old aside.'" Angle not only found that this suggestion helped him to see religion and science "as complementary," but it also contained a principle "to apply towards new developments in any area of life's problems."<sup>38</sup>

By the turn of the century, evolution had been accepted at the college. Little insight, unfortunately, can be gained into the nature of the controversy surrounding it. The archival and other documentation on the subject has not yet come to light if, in fact, it has survived. The still considerable tension evolution seems to have caused may well have been evident in the sort of private counselling Angle received from Reynolds, classroom discussions, dormitory room debates, and YMCA Bible studies. The general movement of thought towards acceptance of evolution at OAC seems clear enough though. One unidentified student at the college in the 1890s recorded his impression of the issue:

We were a group of farm boys who had been cradled in an atmosphere

of puritanical fundamentalism. Parental sentiment had made church attendance compulsory at college as well as at home. During that decade the most popular pulpiteers were those best able to hold up to scoff and scorn, any and all who harboured favourable opinions of the theories of Darwin, Huxley and others of their school of thought. But compulsory attendance of lectures and laboratories gradually led to a broader vision. Perhaps at no time in the history of the college was Fundamentalism versus Darwinism so much and so earnestly discussed by students.<sup>39</sup>

The "broader vision" emerging at OAC had much to do with the changing views on evolution of staff members such as James Panton, the Professor of Natural History and Geology from 1885 until his death in 1898. Panton, a great admirer of Professor William Dawson of McGill, Darwinism's greatest nineteenth-century academic critic, told a church young people's meeting in 1884 that the theory of evolution was "a glorious guess at hidden truth" -- "an hypothesis."<sup>40</sup> In 1904, however, when OAC alumni and former colleagues gathered to unveil a portrait of Panton (which would hang in his honour at the college), Walter Brown, a former student, warmly recalled how important Panton's reconciliation of Christianity and evolution had been to those he had taught:

He unfolded to us the laws of nature, her secrets, and her beauties. . . . The scales were removed from our eyes. We saw a new world, we heard new music and felt a strange thrill as he led us through nature to nature's God . . . . He showed us how the upward progress from Protozoan simplicity, through Fish and Amphibian and Reptile and Mammal, had culminated at last in Man himself, the crown of creation, sharing with the animal kingdom a place in nature, but asserting by his intellectual and spiritual endowments a place above



nature. He emphasized the fact that the science of Geology leaves full scope for faith, and that the power, whose modes of working may be revealed only in part, is intelligent and personal, while the whole process of the evolution of Man and his dwelling place has been guided by infinite Wisdom to the fulfilment of a purpose of infinite love.<sup>41</sup>

What had made "a glorious guess at hidden truth" the thrilling "new music" of nature in evolution? Panton did not leave an account of his change of view which is currently available. However, those such as Walter Brown and James Reynolds, who shared Panton's sense of theistic evolution, expressed a religious outlook which bore the same liberal mark idealism had been leaving on Christian faith throughout Protestant English-speaking Canada. These individuals were developing a Christian position the validity of which was not dependent on either the literal truth of a wide range of specific, fixed creeds or the historical and scientific accuracy of the entire Bible.<sup>42</sup> Brown turned to other prior sources of religious belief. In an article entitled "Philosophy of Religion," he said "that man is constitutionally a religious being: that he has a religious nature, instincts, and emotions." Religion was also, of course, a matter for the intellect, but the status of faith was not to be arbitrated by the intellect alone:

In man's nature there is no heart without a head, and no enthusiasm without reason. . . . We never have intelligence without emotion; and we never have, in the rational mind, emotion without intelligence. . . .

But even if religion were only an emotion, that would not prove it untrue, or without an important function. The existence and function of the emotions are facts of human consciousness and experience, and history shows that feeling is just as necessary and important as

thought. Emotion is, in fact, the great working force of practical life; without it the great enterprises and industries of the world would not only stand still but cease to exist.<sup>43</sup>

Brown, like Reynolds in his advice to Paul Angle, seemed to be saying that truth is erected over time on the broad base of emotion, instinct, will, soul, experience, and reason. (Thus Brown emphasized the lesson of "history" and Reynolds urged patience and caution during periods of religious questioning.) If one part of the base is weakened (as Darwinism and higher criticism had shaken the intellectual component), the whole structure does not necessarily fall. Weight is transferred to other still powerful supports. Gradually the load is appropriately redistributed as head and heart adjust to the new conditions. (Here, in effect, was the process of adaptation Reynolds recommended to a grateful Angle.)

Based on his understanding of human nature and the necessary "practical" role of religious emotion, Brown rejected the views of those such as Auguste Comte who had predicted the disappearance of religious belief once the scientific era of human history dawned. Like Reynolds, Brown's organic (or idealist) conception of ultimate truth and of the reciprocal action of mind and heart led him to conclude that new "intelligence" (in the form of scientific discovery) would stimulate religious "emotion" and prompt new articulations of faith (which could be made with the assistance of philosophical insights):

The theory that religion is a temporary stage of human progress, and not a permanent form of human development, is contradicted by consciousness, experience, and history. Comte's great social law that

the individual and society pass through three stages in their progress from savagery to civilization -- that is, the theological, metaphysical, and scientific -- is in no sense true. Is there such a law of social progress? It is certainly true that theology, philosophy and science are three forms of human development, which are mutually inclusive, and not exclusive, of each other. As forms of human development, they co-exist in the same individual and in the same society. They do not injure, but assist, each other; and science attains its largest growth only when accompanied by philosophy and religion. The present is the most scientific age the world ever saw, and it is, at the same time, the most philosophical and religious. The German, French, and English-speaking peoples are more scientific than any other people on our globe, and, at the same time, they are truly philosophical and religious. Religion is, therefore, a permanent element in human character, and a persistent factor in human progress. Man will never outgrow his capacity for it, his need of it, and its influence upon his life and character. Its influence upon man is permanent, and will become universal. It is demanded by man and nature; it meets a universal want. It is the result of the exercise of man's spiritual faculty, and grows out of his relation to God as his Creator and Saviour. His religious nature recognizes this revelation, and the duties which grow out of it. Man's universal effort to discharge these duties is comprehensively, the essence of his religion.<sup>44</sup>

Christianity thus survived the onslaught of science in this scheme of things, but not without significant reorientation. The place of the mind in the life of faith remained crucial, but specific intellectual supports for and formulations of the faith had to be held somewhat more tentatively, as they were constantly susceptible to revision when knowledge progressed. The "essence" of Christianity for Brown was, therefore, not a particular creedal statement (helpful as that might be) but the "exercise" of the spirit in performance of practical "duties."

For OAC men, the one who best exemplified the essence of true religion was still Jesus. The striking feature about the Jesus whom campus religious advisors such as Reynolds offered the OAC student was his spiritual purpose and power. Jesus, said Reynolds, "declared that man does not live by bread alone, and He faltered not from the pursuit of the highest spiritual ends. It is recorded that He returned from a period of temptation in the power of the Spirit. In the power of the Spirit was His whole life guided."<sup>45</sup> And how was this spiritual strength to be manifest? Reynolds makes no mention of the traditional doctrine of individual salvation from sin as the goal of Jesus' mission. Instead, his powers were exhibited primarily in certain qualities of character: compassion for the weak and needy, service of others, humility, goodness, and mercy. In effect he advocated "the use of [such] power not for personal, but for social ends." This was essentially what God required of man. "Goodness and mercy," said Reynolds, "are twin graces, and together make the complete Christian character, for it is the character of God Himself. . . . In his [Jesus'] vision of the final judgement, the basis of approval or condemnation is the doing or not doing deeds of mercy to one who is unable to help or to protect himself."<sup>46</sup> Christianity had more to do with how one responded in simple practical action to the spirit's promptings than with over-elaborate beliefs, rigidly held. The dynamism of the spirit kept breaking through any such hardening of dogma, as Jesus' own example showed:

Essential truth He grasped with a sure hand, through all the husks of legalism and definition. Of the total content of doctrine which He inherited, what was of permanent value He retained, and gave it a new meaning by vivid phrase and living force of parable; what was cumbersome or useless He courageously threw away. No sophistry

could beguile Him. Out of a flippant or tricky inquiry He plucked occasion for utterance of the most solemn truths.<sup>47</sup>

By the turn of the century prominent OAC men saw practical Christian idealism as the best means of placing Ontario farming on the path towards the higher ground of the new agriculture. Agriculture empowered by spiritual ideals would finally be on the move. As one rural educator put it, rural leaders needed "what may be called the agricultural spirit, without which rural education will fall short of the ideal."<sup>48</sup> Old stereotypes of the static and limited nature of rural life would be shattered. The idealist's universe was alive with spiritual forces whose principal outlet was farming. The progressive farmer had to harness this power through educational institutions such as OAC. As that was accomplished, agriculture in Ontario would enter a new era of sustained development. There would never be a return to the faltering rural progress of the 1860s and 1870s or the doldrums of the late 1880s. Agriculture would not be eclipsed in importance by the growing urban and industrial sectors of the modern world. Rural Ontario would provide the most reliable basis for modern Canadian society while farmers could expect to "enjoy all the benefits of modern civilization while free from the dangers and vices of city life."<sup>49</sup>

This conception of agricultural development echoed an intellectual tradition which eventually reached back to Kant and Hegel. The tradition had been mediated by prominent literary figures such as Carlyle, and academics such as Edward Caird, John Watson, and George Paxton Young. Henry Jones (who was Caird's successor in the chair of moral philosophy at the University of Glasgow

and a former student of Caird's) thought that men such as these literary figures and academics (among whom it is also reasonable to include George Parkin, J.H. Putman, and OAC staff) were attempting to formulate idealism as a "practical creed." In Jones's view men of this type in various countries and walks of life were working out applications of the ideas of Goethe, Hegel, and Carlyle:

The practical business upon which the world is now engaged, whether in its commerce and its industries, or in its science and philosophy or in the battles of the sects and the war of the politicians, is that of making real the ideals of these prophets, giving them an actual footing and the right to rule amongst the common affairs of a common world. It is a great enterprise and meant to engage the best might of men for a long time to come.<sup>50</sup>

If they had seen it, OAC instructors would have agreed that Jones's dictum described exactly what they were trying to do at the college: make real in the Ontario rural setting the ideals needed to redeem Canada in a material age.

## VII

### Reason

OAC confidence in Ontario's agricultural future was buoyed at the turn of the century by the conviction that a moral order, in which the preeminence of rural life would be assured, could be fashioned in the modern age. The Ontario Arcadia college men hoped would be the basis of Canadian greatness was in sight. Beginning in the late 1880s, this agrarian idealist perspective shaped OAC attempts to regenerate Ontario agriculture. In order to seize the emerging opportunity to bring spirit, nature, and man into harmony, Ontario farmers had to make themselves much better vehicles for spiritual power and moral ideals through intellectual and character development. The present chapter examines the intellectual attributes which OAC men thought the Ontario agrarian idealist would have. The chapter begins with their criticism of the Ontario farmers' underdeveloped minds. This deficiency made it impossible to realize the economic and social promise of the new agriculture. As this chapter demonstrates, college men thought that the intellectual challenge of modern agriculture required of them a review along idealist lines of the role of the intellect in farming. They maintained that a farmer educated at the college would remove rural intellectual weaknesses by adopting an ideal of rural life which required expanded intellectual capacities to pursue.

At OAC, intellectual power would bring social respectability and influence

by creating a new, higher type of Ontario farmer. The farmer who had obtained the idealist key to agricultural knowledge at the college entered the provincial rural leadership elite. It was expected to do the most to fulfil the Ontario agrarian nationalist ideal. In the late nineteenth century, the OAC programme developed in ways which were designed to enlarge the intellectual capacities of this new farmer. The elements of the programme examined here in this role are the new scientific and literary studies and the increasingly important activities of the campus Literary Society.

Intellectual progress alone, however, could not realize the ideal. OAC's idealists thought it impossible to improve the mind adequately without character development. The farmer whose mind and character had been shaped at OAC was best prepared to undertake the task of raising rural Ontario to the national and indeed international preeminence within its grasp around 1900. The following chapter (eight) will examine the nature of character formation at OAC.

If, despite merely superficial flaws, nature was intrinsically orderly -- the embodiment of divine "thought" -- then rational human thought permitted man and nature to enter into harmony. This involved a rationalization of agriculture with the divine order of existence -- a project which invested college work with transcendent purposes. James Robertson, the very popular professor of dairying at OAC from 1886 to 1890, told faculty and students at a farewell banquet given in his honour that experimental stations were "one of the best works of God." College students should employ them in order to govern nature. "By studying



Nature's methods and God's ways in Nature," he continued, they "would have Nature's abundance." The OAC student who thus "formed himself after God's model" would become "a man of dominion and power" and help make Canada "the best land in the whole earth."<sup>1</sup>

As the market value of field crops slumped in the early 1890s, Robertson said Ontario needed an agricultural "revival" which, by adjusting farm production to new world market conditions, would allow farmers to enjoy fully mankind's privileged status as the divine reflection governing the created order. Robertson's call for economic rationalization in agriculture included the promise of unparalleled spiritual benefits:

In all the manifestations of the Godhead in nature, we see a constant endeavour to put and keep all things in their correct relationship with each other. When a farmer acts in that same way he is manifesting and justifying the possession of his noblest birthright as a man. The application of this principle is not limited to putting soil and seed in their proper relationships to each other through the best methods of cultivation; to putting animals and food in the correct relationship to each other as to quantity, quality and quarters; it should extend also to adjusting finished products which the farmer has to dispose of, to the needs and demands of the markets which he can reach. It also implies the correct adjustment of himself to his business as a master and manager and not as a disheartened imitator.<sup>2</sup>

The farmers' effort to understand the rational basis of modern agriculture, Robertson said, "will make them lovers of truth, and the truth, as distinguished from and corrective of ignorance and superstition, shall make them free. Then we

shall have a population that will realize Tennyson's noblest ideal of mankind: --'To live pure; to speak true; to right wrong; to follow Christ the King -- else wherefore born?' "<sup>3</sup>

The farmer, however, was still far from this ideal at the end of the nineteenth century. Indeed he had never been a widely respected "master" of his condition in Ontario. The organized movement for agricultural improvement took hold in Canada West in the 1840s and 1850s because its leaders believed increasing knowledge was rapidly about to make farming over from a means of bare subsistence into the principal instrument of human progress. Their enthusiasm rested on the association of advancing knowledge with the gradual restoration of mankind's privileged status in the natural paradise God established before the Fall brought down the "primeval curse." The mission of the early rural reformers in Canada West had been inherited at the end of the nineteenth century by Ontario's progressive farmers and agricultural officials in the provincial government and agricultural college. All the same, their brave contention that agriculture was the locomotive for Canadian progress was weakened by awareness of farming's social inferiority. In 1892 OAC student A.M. Soule drew attention again to this anomaly:

Some one has said agriculture is the basis of our national prosperity. Accordingly, it seems very strange that the occupation which directly or indirectly furnishes food to sustain the ever increasing population of the earth should be looked down on by so many people. How is it that farming is regarded with this disfavor by certain classes of the community? What reason have people for

despising the occupation that first received the attention of man, and still forms the chief employment of the majority of the human race, are questions that involuntarily arise in the mind.

For Soule, the farmer's social problems revealed a fundamental distortion in society which could only be removed by more rational approaches to farm work. They could only change the attitudes of others by changing themselves. "The great mistake," he said, "is in not planning the work properly. If more mental effort were exercised, things could be done to much better advantage with neatness and order, and these evils be effectively dealt with."

At the turn of the century, college men launched what they thought would be a final offensive against the remaining ramparts of unreason which surrounded outmoded agricultural methods and backward rural social conditions. In their view, the problems they combatted could not forestall the triumph of the progressive forces scientific agriculture had unleashed. At OAC, said Professor William Hutt, the young farmer was educated to be a rational "investigator" of the principles of agriculture. These efforts at ordering or rationalizing farm knowledge and work were lifting agriculture "from the realm of the haphazard to the position of a more exact science," or from practical trial-and-error to a rational intellectual pursuit. Scientific agriculture at OAC was far ahead of the ineffectual guesswork still too common in Ontario farming. And when guesswork inevitably failed a farmer might have grasped for even more rickety props. "If of the old school and versed in the 'signs'," Hutt said scornfully, "the cause of any crop failure or success will be some remote agency 'in the heavens above, or in the earth beneath, or in the wastes under the earth' ":

The moon is with him a wonder worker of marvelous and far-reaching power, affecting everything from the weather to the weaning of the last calf. It is useless to explain to him that it would not be difficult to calculate the exact position and appearance of the moon for any day in the future, and thus by his theory foretell the kind of weather years ahead. He replies that he does not know anything about that, but he knows that the moon does affect the weather for he has seen it. Such a man has often the eye of the artist to observe the wonders of nature and the heart of the poet to appreciate them, but lacks the knowledge and skill of the scientist to investigate and explain them.<sup>5</sup>

Deficiencies in rural ways of thinking, though hardly invincible, were not taken lightly at the college. Professor Reynolds saw these flaws as the residue of some extinct primitive type of humanity known only in the archaeological record. "The folk-lore, signs, and petty superstitions that may be heard on every hand," he said, "point back to an earlier period in the credulous childhood of the race." These primitive peoples were believed to have lived a nomadic, violent, and wasteful life as hunters and fishermen. Their technology was crude; their science was non-existent. Professor Lochhead drew attention to evidence of their practice of human sacrifice and cannibalism. They were "ape-like" in appearance and gait and answered only to passions and instincts. They bordered on the subhuman.<sup>6</sup>

The professors' historical analysis strongly implied that the Canadian descendants of early man entrenched a way of farming which bore the marks of their "brute ancestry." The old pioneer farming's simple wheat staple, grown year

after year in monotonous back-breaking routine until the soil wore out, fostered the primitive mentality discernable in "moon-farming," use of "divining rods," fear of "man-killing" insects, and weather prediction based on the behaviour of animals.<sup>7</sup> The old monoculture provided farmers only a thin strand of commerce and, therefore, social contact with the outside world. Their limited social experience produced the ignorance, narrow outlook, inertia, and prejudices the college men found so disturbing as well as the notorious and humiliating gullibility of the country "bumpkin" easily duped by pedlars of wondrous elixirs, fertilizers, and implements. At the worst, ruinous methods of farming created an identifiable social group made up of impoverished, slovenly farmers whose tumble-down homes and farms cast discredit on the entire profession and whose children fled the bleak drudgery of rural life for even more dubious pursuits at the first opportunity. "Retrograde farming," said a friend of OAC, "invariably produces retrograde human beings."<sup>8</sup>

Most Ontario farmers, including even many of those with progressive inclinations, were still some distance from the OAC ideal. Professor Brown described the farmers he encountered at meetings in the mid-1880s as "isolated, self-reliant, and retiring." The written presentations they gave at these meetings were not very polished and their discussions, though better than the papers, still had to be coaxed out of them.<sup>9</sup> James Mills had to admit that too many students arriving at OAC "are not only unable to speak or write correct English, but have apparently made up their minds that they will not study it or any other subject, unless you can first prove to them that it will put so many dollars into their pockets within a given time." Mills acknowledged that some men had taken up

farming without previous experience and had tried unsuccessfully to learn to farm solely with the aid of agricultural books. "Hence," he said, "the cry against 'book-farming', and the widespread conviction that the more a man reads and studies, the less likely he is to succeed as a farmer."<sup>10</sup> These men could hardly cope with the diversity and complexity of farming in the age of scientific agriculture dawning at the close of the nineteenth century.

Mills believed an OAC education built upon the sciences, English literature and composition, and experimental work would permit farming's intrinsic social dignity to overcome the restraints imposed by the physical demands of farm work.<sup>11</sup> Availability through OAC of these new means of advancing the science and social status of agriculture coincided in the 1890s with the completion of Ontario's transition to a prosperous and expanding mixed agricultural economy. The convergence of these powerful currents of rural progress called up Robertson's reference to the transcendent purpose of scientific agriculture in Ontario. As Ontario advanced to a higher agricultural system based on harmony with nature through rational organization of farm work, C.C. James, like Mills, anticipated new social horizons for rural life. They would eliminate the rural social distortions: rude insularity, paralyzing inarticulateness, cramping practicality, and materialism. James predicted that as farmers became more intellectual or scientific, they "begin to appreciate their situation a little more, to feel their own importance, to take greater interest in their work and to feel that their work is on a higher level; that after all, the practice of bee-keeping, stock-keeping and dairying is of quite as much importance and is quite as respectable as work in connection with the manufactures or any of the

professions. And why not?" The new farmer who would power Ontario's drive towards agricultural preeminence would be the social product of the new agriculture. And one of his principal attributes would be a critical, inquiring, scientific mind:

Here and there you will find a man who is not engaged in his work merely for the money that is in it: He is asking this question, 'Why is this so? What is the reason for it all?' He is constantly storing up in his mind the science in connection with the work. He is getting the knowledge of the why as well as of the how. He is working in the light, and he is beginning to take a deep interest in his work. As years go on he appears to be a leader. He is looked up to for information. He comes to be looked upon as an authority, and not only does he make progress mentally, but socially and financially as well. And just as we shall build up men of this kind, and as they raise themselves and their neighbors we shall find that the agriculture of this province will advance and take its stand side by side with the best agriculture of Europe, and it will be found that the well-trained, clear-thinking and educated agriculturalists of this country will be among the leaders of the country as they should be.<sup>12</sup>

James's optimism about rural prospects in the 1900s prompted him to proclaim that "the twentieth century is going to be the farmer's century."<sup>13</sup> How could this prophecy be fulfilled? How, then, could what men such as A.M. Soule and James saw as the underlying logic of agriculture's social and economic position be achieved? How could "reason" prevail in both agricultural work and society? How could the agrarian ideal be realized, and what did it mean to realize the ideal? The ideal could be approached through a process known as self-

realization, in which dormant and even previously undetected resources of mind and character were revealed, awakened, and then developed. According to James Reynolds, this was demonstrated by great historical and literary figures whose lives were upheld at OAC as models the students should emulate. An individual of this stature, he said, "is engaged all his life-long in self-development, self-expression, self-realization. And this is the modern idea of achievement -- self-realization."<sup>14</sup>

Reynolds's vocabulary reveals the idealist affinities of his thought. Political scientist and philosopher Charles Taylor explains that Hegelianism "is a philosophy of self-realization; becoming the vehicle of the universal is also for man a fulfilment -- or at least it will be when he is fully formed." Human history, Taylor continues, is "the outcome of the self-realizing actions of individuals." Hegel, he says, taught "that the universal can only come to be through such self-realizing actions. So now we step to a higher level in which we see individual self-realization as the expression of the universal. . . . The individual is now united in his action with external reality which therefore reflects reason."<sup>15</sup> Walter Houghton shows how Thomas Carlyle articulated an influential popular version of this idealism in the latter's explanation of the nature of progress:

In Carlyle, more influenced by the metaphysical speculations of the Germans, it was conceived as a gradual realization of ideals, in the philosophic sense, a progressive unfolding of the capabilities of humanity. The crude beginnings of justice develop in the course of time into closer and closer approximation to Justice. Carlyle's assurance that a new and brighter day will follow the present darkness



rests explicitly on his faith in 'the progress of man towards higher and nobler developments of whatever is highest and noblest in him . . . . Under the mortal body lies a soul which is immortal; which anew incarnates itself in fairer revelation.'<sup>16</sup>

For the Carlylean Reynolds, an education at OAC was 'the best means of awakening a rural youth's dormant potential and idealism. The college experience itself facilitated his emergence as a fully formed individual. It enabled him to realize his true self. Reynolds advised the OAC student "to reflect seriously on the critical situation in which he has been placed" as a member of the college community. In Reynolds's view, the years spent at OAC formed the decisive period in a college man's life. He came to Guelph in a highly impressionable state; his personality, opinions, and patterns of behaviour were largely unformed; the values which had guided his upbringing had not yet taken firm hold. At the college, he encountered "an entirely new set of opportunities." A new world opened before him. He was exposed to unfamiliar social experiences "by meeting classmates of widely different types, with widely different ideals and outlooks." And as Paul Angle's experience demonstrates, the OAC student might face for the first time religious doubts which could "make shipwreck of faith."<sup>17</sup>

The uncertainties and even perils of college life and the modern farmer's world could overwhelm the callow farm boys Reynolds saw in the student body. At OAC, students began to discern the immense potential of scientific and technical knowledge in agriculture and the widening social and political sphere accessible to him. He was introduced to a myriad of changes in crop and livestock production, food processing, marketing, economics, communication, and

transportation at home and abroad. He was made aware of an agriculture on the move. As C.C. James said in 1906, "Agriculture is not a dead subject; it is not simply marking time; it is showing greater signs of development today than any other line of work that may be mentioned." Ontario was experiencing an "agricultural evolution --in the movement from a lower to a higher level." As a result, the Ontario farmer had to be familiar with the "great world movements" which affected his work.<sup>18</sup> To cope with these conditions the student had to have an ideal or, as Reynolds put it, "a strong compelling purpose which shall prompt every thought and every deed."<sup>19</sup> The OAC Review offered the student similar advice: "To win success in life, a fixed principle, an unflinching determination is necessary. A lifetime is composed of years, and months, and days, of minute details which make up the whole; therefore, the ideal must be kept ever before the mind. . . . It is the steady mind which never falters or flinches, from which the vision of the goal is never absent for a day nor for an hour, that wins life's race."<sup>20</sup>

Here was the critical challenge facing the OAC student. It was a challenge which Reynolds himself confronted when leaving the family farm in Durham County in the 1880s to pursue his education in Oshawa and Toronto. At high school and university he became acquainted with "the hidden mysteries of literature, history, and science." "The unfolding of the mysteries of mathematical processes," he added, "opened up a strange new world: 'Then felt I like some watcher of the skies; when a new planet swims into his ken.'" An education at OAC would prepare a young farmer to navigate the agricultural regions of the expansive "skies" of modern knowledge. The man who could or would not do so

drifted aimlessly as "the plaything of chance desires and impulses" and "the whim of the moment." The rather narrow frame of reference of his youth and often insular rural upbringing provided no reliable compass. The OAC student faced a radical reassessment of his approach to life. Reynolds exhorted him "to choose deliberately the means within himself and in his surroundings that will insure success."<sup>21</sup> Unless he roused himself from passivity, self-doubt, and diversionary pleasures and fashions, he was headed for disaster. The Review explained that such a young man would be "lost":

To secure an education should be the first ambition of every young man and woman who hopes to succeed in life. As Prof. Robertson says, 'The man who is not educated is lost.' He is lost because he does not discover his own mental powers; lost to his opportunities because he cannot embrace them; lost in the race of life, for his hands are tied and his feet are manacled with the fetters of ignorance. He lives in the midst of nature, without appreciation, without understanding and without hope. Like an image of stone, he has eyes, but he sees not, ears but he hears not. . . . Study is the fulcrum and time the lever that lifts a man out of the mire of idleness, ignorance and superstition, and places him on the highway leading to success and power.

One frequently hears men in middle life express the sincerest regret that they did not get a better education. The most successful of them utilize every opportunity within their reach to increase their learning, to broaden the horizon of their knowledge and intensify their vision. The man of force must develop the penetrating powers of his understanding until he can see things as they are. True success is a question of brains and education. Our young men, however, are largely pre-occupied with physical and social pleasures. Some of the greatest

problems of life must be solved between the ages of 16 and 25. It is during this pivotal period in their lives that young men form their habits, tastes and character, and, in most cases, select their occupation or life's work. Comparatively few of them realize how important it is to spend their spare time, i.e., hours between work and rest, in improving their education, and in providing for their future in such a way that the asset will be available, no matter what circumstances arise. The proper use of their spare time in study along some definite line, or systematic work in almost any given direction, will yield them a measure of power which can be utilized in after years. They will be able to increase their earning powers, to enjoy a higher standard of living, and to equip themselves for their most important duties in life.<sup>22</sup>

The bewildering new world of modernity into which the student had been thrust could only be understood in an arduous ascent to higher intellectual vantage points. He could take heart in the fact that despite its daunting perplexities and infinite detail, the world around him was a single, interconnected, rational entity which in every detail was animated by divine spiritual forces. It could, therefore, be gradually understood through such means as a college education. Its surface contradictions, mysteries, and anomalies could be reconciled by more searching analysis until their inner coherence was located. As an individual pursued this knowledge of the essential harmony of things, he himself moved into closer union with the elemental powers of the universe. In other words, he entered more fully into the will of God -- an act which made possible the profound transformation of both his being and, through him, the rest of society. In this way, the critical challenges of the modern world could be met.

A vision of an ideal galvanized a floundering young farmer "to choose," as Reynolds put it, this path of purposeful action. In making this choice, he awakened to his rich interior resources of mind, character, and body. "Everyman," said Reynolds, "must choose for himself what that purpose shall be, only let him see to it that it is worthy of the best that is in him." The OAC Review said that an agricultural education "should give rise to a high ideal founded on good sound principles. . . . an education adds nothing to a man; it simply develops what is latent in him." In the process, farming could be socially renewed: "It matters not how humble a calling may be, that calling can be made noble by the noble and faithful performance of whole-hearted votaries."<sup>23</sup> Elsewhere, the Review offered an extended account of how an ideal or "definite purpose" aided a student to realize his personal potential and to discharge his duty to others:

Without a definite purpose, life cannot be, in any sense, a success. The purposeless man is like a ship without a rudder, driven hither and thither by the tides of popularity and adversity, struggling in the vain attempt to reach some harbor. He pursues what suits his momentary fancy, and when tired, follows the direction of fancy to another course, equally unstable. He has nothing substantial to recommend him, no ability to do, or to be, in a world which requires the best of work and of life in every one of its citizens. . . . A definite object concentrates all the powers of body and mind for its attainment. The physical being is developed to suit the demands of the work, the mind is trained to do the certain special labor which the purpose requires. Concentration of effort is thus induced, and concentration of effort means final success.

A distinct purpose is necessary for the accomplishment of a great life work, and the character of the life purpose determines whether the result will be true success or not. After all, the real object in life is happiness. . . . Happiness is to be sought above all other things, but in many lives, the means used to obtain happiness result in misery. The pursuit of power, influence, wealth, for selfish ends never has brought and never will bring happiness; pursued for the good of others, they are of untold blessing. . . . It is the life devoted to duty, to service, to the absorbing purpose to benefit humanity, that brings the true reward.

As men, and as college men especially, we should have some definite aim; we must have, to make our lives count. The opening of a new year induces a momentary glance into the future, a tendency to castle-building, and visions of success and happiness. Too often, we forget how these are to be obtained, and go on with no definite course marked out. If the years that lie before are to bring true success and real happiness, a steadfast, unwavering purpose is essential, a purpose that develops character, that faces duty without flinching, that has for its real ultimate object, the good of humanity.<sup>24</sup>

The ideal inspiring a student could only be reached by indomitable effort. The work of understanding the "latent" powers of his being and his environment was redemptive. "Make your ideals as definite as possible," advised the Review, "and then begin to work steadily towards them . . . . The ideal does not make the great man -- the hard striving after it often does -- for 'great men are made, not born' . . . . Work out in your own life the principles which underlie all these things . . . . 'Work out your own salvation!'" One OAC student especially commended "Carlyle's gospel of work as the dispeller of doubt and the means whereby a man is to be revealed to himself."<sup>25</sup> For Carlyle, as with many

Victorians, "socially productive" labour was the antidote for religious scepticism and anxiety about social change. Those who could not find spiritual peace in traditional religious doctrines could hope to find a restored sense of well-being in dedication to the highest ideals of moral, social, and material progress. Carlyle explained:

It has been written, 'an endless significance lies in Work'; a man perfects himself by working. Foul jungles are cleared away, fair seedfields rise instead, and stately cities; and withal the man himself first ceases to be a jungle and foul unwholesome desert thereby. Consider how, even in the meanest sorts of labour, the whole soul of a man is composed into a kind of real harmony, the instant he sets himself to work! Doubt, Desire, Sorrow, Remorse, Indignation, Despair itself, all those like hell-dogs lie beleaguering the soul of the poor dayworker, as of every man: but he bends himself with free valour against his task, and all these are stilled, all these shrink murmuring far into their caves. The man is now a man. The blessed glow of Labour in him, is it not as purifying fire, wherein all poison is burnt up, and of sour smoke itself there is made bright blessed flame?<sup>26</sup>

The OAC student was engaged in a type of warfare against the sources of inertia -- doubt, complacency, ignorance, fear, laziness, and physical weakness -- which would prevent the fulfilment of his life purpose. As the disciplined individual worked relentlessly towards his ideal, he discovered the path of development leading to his true self. In Carlyle's words, "The man is now a man." The student found strength of mind, character, and body so well aligned or, as the Review said, so "concentrated" that he experienced the "real harmony" Carlyle desired. He became a channel for the primal spiritual forces of existence to move

through, raising him to his true nature and a new more harmonious relationship with the natural environment and his society. "The Ideal," comments Walter Houghton on Carlyle's idealism, "is not a romantic dream of personal happiness incapable of realization, but a goal, a life purpose, toward which one can strive with all his energy. It is the highest potential attainment which, given the outward conditions and circumstances of life, any individual with a particular talent could hope to reach by concentrated effort and struggle. To discover that Ideal and then to pursue it is not only to do one's duty . . . , but also to win 'Spiritual Enfranchisement' for the vital energies of life, so long dammed up and paralyzed by doubt and indecision." Once in pursuit of the ideal, Carlyle thought that the individual enlisted in the great army of benefactors of mankind: "Ploughers, Spinners, Builders; Prophets, Poets, Kings; Brindleys and Goethes, Odins and Arkwrights; all martyrs, and noble men, and gods are of one grand Host; immeasurable; marching ever forward since the beginnings of the World. The enormous all-conquering, flame-crowned Host, noble every soldier in it; sacred, and alone noble."<sup>27</sup>

This process of "self-realization" for the OAC student bore the likeness of its philosophical idealist parent. "Self-realization," or the practical ideal of full and balanced personal development, resulted from a rationalization of an individual's mind, character, and body with the broader, rational, spiritual structure of existence. This condition, echoing Hegel, was, simply, the state of reason. Comprehension of this rational structure for idealist John Watson was possible, say Leslie Armour and Elizabeth Trott, because "God and man are not ultimately separate and the divine runs through all those instances of rational



order which exist in nature and in man . . . ." T.H. Green explained further that God is the "one of whom we may say that we are reason of his reason and spirit of his spirit; who lives in our moral life, and for whom we live in living for the brethren, even as in so living we live freely, because in obedience to a spirit which is our self." Green's biographer, Melvin Richter, states Green's intended practical application of this idealist tenet of self-realization: "His theology committed him to the belief in an immanent God gradually realising Himself in the world through the idea of human perfection. Acting on this conception of their better selves, men seek to become more nearly perfect. Thus the abstract idea becomes increasingly concrete in 'a complex organisation of life, with laws and institutions, with relationships, courtesies, and charities, with arts and graces through which the perfection is to be attained.' This was neither a static theory nor an encouragement of complacency. Rather it anticipated an unending prospect of struggles as the condition of extending the idea of perfection." Idealists such as Green would then surely have approved of a college of agriculture which aspired to realize "the idea of perfection" in rural life.<sup>28</sup>

The outcome of this struggle to rationalize existence, or shape man and nature into perfect manifestations of the divine spirit, depended upon obtaining an unprecedented increase in knowledge. Vast regions of existence, which had been long wrapped in mystery, had to be understood so that they might be incorporated into the ideal rational order. There was little doubt among practical idealists at OAC that modern farmers needed much more knowledge in order to realize the agrarian ideal. In their view, human reason explored the totality of knowledge which made life an intelligible whole. One must do more than teach practical

farming. A student's latent intellectual strength had to be brought out so that the necessary new knowledge of scientific mixed agriculture could be acquired. This knowledge could not be obtained by harder or more skilful physical labour or by more precise observation of and reflection on practical experience alone. Most agricultural knowledge eluded the naked eye at the microscopic level or lay far beyond the range of an Ontario farmer's personal experience in remote global economic and political conditions. At the end of the nineteenth century, agricultural knowledge was neither as elementary nor self-evident as it had seemed in the 1830s and 1840s. Modern agricultural conditions meant that intellectual development had to be given new priority and meaning.

The OAC approach to this requirement resonated the philosophical idealism which had come to the fore in Canadian academic and public life around 1890. From about that time, OAC staff and students began to speak of the mind along idealist lines as a powerful conceptualizing, theorizing, and systematizing force. The mind had not only secured unquestioned preeminence in this approach to knowledge, but also the way in which its workings were perceived had undergone revision. A practical idealist such as James Reynolds welcomed the unlimited sphere of activity opening to "the inquiring or ambitious mind." The mind could act freely because, in an essentially spiritual universe, it was impossible to undermine spiritual truth. However, the mind could only do so by launching reasoned theoretical probes into the unknown when harder evidence was lacking. In an essay in The OAC Review on primitive man, which drew heavily on Darwinian theory and in itself reveals the broader range of interests opened by inquisitive minds at the college, Professor Lochhead defended the view "that

beyond the point where modern investigations have found certain evidences of man's existence, it is our privilege to speculate as to his conditions of existence, and no person has a right to dogmatize."<sup>29</sup> In matters more directly related to agricultural improvement, Thomas Shaw, who was William Brown's successor in 1888 as OAC Professor of Agriculture, asserted that the prior role of the theorizing mind in human activity had been a much more important source of progress than physical effort or empirical practice:

It will be found that here, too, as everywhere, mind has been superior to matter, and that the mind of the scientist, the inventor and the machinist is mainly to be credited with the rapid strides that the agriculture of to-day is making. Or, in other words, those potent demonstrations were first propounded in the garb of theory, which, so many of the sons of toil so thoroughly despise. The mighty march of progress is rushing past at a pace which muscle alone can never keep up with, hence the urgent need of a more thorough education of the powers of mind possessed by the farmers of to-day and those who are to be the farmers of to-morrow.<sup>30</sup>

Shaw saw a creative, dynamic role for the mind when he maintained that "there is a force inherent in the human mind, mightier than the elemental forces . . . insomuch as it can govern the powers that inhere in the elements, and make them subservient to man's purpose." Unlike their more intellectually modest early Victorian predecessors in the work of agricultural improvement, OAC men insisted on the urgent need of "mind expansion" and "mental power" in farming. The complexity of modern scientific mixed agriculture, said an OAC student, meant that "mental giants may find herein room for mightiest powers."<sup>31</sup>

The intellectual activity required of the modern farmer was much more than "a mere memorizing of facts" about certain observed objects. "Observation alone will not develop mental power," said OAC student J.R. Hutton, "reason must be cultivated as well." In an article entitled "Mental Growth," Hutton explained that the difference between "observation" and "reason" amounted to a difference between "instruction" and "education":

At the outset every student should arrive at a clear understanding in regard to the object he has in view in attending college. Is it to get instruction, or education? Does he fully comprehend the difference? To educate is to lead out and train the mental faculties, to bring to light latent powers and develop them to their full strength. To instruct is to impart knowledge, a laudable work in itself, but one which so often degenerates into a mere system of cramming, as depressing to the instructor as it is harmful to the student. While instruction is essential, it should ever be the complement of, not a substitute for, the grander work of education.<sup>32</sup>

The mind, according to this view, was not an empty container to be filled with as many pieces of factual information as could be crammed into it and retained. Observation and memory could not, of course, be dismissed; however, they were to be put at the service of broader or "latent powers" of vision and understanding. To grasp the "hidden" divine "thought" animating nature, Hutton said, "We need . . . less of the what, but more of the why." The modern farmer needed a mind which had been developed into a vehicle for practical theory or, as Hutton said, applied "original thought."<sup>33</sup> His mind had to be able to envisage the ideal goal, to search out through critical analysis the means of achieving it, and to

select, interrelate, and interpret the data obtained. This procedure could penetrate the kaleidoscopic surface of reality to the rational substructures beneath, especially in nature. The educated farmer wove these threads into the harmonious whole which released agriculture's productive power. The Minister of Agriculture for Ontario, John Dryden, explained that this intellectual challenge emerged from the fact that the farmer was "dealing with living matter, shaped under influences which he can only indirectly control -- trying to build what his eyes cannot see, and yet with an ideal in his mind. . . ." He added that the ideal "will never be reached by accident or in any haphazard way. It must be by carrying out a well considered course, intelligently planned by one conversant with all conditions with which he has to deal. . . . The result or outcome of his work must first exist in his own mind."<sup>34</sup> An OAC student offered a similar insight into how this mental process was brought to bear on a complex agricultural problem:

The highest ideal that confronts any producer of a finished product is to attain the maximum result both in quality and quantity governed by the least possible outlay for the article produced. In dealing with this idea from an agricultural standpoint it is not easy at first thought to get at an exact method that might generally be adopted. It would not be wise to suggest even a rule or method as absolute in attaining our ideal. Principles alone must be regarded, and then with each person's proper exercise of reason and judgment any rule or method may be adopted to suit the circumstances. Observation and perception also come in as important in working out the plans adopted.<sup>35</sup>

The academic and extracurricular programme at OAC at the turn of the

century reflected these changes in approach to the pursuit of knowledge. The superiority of mind over matter, intellect over muscle, and theory over empirical practice represented for James Reynolds a recognition of the true structure of knowledge. Reynolds argued that the expansion of the science programme had placed the college on this solid pedagogical ground. It ensured that OAC would be a genuine college of agriculture rather than "merely a trade school." In an allusion to former Professor of Agriculture Brown's practical orientation, Reynolds said that the sciences based farming on "more than an empirical knowledge of certain improved practices established by farming experience." In stressing the value of science in agriculture, he applauded efforts "to lay broad and sure the foundation . . . before making the application. . . . Many self-constituted advisers of technical instruction have urged plunging in medias res, omitting the scientific foundation and giving only the practical issues. Such would reverse the natural development of knowledge, and would have, first, the full corn in the ear, without the ear and the blade."<sup>36</sup>

In the 1870s and 1880s, OAC staff, following the intentions of the founders of the college, attempted to teach and refine applications of existing agricultural knowledge rather than try to discover new knowledge with the aid of theoretical thought. Professor Brown's cautious, practical approach to this task has been discussed. His colleagues on the science staff accepted the idea that ambitious theorizing in scientific work should not be undertaken although they chafed under his practical priorities, particularly when the resulting lack of scientific apparatus not only made it futile to entertain even the most modest theoretical work but also difficult simply to teach basic science. By the mid-1890s, however, college

and provincial government officials tried to stimulate greater interest in theoretical science among students and farmers. These officials had accepted science as the basis of farm practice, and theory as the principal source of scientific advance. OAC, which by the 1890s enjoyed new laboratory facilities and an expanded science faculty, was not only expected to teach existing scientific knowledge, but also to employ scientific theory to acquire new knowledge. C.C. James, the Deputy Minister of Agriculture for Ontario, expressed this view in public addresses which upheld Benjamin Franklin and Louis Pasteur as examples of scientific genius. James emphasized that Franklin's famous experiment with a kite, which tested the theory that the atmosphere contained electricity during thunderstorms, was a resounding theoretical rather than practical achievement. Practical applications of electricity came in due course. James argued that practical scientific triumphs, like those won by Pasteur in bacteriology and veterinary science, had resulted from experimental refinement of general theory. He maintained that "There is work for a dozen Pasteurs in Canada in this great and fascinating field of agricultural science." James hoped that OAC might eventually produce a Canadian of Pasteur's stature.<sup>37</sup>

During the 1890s open-ended theoretical questions in science appeared on OAC examination papers along with the more familiar practical questions. In 1898 students of bacteriology were asked, "What hypotheses have been proposed to account for immunity? Which do you prefer?" The examination in animal chemistry asked, "What are the different theories that have been held with reference to the formation of fat in the animal body? By whom were they

advanced? Why is it so difficult to arrive at a definite conclusion in the matter?" The questions in zoology included, "What are the reasons for and against placing man in the order Primates?" And in inorganic chemistry, the students were required to state the atomic theory and explain its origins.<sup>38</sup> The Professor of Dairying, H.H. Dean, summed up the new attitude towards reasoned theory in a discussion of improvements in animal breeding. Theory, he maintained, was "a starting point" for research. "All good practice," he continued, "is the result of a theory, which must be understood that it may be replaced in time by another and better grounded theory. But in spite of this admitted uncertainty, theory is indispensable for all true science. It elucidates facts by postulating a cause for these!" Dean recognized that scientific speculation had often been resisted by religious traditionalists and those with vested interests of one kind or another. He contended, however, that theoretical thinking had to proceed if farmers were to be "seekers after truth" in "an age of inquiry."<sup>39</sup>

For OAC graduate and Professor of Soil Chemistry W.P. Gamble, theoretical thinking about science in farming was one important expression of the far-ranging intellectual power which was required in modern agriculture and which transcended the merely practical outlook. He illustrated this point with historical examples. Gamble told readers of The OAC Review that the greatest advances in human history had been made by a "master mind" who could conceive vast projects (often on an international scale) which opened new dimensions of opportunity and understanding. As examples of these individuals, Gamble mentioned Robert Fulton (the pioneer of steam navigation), Cyrus Field (the principal promoter of the first Atlantic cable), astronomers who had mapped the



heavens so that the practical ship captain could navigate the world's oceans, the greatest explorer and navigator of all, Columbus, and moral and political reformers such as William Wilberforce, who was instrumental in the fight against slavery. With their lasting contributions to human progress in mind, Gamble made a plea for the new more speculative practical intellect in modern agriculture:

To be practical is to discover and apply the immutable laws of the world of nature and of man that success may attend one's efforts, to work in accordance with revealed law, not in opposition thereto, to be in complete harmony with one's environment. The truly practical man, therefore, is one who knows the reasons for that which he practises, who can give an account of the faith that is in him, and who, while he possesses the readiness of mind and dexterity of action that arises from a long-continued daily intercourse with the subject of his profession, also possesses the necessary amount of theoretical and scientific knowledge which justifies him in pursuing any process he adopts. . . . But the practical man as commonly understood, means the man who knows the practice of his trade and knows nothing else concerning it; the man whose wisdom consists in standing by, seeing but not investigating the new discoveries, which are taking place around him; in decrying those discoveries, in applying to those who invent improvements the epithet of theorists . . . .

The so-called practical man is too often the man of contracted vision, of undeveloped imagination, of immediate and direct utility. He is inevitable; he is needed; let us not despise him. But let us give more honor to the so-called unpractical man, who, with some exceptions, it must be admitted, is the man of large vision, of developed and free imagination, of ultimate and far-reaching utility. And let us give most honor to him whose thoughts go out to the ends of the earth and of the heavens, who sees to the past and the future, and yet who neglects not

the needs and duties of the hour.<sup>40</sup>

Here is the idealist vision of human fulfilment or "self-realization" in popular form. The active, reasoning mind entered into harmony with the rational, eternal, universal order of existence to create a giant among men. The non-scientific side of the OAC programme, like the study of science, was supposed to stretch the student's intellectual capacities so that he might begin to embrace this universal perspective. The English course, which was a compulsory subject for every student each year, and the college Literary Society were instrumental in this process. By the 1890s, work in English not only included instruction in grammar and critical reading of literary classics by Shakespeare, Tennyson, and Scott, among others, but also classes in composition which involved written essays every two weeks on current affairs. In 1897 the Professor of English, James Reynolds, asked the students to write on the principal world events of the year. The following year's assignments included essays on "The Province of Ontario," "The Klondike," "England in Egypt," "The Chinese Question," and "Cuba."<sup>41</sup> The weekly Literary Society meetings, which were given over to mock parliaments, oratorical contests, essay-readings, and formal debates, dovetailed with the aims of the English course. The OAC Review noted that these gatherings stimulated "a desire for wide information" and "investigation and argument" into "live social, political, and economic questions." The topics discussed at society meetings at the turn of the century ranged from "Man and His Place in the Universe," "Eulogy of Philosophy," "The Anglo-Saxon," and "The Fundamental Defects of Modern Society," to "The British Constitution," "Canadian National Development," "Patriotism," and the relative attributes of the western and eastern hemispheres.

When two OAC debaters defeated a team from the University of Western Ontario in a debate over imperial tariff policy, the Review used the occasion to stress the value of Literary Society activities for intellectual and social development. In these debates, "The reasoning power is increased, the intellect is trained to act more quickly and more keenly; and, with mental acumen, goes the greatest influence and power."<sup>42</sup>

The OAC Review itself, which was established by the Literary Society as the college journal in 1889, provided a further means of extending the modern student farmer's intellectual range and power. The Review carried reports of Literary Society meetings and printed the prize-winning addresses from the society's oratorical contests. It not only published articles on scientific agriculture and agricultural education in Canada and abroad, but also pieces on tariff, transportation, and taxation policies, the farmer and politics, agricultural economics, socialism, women in modern society, the Boer War, the Russo-Japanese War of 1906, and the Alaska boundary dispute. The editors urged OAC students and alumni to write articles for the Review for the same reason they encouraged them to participate in Literary Society activities. "If led on to write," an editorial said, "a great object has been attained, for that can only be the outcome of thought and as we lead men to think, to exercise to the highest degree their powers of intellect, we aid them to further development and enjoyment of the powers and dignity of manhood."<sup>43</sup>

This quickly increasing body of knowledge could not be obtained by farmers working in the old way -- in isolation, relying on personal experience, memory,

guessing, luck, or worse — superstition. Only knowledge documented and exchanged in books, farm journals, government publications, and personal correspondence enabled farmers to master modern agriculture. Reading The OAC Review, though beneficial, was obviously not sufficient. OAC graduate Walter Brown advised students at the college to read widely in biography, literature, science, history, and theology because "modern farming is an intellectual pursuit. . . ." The college library expanded rapidly at the turn of the century to meet these aims. Between 1902 and 1909, its holdings nearly doubled from 10,027 to 19,410 volumes. During this time the librarian reported that acquisitions had not only been made under headings such as agriculture and related sciences but also biography, ethics and religion, fine arts, travel, education, history, literature, public speaking, economics, and psychology. In addition to agricultural and scientific journals from around the world, the library held major Canadian daily and weekly newspapers, the principal Canadian denominational periodicals, magazines and journals of opinion such as The Canadian Magazine, Queen's Quarterly, Harper's, McClure's, and Quarterly Review, the latest encyclopedias, and reference works such as the Dictionary of National Biography and the Ridpath Library of Universal Knowledge. For those who found it difficult to keep up with the increasing amount of reading expected of them, the Review recommended World Wide, a periodical which published articles selected from various journals. "It places no limitations upon its field," noted an editorial, "letters, art, science, and world politics are all alike, the scene of its efforts." OAC men needed a reference work of this type, the Review continued, because "College students of to-day are the Captains of Industry a few days hence. They must keep in touch with the march of progress. . . ." The student farmer could only do so

when he realized that modern agriculture required intellectual power generated by reflective reading. The college obtained a library facility which reflected its intellectual ambitions when the Massey Library and Hall opened in 1902. The building was erected and furnished with a \$40,000 gift from the Massey family. The library had room for 75,000 volumes and the hall accommodated Literary Society and Experimental Union meetings as well as Sunday afternoon church services.<sup>44</sup>

On the eve of what C.C. James predicted would be the "farmer's century," OAC could no longer be content with the modest intellectual and social hopes of its founders and men such as Professor Brown, who intended only to teach better or more practical farming techniques. OAC men recognized that agriculture could not advance on the strength of practical (empirical) sources of knowledge to the near exclusion of the contributions of the creative intellect. The capacities of the inquirer after knowledge were, as a result, as important to realization of the agrarian ideal as the power of the observed object to register its characteristics with the mind. The student of agriculture was an active, purposive agent whose mind and being had to be developed to the full in order to master the scientific, technical, social, economic, and political dimensions of modern farming. The powers of the mind could be awakened —to raise up a new and higher type of farmer. "Enlarge the mind," said Professor Reynolds, "widen the vision, cultivate the taste, . . . and you make a new creature with new desires."<sup>45</sup>

The college's overriding purpose by 1900 had become the preparation of a

rural elite of such new men in Ontario. Like "captains" of an army, they would direct the campaign for the province's rural mission to the rest of Canada and wider world. They had to be educated at OAC to command the knowledge which would enable Ontario agriculture to lead Canada to greater power through rural social redemption. Ontario required farm leaders who grasped the primary role of agriculture in Canadian life and the international dimensions of the province's agricultural interests. These men had to understand how the new agriculture had established larger horizons and a wider calling for the modern Ontario farmer. Ringing the changes on Ontario agrarian nationalism, the Review said that the college was "the agricultural centre of the Dominion" in the leading agricultural province. The college's expansion at the turn of the century permitted the Review to express its hopes for OAC even more boldly: "With its excellent staff, modern buildings, well equipped laboratories and increasing attendance, the Ontario Agricultural College bids fair to become the greatest of its kind in the world." OAC took immense pride in the world-wide reputation it had earned. By 1905 seventy-three foreign students were on the roll.<sup>46</sup> College men believed OAC allowed the best young farmers from across Canada and around the globe to prepare for farm leadership by studying the Ontario model of rural life. At the same time, graduates of the college were exporting the province's farm experience and spreading the name of OAC in their international travels and migrations. An article on the college's emerging world vision was illustrated by a map with the portals of OAC in the centre at the top and lines radiating from it towards the several points on the globe where students had come from or settled. Between 1891 and 1908 the Review carried articles by college graduates and staff members on India, Japan, Poland, Switzerland, Germany, Argentina, Malaysia,

Holland, Africa, and the United States. As OAC graduate and Ontario Minister of Agriculture Nelson Monteith said in 1907, "the trials of agriculture in this great Province of Ontario," extending back to the day of the pioneers, had prepared Ontario farmers for a special mission:

We do not know what difficulties are today as compared with the difficulties under which they labored. Nevertheless we have a struggle in the keen competition that is abroad throughout the whole world, and we have to bring this great heritage that has been left us by those who preceded, to that standard of nationhood and citizenship, in order that our influence may exist far beyond the borders of the land we so dearly love.<sup>47</sup>

In a 1906 ceremony at OAC which honoured John Dryden, Monteith's predecessor as provincial Minister of Agriculture, Monteith told the students that their idealism offered the best means of realizing Ontario's "boundless possibilities" in agriculture. College ideals for rural life, he said, had been raised to their then current heights by men such as Dryden, who in his fifteen years as minister (1890-1905) presided over OAC's emergence as the Department of Agriculture's technical civil service and educational arm. In his reply to these remarks, Dryden said the college would remain "a vital force" in the country as long as it continued to inspire students "for the best service and point them to higher things than agricultural production. . . ." The power of these ideals or "nobler aims," he added, "depends on the inner life; it depends on the soul life of the institution."<sup>48</sup>

Students whose idealism had been stirred by the spiritual and moral direction obtained at OAC had the best foundation for the intellectual development required of modern farmers. Their possession of these prior spiritual, moral, and intellectual attributes qualified them better than even extensive knowledge of theories, facts, and techniques to provide the agrarian leadership which would fulfil Ontario and Canada's rural promise. C.C. James told OAC students, "It is not going to be so much the amount of knowledge or information that you take away from the agricultural college, that you are going to be able to apply to your work. The probability is that between now and fifteen years from now a great many of the theories that are being taught in the classroom to-day will have been superseded. . . . It is going to be rather the training of the mind, the methods of thinking, the intellectual and moral habits that will be formed while you are here. And I tell you this, that these two or three years will count more for the success of your work than perhaps the next ten or fifteen will. . . . You will never again have such an opportunity of developing your mind, that you have now at the agricultural college." James thought that Canadian development depended most on agricultural progress and, in particular, on the progress made in Ontario, the richest, most advanced agricultural province, in establishing at OAC the intellectual basis for modern farming. "If we are going to develop the Dominion of Canada as a whole," he told the students, "we have got to do it to a large extent through young men who come here and train . . . ."49

The student farmer who strove to fulfil this agrarian idealist mission would enter a process of mental growth which would improve the range and agility of his intellect. This was necessary because agriculture in modern Canada had



essentially become a wide-ranging intellectual pursuit. Farm prospects were affected most by considerations which were inaccessible to practical field knowledge or beyond farm life itself. Empirical, practical approaches to farming could neither produce nor cope with the intricate scientific and other technical and business factors involved in the new agriculture. And farming in the modern international context could not be properly pursued by those who were intellectually ill equipped to understand the world outside local rural experience. The unrelenting "march of progress" could not be joined by farmers who relied largely on practical knowledge and personal experience. The progressive farmer required an education of the inquisitive, interpretive capabilities of his mind. Only such heightened powers of rational understanding would provide the intellectual elasticity needed to make sense of the growing body of scientific, political, social, economic, and theological information which affected the modern rural world. Reason, exercised in theoretical thought, wide reading, writing, travel, and formal education, as well as actual farm work, would master the expanding body of agricultural knowledge. The mind perceived the order within this growing mass of theory and fact when an individual realized that, because one's knowledge is always limited, it was more important to know how the mind could extend it rather than simply to possess it. This learning and ordering process gained necessary focus when the ultimate purpose of the knowledge to be mastered (one's ideal) remained in view. At OAC an ideal sustained by spiritual force, moral vigor, and intellectual power was expected to be the Ontario farmer's most reliable guide in a world of unprecedented change, complexity, and potential danger.

## VIII

### Character

Intellectual development, no matter how indispensable, was not the sole aim of an OAC education. The larger college purpose was the formation of "character." Ontario's Minister of Agriculture (1890-1905), John Dryden, said of the purpose of OAC that "It is life we are touching here; it is character we are seeking to form here -- solid, good character, which will tell on the general character of our Canadian people as the years go by."<sup>1</sup> This chapter discusses the role of character formation in the education of a modern farmer at OAC at the turn of the century. The college's conception of sound character will be examined in relation to its idealist basis. The sources of character improvement in the academic and extracurricular programme will then be outlined: scientific and literary studies, cultural activities, reading in history, participation in organized college sports, and the social experience of campus life itself.

Philosophical idealists thought that knowledge of the world and of moral values had spiritual origins. For idealists the divine "spiritual principle" animated man and the universe. As Melvin Richter explains in his study of T.H. Green, this spirit manifested itself in man as the intelligence which discovered the rational structure in sense perceptions and "as the consciousness of a moral ideal which

determines human action." This "moral initiative," as Green termed it, is of the first importance. Richter notes that "The emphasis is on activism. Insofar as man is moral, he pushes on to realize his ideals. An object to himself, because of his capacity to originate motives, he is no passive receptor of sense and pleasure. Quite to the contrary, just the distinguishing characteristic of moral action is this push forward, this permanent drive." The ability to launch rational moral action was also known to idealists as the exercise of "will." J.G. Hume, a philosopher at the University of Toronto said in 1891 that "the Will is the active, conciliating, unifying, living, organizing, constitutive principle in the conscious process. It is, in fact, the consciousness expressing itself. It is the vital element ... in consciousness. It is the fundamental principle in personality." In other words, as idealist philosopher Clark Murray of McGill University explained in 1891, will is "active intelligence stimulated by emotion: or, as it may equally well be described, it is active emotion directed by intelligence." For these idealists, an individual experienced self-realization as spiritual force produced the will which held intellectual power and moral purpose in the harmonious relationship required to pursue an ideal.<sup>2</sup>

The greatest ideal an individual could hold was a conception of the highest good of all the members of the community. This moral ideal ought to provide the basis of social relationships and personal development. John Watson explained that an individual "must conceive of himself as a member in a social organism." "Every form of social organization," he said, "rests upon this tacit recognition of a higher good that is realized in the union of oneself with others." An individual sought this union by learning "to free himself from an undue accentuation of his

own individual desires, and to seek his freedom where alone it can be found -- in the subordination of his own will to the good of others." His spirit-born capacity for "moral initiative" enabled him to acquire the self-discipline which kept him on the path of ethical social conduct. This individual, said Watson, "purifies and strengthens his will and becomes a master where others are slaves." Watson believed that the community "is the medium in which the complete realization of man is to be found." "It is only by mutual dependence upon each other," he said, "that the best powers of men are called forth into exercise."<sup>3</sup>

These concepts of individual and social development can be found in the creed of practical idealism at OAC. The college man who brought "moral discipline" (in the form of "energy of will," "push," "pluck," and "self-control") to bear on the activity of the mind in order to orient its critical and conceptual powers towards the highest moral purposes had character. James Reynolds spoke of the "spiritual forces that make ideals and character."<sup>4</sup> W.J. Brown (who was on The OAC Review editorial staff in 1893) unpacked this idea in the journal. He explained that human reason had an emotional component rooted in man's spirit. Their union provided the "rational feeling" evident in the "largeness of spirit, grasp of thought, strength of will and energy of character" activating men of "great power." "A predominating sense of duty and high motives," Brown also said, "tends to keep one on the right path. The appetites and passions should be stimulated by emotions that prompt to usefulness and keep the intellect steadily engaged in a worthy direction."<sup>5</sup> Thus the "mind expansion" desired for college students, said the Review, required that they be "educated not simply in the sense of being possessors of a certain amount of knowledge -- but knowledge acquired

under conditions that will tend to broaden the whole man." An education of this type gave the student "enlarged views of life, which enable him to look far beyond the little horizon in which hitherto he was wont to move and breathe and have his being."<sup>6</sup>

The farmers envisioned in the agrarian ideal at OAC dwarfed Ontario farmers who, in the main, according to college men, lived within a narrow strand of existence bordered by immediate, utilitarian concerns. These farmers overvalued manual labour, individual experience, and memorized practical knowledge. This limited their effectiveness on the farm and reduced their standing in society. Incapable of mastering themselves and their environment, or of providing social leadership, they were highly vulnerable to whatever accident or other adverse circumstances might present. OAC's idealists believed that farmers would strengthen character in the process of adapting to the new agriculture. The idealism required to meet the challenges of the new agriculture would enable farmers to transcend the limitations of personal and practical experience by calling up the latent intellectual and moral power which distinguished men of character.

The idealist transformation was necessary largely because modern agriculture obliged farmers to conceive and conduct their work on a vastly extended scale in an increasingly interdependent world. This challenge presented the possibility of creating a genuine rural community which would in turn be more tightly integrated with the larger society at home and abroad, but on the most favourable basis for Ontario agriculture. Agricultural officials in Ontario

preached that no one could sustain improved methods on his own. The complex changes in farming techniques and products required sharing of information among neighbours, participation in farmers associations and agricultural fairs, and cooperation with government experts. More extensive processing, shipping, and marketing arrangements for agricultural products necessitated more exacting contractual obligations with other farmers, businessmen, and consumers. Ontario's expanded agricultural productivity and international trade, particularly with Britain, involved a larger rural responsibility for the well being of the province, nation, and Empire. Farmers therefore had to possess the moral and intellectual resources to construct a rational view of the general good -- an ideal. In a world such as this, said C.C. James, farmers could no longer be "isolated and shut up to themselves." He thought that the interdependence of modern life would "bring out their latent power in a manner that was utterly impossible under the old system."<sup>7</sup>

The OAC student developed his "latent power" through constant adjustments in character which were made in response to these widening possibilities for service to others. He pursued "self-realization" or a fully formed character by preparing himself within the OAC community to make the best contribution he could make after graduation to the well being of world beyond the campus. As a contributor to The OAC Review said, in a comment which resembles John Watson's view of the relationship between the individual and community, "Man is a social being, and it is only in association with his fellows that he realizes himself."<sup>8</sup> The student advanced in this process by taking control of every facet of his own nature and purpose. The Review offered a succinct exhortation: "Man

can be master of his own destiny, and he shows weakness by not assuming control of his development . . . . He will be a true man who aims at right development. Every habit, however pleasant, every desire, however strong, that saps strength and destroys morality must be discarded. The man must be master of himself. It is this effort for self-mastery that develops character."<sup>9</sup> Self-mastery increased the adaptive capacity necessary to make an individual's character a more perfect vehicle for the moral ideal for his community. It enabled him to achieve the measured application of latent power which permitted him the greatest opportunity for service to the community. Thus the countless problems and mundane realities of life could not weaken his idealism because he could always devise responses to them which advanced his ideals. John Dryden counseled OAC men in this line of thought in an address at the college in 1900:

Character gives you influence. Let me suggest another thing. Do not forget that the best lesson you can learn is the power of self-control. If I have any advice to give, it is to get hold of yourself and control yourself, and use your power where it can be used to the greatest advantage . . . . One of the best lessons the students can learn if they are to be useful in after life, is to have themselves under control . . . . You must remember that you are to be a part of society. You must remember that you cannot always have your own way. You must try to live for your country and not altogether for yourself, and then you will have power and influence . . . . Remember as you are at your studies that you are fitting yourselves to be men of the highest type, and to take some of the highest places.<sup>10</sup>

As Dryden's comments imply, the college programme was to be the crucible for character development. Academic work and extracurricular activities were to

ensure that the technical challenges of modern agriculture would be addressed by men of sound character. Only men of that stamp would approach these challenges in ways which best advanced the community towards moral ideals. At the turn of the century, OAC men thought that the main elements of the programme exerted certain influences which contributed to character formation. As they worked through scientific and literary subjects and entered campus cultural, social, and athletic activities their moral, intellectual, and physical potential would be gradually realized. In the official view encouraged by the Ontario Department of Agriculture, work of this kind was "the greatest means we have for self-development and self-realization, bringing forth as it does, latent powers and cultivating those sterling qualities which go to make up strong character namely -- endurance, perseverance, patience, honesty and self-control."<sup>11</sup>

The specific ways in which this programme placed the student on the path of "self-realization" will be examined in the following pages. The entire programme rested on widely held assumptions about the attributes of the Anglo-Saxon race. These qualities, originating in the spiritual and moral capacities of the race, had elevated Anglo-Saxons to world leadership -- a position which in the nineteenth century had reached a new pinnacle in the expansion of the British Empire. Although these racial traits had been deeply ingrained over the long course of Anglo-Saxon history, many leading English-speaking Canadians (along with many prominent American and British observers) believed the new social and economic conditions of the modern world had begun to weaken them. The race had been imperilled on various occasions down through its history and had overcome the dangers, the record seemed to show, on the strength of its spiritual ideals. By



about 1900, however, the spiritual foundation itself was in jeopardy, not only in the United States (where Canadians always expected such weakness to appear) but also in Great Britain. Above all, the natural and especially agrarian context in which the spiritual resources of the race had been nurtured was being undermined by uncontrolled urban and industrial growth, unrestrained economic individualism, self-indulgent affluence, and the equally soul-destroying poverty of those the rich had left by the wayside. Could the race continue to lead the world? And since the symptoms of racial deterioration were also beginning to appear in Canada, would Canadians, as members of the race, find a future for their young country? George Parkin warned his contemporaries that when a race loses the "moral energy" required to fulfil divine purposes it "is doomed to decay."<sup>12</sup>

For men such as Parkin, certain idealist values were at stake in the modern world which were essential to civilized life. In their view, a preferred type of society was at risk -- the society which the Loyalists had established in British North America after sacrificing personal material advantage to oppose the American Revolution. Idealists later embellished the Loyalist experience as the early manifestation of idealism as a defining characteristic of Canadian life. They thought that the Loyalists' values had been the foundation of the colony's steady, balanced progress. This achievement, consolidated in Confederation, made possible a larger world role for Canada by the end of the nineteenth century as the bearer of ideals. As one of the leading spokesmen for this view of Canada, Principal Grant of Queen's University, asked rhetorically, "What are we in this world for? Surely for something higher than to accumulate money . . . we are here to think great thoughts, to do great things, to promote great ideals."<sup>13</sup>

In Canadian historical writing this social critique has largely been associated with members of the late nineteenth-century Anglo-Canadian literary and academic elite such as Parkin and Grant.<sup>14</sup> As a study of OAC shows, these ideas were also shared by men whose concerns were in the main technical and commercial and who could not be included in the country's intellectual or cultural elite. OAC men felt a similar sense of urgency about the fate of the race. They also thought that sources of racial strength had to be fortified to enable Canada to avoid the worst dangers of the new era. In the prize-winning address to the Literary Society in 1903 on the topic "The Fundamental Defects of Modern Society," a student decried "the appalling degeneration of moral sentiments" in the growing industrial cities of Canada. "It is time to realize the gravity of the situation," he continued, "and seek to discover a remedy, or else the fate of this or any other country, no matter how much they boast of their civilization, will finally reach the same goal as ancient Greece and Rome." In a universe directed by spiritual energy, a nation had to struggle continually towards ideals (or assert its moral will) to avoid losing its claim to world leadership. W.R. Dewar, who was at one time the editor of the Review, feared that the race's "adventurous spirit seems to have reached its limit. The question naturally arises, 'Has the Anglo-Saxon race worked out its destiny, and will it in turn degenerate and fall?' This course has been the fate of all the great nations of the past." Neither student thought the race would "decay" as long as "the rising generation" discharged its duty to society.<sup>15</sup> To do so through an agricultural education became the college's ultimate aim. This was an especially significant role given the agrarian basis of idealist values. The history of Ontario, Canada, and the race had reached a point at which OAC men could aspire to make a pivotal contribution. On

Ontario's progressive farms and through the college, they hoped to raise up a Canadian variant of the race which would help regenerate the "moral energy" of Anglo-Saxon world leadership.

The raw material of racial and individual character was the common human nature of all people regardless of race. In an article in the Review, W.J. Brown said that human beings everywhere had a "religious nature" or "soul," a "social instinct," "moral intuitions," and "reason." Social and religious institutions, ethics, and science and technology were extensions of these shared endowments. James Reynolds echoed this view in an essay on the ethnology of early man. "We are all cast in the same mould," he wrote, "we are all of one blood. Our wants and infirmities, our desires and hopes, our feelings and emotions, are the same, to whatever race we belong." There were, admittedly, great differences between the races, but these could be reduced by educating the less developed races.<sup>16</sup>

If every individual began life with the same basic nature, the evident inequality of the races was due to the fact that some of them (especially the Anglo-Saxon) had managed to develop their inherent human capacities far more thoroughly than the others. The rise and decline of nations over the course of history depended upon how well the various elements of human nature had been improved and how long the improvements had been maintained. The destiny of a race was directly related to how well its individual members had appropriated the idealist key to self-development. The preeminence of the Anglo-Saxon race over all its predecessors and contemporary rivals rested on the high ideals of its members.

In the college programme, The OAC Review and the campus Literary Society provided a means of showing a preference for these racial ideas. The Literary Society's annual oratorical contest was won in 1901 for an address on "The Anglo Saxon" by W.J. Rutherford, who became Dean of Residence and an instructor in English at the college after graduation. (His duties included teaching public speaking or "Rhetoric" and serving as Honorary President of the Literary Society.) In his 1901 prize-winning address Rutherford welcomed the opportunity "to present the claims of this the noblest and grandest race that has ever graced the page of history . . . ." The race had attained this stature, he then said, by remaining faithful to the spiritual ideals of Christianity. The Christian "lamp of liberty" lighting the path of Anglo-Saxon progress kindled the spiritual force which gave men the power to develop the capacities of their nature and experience self-realization. This "spirit of liberty" inspired the Anglo Saxon to dream, adventure, and create. The whole universe and entire life of man became his sphere of action. Wherever he went, the Anglo Saxon raised "the emblem of liberty, justice and truth." The results of this infusion of moral dynamism were manifest in the race's brilliant record of scientific discovery, geographical exploration, literary and cultural attainment, military valour, humanitarianism, religious endeavour, commercial achievement, and community formation. The story of racial progress had chapters devoted to Magna Carta, parliamentary government, Newton, Shakespeare, Milton, Wolfe, Nelson, Wilberforce, and Lincoln. Thus Rutherford thought he could say that the Anglo-Saxon "leads the world in every department of human activity." Indeed Anglo-Saxon ideals had lifted the race from a handful of insignificant tribes in ancient Europe to the stewardship at the end of the nineteenth century of a world-wide empire.<sup>17</sup>

Anglo-Saxon self-mastery had sustained the steady ascent to world preeminence across the varying conditions of each phase of history, every major field of human endeavour, and through countless perils. The race had easily surpassed the achievements of the greatest prior civilizations (the Hebrew, Roman, and Greek) because they had not attained the balanced, purposeful development which self-mastery ensured. These nations had made a signal contribution to the flowering of but one aspect of human nature. The Jews had been the first custodians of true religion; imperial Rome mastered social organization; and the Greeks left their mark on man's intellectual progress. Political dictators, however, destroyed Rome's ordered liberty; moral licence undermined Greek intellectual culture; and the Jews neglected the physical dimensions of existence by underemphasizing military defence. (They had been driven from their homeland as a result.) The bases of these societies had proven to be too narrow. Attitudes had been too inflexible to allow the foundations of lasting vitality to be broadened. The Anglo-Saxon had learned from this fatal flaw. "Rome sacrificed liberty," said Rutherford, "Greece sacrificed religion, the Hebrews sacrificed the manly arts and each in its turn tottered and fell, not however, without leaving its impression upon the world. The three great ideas -- religion, liberty, and social law, which the Hebrews, Greeks and Romans respectively cherished, have been united to form the foundation upon which the Anglo Saxon is rearing his national structure."<sup>18</sup>

Anglo-Saxon self-mastery was responsible for this accomplishment. The race had erected its foundation on the self-control which enabled its leading members to develop simultaneously all sides of their natures and to blend each

dimension to obtain through mutual reinforcement ever higher expressions of character. In this progress of adaptation individuals could gradually align themselves and their societies with the divinely ordained rational order of existence. This brought them to self-realization or true freedom, moral power, and harmony with others. And these were the very contributions which W.J. Rutherford said the Anglo-Saxon race had made to human progress. Having perceived and experienced this truth, it was incumbent upon the Anglo Saxon to share it with others. This was the race's mission in the world.<sup>19</sup>

The history of the race showed that individuals and communities which intended to carry forward this mission had to live in a state of tension between conditions as they were and how they ought to be. The tension could be reduced as individuals struggled to master themselves for the highest good of their communities. This was true freedom, the fruit of self-realization. Struggle was of the essence of liberation. Without it, there could be no advancement towards moral ideals. The person who did not struggle against selfishness or apathy had succumbed to them.<sup>20</sup> Thus, Rutherford emphasized that the Anglo Saxon race had appropriated the Greek and Roman heritage of freedom and order in the "continuous struggle" for representative political institutions and a just judicial system. The benefits of both liberty and law were maintained by a "skilful balance of rights and duties" in British political and legal institutions. These benefits had been secured by the growth of British naval power after the Armada and extended by the exploration and settlement of North America, Australia, and New Zealand, and colonial expansion in India, Africa, Asia, and the Pacific. In the process, the underutilized lands of the "red man" had been turned into great

granaries, "semi-barbarous" Japan had been "completely revolutionized," and Egypt "redeemed." The Anglo Saxon had not arrived on foreign shores to conquer, but to uplift backward and isolated peoples. Everywhere, the race had educated the ignorant, reformed the immoral, and healed the sick. In other words, it had awakened their innate human capacities and made available to them model means of self-development: Christianity, science, technology, literature, political democracy, educational institutions, and economic enterprise. They had been shown the way of freedom through self-mastery. Indeed emerging nations such as Japan had made extraordinarily rapid strides towards full membership in the community of civilized societies. Only about fifty years after their "closed" society was opened to Anglo-Saxon influence by Commodore Perry in 1853, Rutherford thought the martial Japanese were about to begin their service to humanity "in that circle of nations that have to do with the police system of the world."<sup>21</sup>

Anglo-Saxon self-mastery made possible the delicate balance of interests, rights, and duties (or liberty and order) which sustained the race's genius for making, renewing, and enlarging communities. Self-sacrifice and restrained strength, after all, not unbridled force, had accomplished the race's ascent to the "burden" of world leadership. The nature of the English language itself reflected the unsurpassed qualifications for shouldering this responsibility. English did not have to be forced on anyone. It had simply proven through constant interaction with other languages to be the highest form of human communication. "The English language," said Rutherford, "is the growth of centuries. It contains the best essence of Teutonic, Greek, French and Latin and is peculiarly adapted to

become a world language. It has been styled the most flexible, forcible, richest and grandest of all modern languages."<sup>22</sup>

OAC men thought that through the college rural Ontario had begun to take up the inheritance of fifteen hundred years of Anglo-Saxon progress. Ontario, said a college graduate, was "the cradle where was nursed Anglo-Saxon civilization in Canada; the centre from which it has spread on to the north and west."<sup>23</sup> The turn of the century brought Ontario farmers to an historic opportunity to advance the mission of the race. World, Ontario, and Canadian history revealed the converging paths of rural, national, and imperial destiny. Agriculture had been the foundation of great empires. The Romans, remarked the OAC valedictorian for 1892, "were a purely agricultural people . . . and it is not too much to assert that many of those qualities which fitted them for conquering the world were acquired and nourished by the practice of this noble avocation."<sup>24</sup> A friend of the college told a meeting of Ontario farmers that "The might of empire has followed agriculture everywhere." Farming was Canada's only security against "national decay." He held that agricultural education through institutions such as OAC was essential: "The safety of the race demands it, the safety of the state demands it." British agriculture at its height in the eighteenth century produced the most progressive people in the history of the world. This advanced nation had supplied the founders of British North America. While the nineteenth-century Canadian farmer, however, prepared for a still greater agricultural destiny, urbanization in Britain had weakened the moral and intellectual fibre of the mother country. In these circumstances, Canadian farmers could repay their debt to Britain by ensuring that her Empire still had the necessary agricultural



leadership: "Our destiny for ages to come is to be an agricultural community. With us, therefore, rests the responsibility of giving pure life not only to our own nation but to all the world . . . . While we are thus working out our own destiny, we can never forget our aged parent on the other side of the Atlantic. . . . To her, this earth owes about all it has that is really good. To her, we owe the best we have in agriculture and self-government. She must be supported at any cost."<sup>25</sup>

Like their Roman racial forebears, Ontario farmers had settled a country whose past and present were bound up with the fortunes of empire. The eighteenth-century struggle for Canada between France and Britain showed OAC students that control of Canada was one of the keys to mastery of the world. Canadians inherited a strategic role in the world which became much more imposing after Loyalist settlement of Ontario. It had turned out that Britain and France had fought for title to an agricultural eldorado. C.C. James said the colony was North America's "promised land" for refugee Loyalists and the immigrants who arrived after them. They discovered a place uniquely favoured by soil, climate, and geographical location for building a rich agricultural society. The pioneer farmers, claimed an OAC valedictorian, had also been first to feel the "yearning . . . for bold adventure, for the daring life of a young country that aspires to a seat beside the throned peoples of the world." Since the arrival of the pioneers, agriculture, in the OAC view, had been the driving force behind Ontario's rise to leadership in Canada and the country's increasing global prominence.<sup>26</sup>

Immigrants to Canada who had been debilitated by life in Britain's urban slums were but one threat to fulfilment of this destiny. Canada's raw youth and perplexing variety of regions and people were other hindrances. For James Reynolds, Ontario offered the country an indispensable model of social experience which was rooted in preservation of British ideals. Rural Ontario in particular had been of inestimable value to the country in the West:

Ontario, and especially rural Ontario, has made a heavy contribution to the life of the West. In doing so, she has simply been completing history. 'Westward the star of empire takes its way.' Ontario in the past thirty years has been doing for the Canadian West just what, previous to that period, Britain had done for Ontario. And it is well that it has been so --well not only for the West, but for the whole of Canada. It is needful if Canada is to remain British not merely in name, but in fact, that the political and social ideals, the love of order and government, devotion to the public welfare, jealous care of family life and of social purity, a belief in the need of education and in the uplift of religion, all of which have been handed on to us by our ancestors of British stock, should be handed on with equal devotion by us to the new provinces of the West.<sup>27</sup>

Ontario and Canada had apprenticed for assumption of the Anglo-Saxon "burden" by conforming to the historical pattern of racial progress. Canadians had gone from strength to strength through unceasing struggle by demonstrating an especially well-developed ability to wrest a new and higher level of harmony out of the stress of conflict. The "smoke of battles" rose from the pages of Canadian history said a student in an address which won the college oratorical contest in 1911. Early Canadians had turned back the wilderness, Indians, and the

imperial ambitions of the French in 1763 and of the Americans during the American Revolution and the War of 1812. Peaceful relations had been established thereafter between Indians and white men, English- and French-speaking Canadians, and Canada and the United States. Even the domestic social and cultural tensions which briefly interrupted the peace in 1837 had been reconciled through liberal political reforms which climaxed in Confederation and elicited the determined yet generous spirit responsible for the nation's astounding transformation into a transcontinental state after 1867.<sup>28</sup> This spirit went West with the Ontario farmers Professor Reynolds admired, who were daily proving the province's genius for bringing people of varied backgrounds together to fashion a superior British civilization. As the empire followed its westward course, OAC's practical idealists had been preparing rural Ontarians to enable Canada to bear the coming imperial burden. They had worked in anticipation of the day envisioned in 1893 by the Professor of Dairying, H.H. Dean, when "Ontario shall be known as the Garden of America, the home of the bravest, truest, wisest race that ever received nourishment from Mother Earth."<sup>29</sup> Rural Ontario through OAC was building the foundation for a new rural community of the kind great nations and empires required. OAC was harnessing the forces which had powered Anglo-Saxon progress down through the ages.

For OAC to become, as the Review intended, "one of the educational centres of the Empire," the college programme had to give material shape and effect to the spiritual forces of life in the character of the student. The college experience had to concentrate these forces to produce an added surge of developmental power in the lives and on the farms of OAC graduates. The

material and spiritual were ultimately mediated by the mind. The intellect faced an essentially unknown, even mysterious universe which, however, could gradually be transformed through reason into an ideal home for man, a "Garden," to borrow Professor Dean's term. The mental powers refined in the science courses at OAC advanced this process. Science, as President Falconer of the University of Toronto told college men, not only provided technical information, but also further enlarged the rational imagination with a vision of the vast potential of technical achievement for rural intellectual and moral development within the Christian spiritual order. In a similar vein, James Reynolds said that "the philosophic and religious mind finds in the discoveries of science ever fresh suggestions for wonder and mystery."<sup>30</sup> Science helped initiate self-mastery. It drew out the student's intellectual powers and then strengthened them (or made them more flexible and resourceful) by solving practical difficulties which hindered progress towards the ideal. The man of sound character had to possess this critical, conceptual intellect to chart his self-development towards an ideal which lay beyond the expanses of life's mystery. Science in agriculture, said an OAC student, "lifts man into the accelerating heights of human excellence."<sup>31</sup>

As the powers of the mind adjusted or expanded during the ascent, the moral force directing the mind to spiritual ideals had to increase at the same pace. For this task, the emphasis in Christian teaching (particularly in the campus YMCA) on the moral authority (indeed, life-giving spiritual originality) of Jesus, rather than the doctrines about him, was reinforced by literary studies and cultural pursuits. James Reynolds was delighted that students in the English course (which by 1906 he taught full-time) had become "intimate acquaintances" of Shakespeare,

Milton, Woodsworth, Tennyson, Carlyle, Scott, and Eliot. The English classes, which also included practice in composition and public speaking, not only helped provide the "mental equipment" needed to conduct the more intricate business and technical affairs of the new agriculture, but also strengthened the mind's moral insight into these matters.<sup>32</sup> For Reynolds no author matched Carlyle's work in this regard. The principal virtue of great poetry and prose -- their moral power -- reached the zenith in Carlyle's discerning character studies of Cromwell, Goethe, Boswell, and Johnson. Immersion in works such as these schooled OAC students in the most elusive but essential aspects of character analysis and formation. They helped "build up the moral constitution" by encouraging "the habit of noble deeds and high thinking." The lives of authors such as Carlyle, who had the power to open windows on the spirit of man, became a veritable "gospel." They offered object lessons in the power of self-mastery to bring personal and community self-realization. The early literary activity of Joseph Addison (1672-1719), for example, "was the means of revealing to himself and to the world all the richness, extent, and variety of his powers, of which only the meanest had, as yet, become developed":

We do not assert that the character of Addison was without defect; but we do claim that it is seldom that we find a man of such diversity of evenly developed powers, who possessed in such a perfect blending the qualities of sternness, humanity, moral rectitude, and moral grace. It was this harmony which enabled him to use his great powers of satire, wit, and humour, for the elevation of the moral life of his people . . . . This was his purpose, as he said himself, 'to banish vice and ignorance from the territories of Great Britain.' To a great extent he accomplished this purpose.<sup>33</sup>

Great literary works guided students to awareness of fundamental truths with which they could renew agrarian ideals. C.C. James found idealist inspiration in Tennyson's work. James was a devoted student of Tennyson. He spent several years amassing a collection of his writings which he eventually donated to Victoria College. (The collection is now housed in the C.C. James Room of the Victoria University Library.) James also read papers to a literary club which met to consider Tennyson's works. In 1909, the centennial of Tennyson's birth, he went on what he called "a Tennyson pilgrimage" to the poet's birthplace in England. James admired the "grand ideals" Tennyson upheld and the deep spirituality which inspired "his teaching of man's highest life." "'Tennyson's whole life work'," he said, quoting with approval another admirer of the poet, "'has had for its object the elevation of the ideals of his fellow-countrymen.'" Tennyson's idealism encouraged men of science and public affairs such as James (who noted the poet's familiarity with both fields) to sustain transcendent spiritual and moral purposes in the face of what seemed to him to be the tedium and temporality of so much of their day-to-day work.<sup>34</sup> "Many a farmer," said James, "has failed to enlarge his thinking and his being by disregard of the grand presentation of creation's truths in finest poetical form. If left to itself, the farmer's life is apt to work along a dead level, if not to become degraded. There is need that he be lifted up, that his mind be elevated, his outlook be widened, and his whole life sweetened by the beneficial influences that permeate the highest forms of the poetic art."<sup>35</sup>

James urged OAC students to read Tennyson as well as Canadian poets such as W.D. Lighthall, Archibald Lampman, Bliss Carman, Charles G.D. Roberts, and

Duncan Campbell Scott. He said that in a farmer's own reference library volumes of poetry should be as accessible as scientific and technical agricultural books. To engage fully the material and spiritual dimensions of "Creation" poetry was needed as well as science. If science and Christianity brought the farmer to the frontiers of an understanding of things earthly and divine, poetry gave him the means to glimpse beyond these borders. "Poetry," said Reynolds, "is based on mystery. The ideal, the unattained and the unattainable, the unknown and the unknowable, find their proper expression in poetry . . . . So long as God and His infinite world and the human mind remain, the unknown will present itself to man's imagination and reverence, and poetry will continue to be the highest expression of his longings and aspirations." The progress of scientific knowledge, merely raised new questions and speculations about ultimate truth. The mystery of the universe simply grew as knowledge increased. It followed, advised W.C. Good, that man "needs the poet to supplement the scientist."<sup>36</sup>

As the earlier discussion of interest at OAC in Anglo-Saxon racial progress already implies, the study of history extended the reflections of the moral mind to still greater heights, or what W.C. Good called "the grand vista of the ages." As a form of literary activity itself, history shared so many of the characteristics of literature as to be virtually indistinguishable from it. Carlyle's biographies, for instance, were valued as much for their literary merits as their historical strengths. And lectures in history were included in the English programme by the 1900s. History seemed to present all past human experience as a great drama which clearly demonstrated important moral lessons. For C.C. James, who, as President of the Ontario Historical Society (1902-04), was one of the most

prominent enthusiasts for the study of the province's past, history was "a romance" which should "evoke the strains of poesy and song." He was interested in the sort of historical work which would launch Ontarians on a process of self-discovery. This would awaken them to Ontario's unmatched ability to foster full human development. Thus he hoped that his contemporaries, as if discharging a moral debt to those who had handed them this valued legacy, "may be inspired to be worthy sons of worthy sires."<sup>37</sup>

Like science and poetry, study of history liberated the student from the limitations of self-absorbed, individual, practical experience. Taken together, science, poetry, and history confirmed that the central idealist assumptions governed both the natural world and the entire experience of man. There was an ultimate or divine, rational, moral order, "a logic of events" as Good described it, which was controlled by eternal, universal, spiritual forces. The past, said Good, revealed the moral value of "the permanent and stable" in human affairs over "the temporary and ephemeral." And since Good, like other agrarian idealists, thought modern urban life and work fostered the latter inferior standards, rural life was the higher manifestation of the natural laws of existence.<sup>38</sup> Students of science, literature, and history at an agricultural college could not only demonstrate this fact academically, but also range the known universe to distill the best elements of this developmental law or power in their own characters. In so doing, they would, through an act of spiritual self-discipline, hold in union the moral commitment and critical mind necessary to produce practical embodiments of the agrarian ideal.



The OAC Literary Society was a focal point on the college programme of these literary and cultural interests. The society's popular oratorical contests (the one in 1903 drew about six hundred spectators) featured student addresses on "The French Revolution," "The Nineteenth Century," "The Age of Liberty," "The Genius of Napoleon I," and "A Canadian's Heritage." The annual special lecture series established in 1902 introduced the student body to the work of outside experts in cultural fields, among others. Professor John Squair of the University of Toronto spoke on "French Painting"; a Professor Fraser discoursed on "Italian Painting"; Professor W.J. Alexander of University College delivered a paper on "Shakespeare"; David Boyle, curator of the Provincial Museum, discussed "Indian Lore"; and C.C. James lectured on "The Downfall of the Hurons - The First Chapter in the History of this Province."<sup>39</sup>

OAC graduate E.C. Drury, who was later Premier of Ontario (1919-23), provides some insight into the best results of the OAC programme at the turn of the century. Drury's father Charles, a farmer in Crown Hill near Barrie and Minister of Agriculture in the Mowat cabinet from 1888 to 1890, insisted that a farmer ought to be "an educated gentleman." E.C. Drury's immersion while a high school student in the works of Shakespeare, Milton, Tennyson, and Carlyle, among many others, and his interest in opera, drama, history, and musical concerts performed in nearby Barrie are evidence of his cultural interests. After he entered OAC in 1898 he pursued them as a member of both the college Literary Society and the editorial staff of The OAC Review. In 1901, shortly after Drury graduated from the college, his friend C.B. Sissons graduated from the University of Toronto with the gold medal in classics — the first milestone on the way to a

distinguished academic career at Victoria College. Drury asked Sissons to help him on the Drury farm in the summer of 1903. In his memoirs, Sissons recalled the pleasure and stimulation of conversing with Drury while they hoed turnips. "As we worked side by side," Sissons said, "we talked on poetry and politics, tariffs and world trends, with our horizon still unclouded by war. The discussion was shared fairly equally, except when Ernest discoursed on some new theory or invention in science."<sup>40</sup>

Campus associations such as the Literary Society conveyed information to the students within a social context which was itself intended to assist character formation. College life involved constant interaction between students with varied personalities and interests in a variety of settings. This community experience, facilitated by the almost fatherly advice of popular professors such as Reynolds and Panton, who, like the students, resided on campus, gave opportunity to exercise and compare different individual abilities. It increased a student's awareness of his particular strengths and weaknesses and stimulated him to make the improvements which would enable him to envision and serve the good of all. In so doing; he wrestled with the causes of inertia and inflexibility: selfishness, shyness, ignorance, dogmatic views, and physical weakness. He entered a strenuous round of testings, which commenced with 5:00 a.m. risings, and included military drill, oratorical contests, Literary Society debates and mock Parliaments, the moral strivings of the campus YMCA, and the rigours of competitive sports organized by the college Athletic Association. The "compelling influence of that common college life," wrote a contributor to the Review, made students "learn to know something of ourselves and of others." This knowledge was the basis of rural

citizenship:

Man Realizes Himself Only in Association With His Fellows . . . . To know ourselves and our real capabilities better, to know how to respect the views, even perhaps the prejudices of others, to be able to distinguish between the essential and the non-essential for the general good of the whole body to which we belong -- this is knowledge or ability not of the same kind as that of the scientific agriculturalist, but equally useful to the good citizen . . . .

The student who while here does what he can to make prevalent in college life those ideas of generosity, justice, fair-play and broad-mindedness that we feel are the ideals for a society of those who have received or are receiving a liberal education will find that his course at the Agricultural College has helped him to be both an agronomist and what is better a man.<sup>41</sup>

The men who made these adjustments best achieved the highest degree of self-mastery. They emerged as the natural leaders of the student body -- a function they could expect to continue in rural society at large after graduation. A spokesman for the class of 1915 fulsomely expressed the sense of confident readiness which the college programme elicited among its graduates: "Four weary, merry years, shoulder to shoulder, we have escalated together the bastions of aspiration, we have won the position, our feet are firm upon the parapet and before us lies sunny and calm, the battlefield of life."<sup>42</sup>

It is important to note that this member of the class of 1915 also said that the class claimed to be the best ever at the college largely by virtue of its

athletic achievements. As this implies, at the turn of the century, organized sport joined the more theoretical approach to science, liberal Christianity, and such cultural pursuits as the study of history and literature as the principal media of agrarian idealism at OAC. The far-reaching, increasingly complicated challenges of rural life in the modern world would be more effectively addressed by scientific farmers who had had athletic training. Participation in organized college sports would help the OAC graduate to sustain the growing burden of racial mission in Ontario, Canada as a whole, and in the struggle for world leadership through the Empire, which occasionally required physical force to resolve. (And there was little doubt at OAC that more of the burden would have to be borne by rural Ontarians.) At colleges such as OAC, said a student, "the minds that are to rule the destinies of our race are fashioned. Let it be looked to that they are fashioned truly, and are supported by a strong constitution."<sup>43</sup> The farmer's old routine of excessively hard manual labour (which often ruined his health or sapped energy for anything but farming) and rudimentary physical exercise were insufficient for this task. A much higher level of physical power was needed which would be self-realizing in its overall effect and which, it seemed, only an ambitious programme of organized sport (or physical education rather than instruction) could supply. The rationalizing spiritual energies of existence had to be translated by moral force on the athletic field into a well-proportioned, healthy physical constitution.

Although since the 1870s there had been an exercise programme at OAC, interest in track and field, and, by the mid-1880s, a rugby club, these activities were a minor diversion from practical farming by comparison with the sports

programme developed in the 1890s and 1900s. The Athletic Association, an umbrella organization for college athletes, was established in 1892; regular league competition was sought; a wider range of sports was played (soccer, hockey, cricket, basketball, wrestling, boxing, swimming, and lawn bowling were the major additions); a new gymnasium and covered arena were built; and the first full-time athletic coach was appointed in 1906.<sup>44</sup>

The first honorary president of the Athletic Association hoped in 1892 that the new association "would bring the students together and strengthen the College 'esprit de corps'." He then advised that its members "should aim, not so much at winning matches or breaking records, as at developing to the full extent the powers of every student."<sup>45</sup> Proper physical development at OAC accomplished this goal because it reinforced the intellectual and moral strength so necessary in the character of the modern farmer. In this regard John Dryden thought that with the aid of the self-control which sport instilled "the best men" in rural Ontario could be "banded together" at OAC in order to serve the community by educating themselves to prevail in the world-wide competition for agricultural markets. Indeed, the college programme, like life itself, was in his eyes similar to a long distance run. To succeed in either endeavour, both student and runner had to discipline their mental, moral, and physical resources in order to deploy them with maximum effect at critical opportunities.<sup>46</sup> A student enthusiast for college sports elaborated upon the relationship between athletics and self-development:

No man can be irregular in habit, dissipated, or impure in life; can lack self-control, and strength of purpose, and become a strong man either

physically or mentally. Examples of physical, mental and moral wrecks of manhood are only too common. The steady, persistent, conscientious effort to develop a strong physique prevents a disastrous end . . . .

Firmness, determination, and self-control, as well as manual skill and mental keenness, result from physical culture. It takes these qualities to succeed in athletics; therefore, it follows that physical excellence is accompanied by superior force of character. We have only to look about us in daily life to see that this is true. The man who has not perfect control of both his physical and his mental being, who has never cultivated his physical nature, can not command as an one who is perfectly developed.<sup>47</sup>

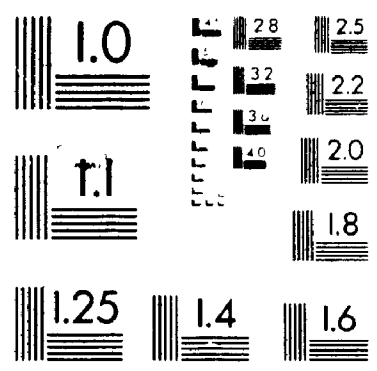
The distance between the playing fields of OAC and both the farm fields of Ontario and the widening global responsibilities of rural Ontarians was almost imperceptible. S.H. Gandier, the manager of OAC's 1912 Junior Intercollegiate champion rugby team, outlined some of the larger social implications of rugby for spectators as well as players.

Perhaps the greatest obstacle which our Canadian farmers face is a lack of union and co-operation in all their business operations. No Canadian college game requires greater perfection of union, combination and team play than rugby. Not only players are impressed with the importance of "working together," but in a well-played rugby match, spectators who understand the game are impressed in a like manner. It is, therefore, desirable, as a concrete demonstration of the results of co-operation, that good rugby should be played at an agricultural college where three-quarters of the students return to the farm for life.<sup>48</sup>

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College athletes also argued that individuals and nations which achieved a high degree of physical achievement usually excelled in all other aspects of life as well. "History has shown," noted one, "that those who have been leaders in the college games have been masters in the world." It was vital, wrote another, that the standard of physical development "must be raised if the race is to hold its own and advance." Upon the outbreak of World War I, the manager of the college rugby team recognized the special relevance of the sport for the military task at hand. "With war in the air," he said, "rugby should experience its most successful season because it is the game which most nearly approaches actual warfare from a tactical standpoint."<sup>49</sup>

The social interaction which produced the qualities of character admired in the soldier-athlete also helped form the basis of social refinement. The carriage and polish of the soldier and the fluid movement of the athlete's symmetrical physique were components of social grace. The meetings of campus associations added to these attributes more formal standards of social behaviour than a typical rural upbringing probably imparted. The annual banquet of the Athletic Association, for example, acquainted students with correct social conventions while offering an occasion to celebrate the year's athletic successes. They learned the protocol governing proper attire, exchanges of toasts, and after-dinner speeches. They may even have been introduced to more exotic dishes than they were accustomed to eating. The initial results of these encounters were not always auspicious, as is suggested by the review of one such occasion which an OAC freshman confided to his diary:



The Athletic Association held its annual supper to-night. The first we got was some stuff called oysters. I thought they had shells, but these didn't. I couldn't eat any, but I saw one man eat five plates; another fellow told him he would die if he didn't quit . . . . Some of the Second Year laughed at this, but I didn't see any joke. After supper they had some things they called toasts, which means that two fellows get up and make a speech, and the rest of us stand up and take a drink . . . . About ten the thing was over, and I went upstairs with my room-mate and a pain in my stomach.<sup>50</sup>

Other college men nevertheless insisted that farmers could not advance their interests without cultivating the social graces. Inattention to social skills, suitable dress, and personal neatness and cleanliness may have been tolerable in the days of pioneer insularity and unremitting manual labour, but were no longer acceptable when farmers had to be presentable to those with whom they now had to work and live more closely in their communities, farm associations, public institutions, and business ventures. "If the agriculturalist desires to improve his condition," said an OAC student, "the best thing he can do . . . is to be polite, cheerful, and obliging on all occasions. Let him take for his motto the three words, cleanliness, order, and neatness . . . ." The students had to wear a collar and necktie to be admitted to breakfast. They were "expected to look like gentlemen" said a college man who deplored the "slovenly" appearance of the majority of Ontario farmers. Undoubtedly, given this regimen, as another student said with pride, "many a young farmer, bashful and awkward in manner has gone from here an accomplished man, fitted to take a stand in society and to fill with honor any public position he may be called upon to occupy."<sup>51</sup> The annual college

"Conversazione," which was first held in 1904, helped ease the student's social adjustment. The "Conversazione" provided an evening for formal dress, concert music, and "promenading" to which Guelph's leading citizens were invited.

The social finishing a student acquired at OAC emerged naturally from a fully formed character. "As Tennyson expresses it," said a college dairy instructor, with the typical literary touch, "Manners are not idle, but the fruit of noble nature and a loyal mind." They were among the simple laws of life which conferred practical means of pursuing ideals. In the day-to-day work of a dairyman "of the ideal type," punctuality, courtesy, and care about personal appearance gave him "power to advance the general good of man."<sup>52</sup>

The dairy instructor pointed out that these truths would help Ontario farmers in much the same way as they had assisted major figures in history such as Nelson and Washington. These men had attained the stature of heroes because they had helped to further the highest ideal of self-realization -- the maximum of human liberty for self-development within the widest possible community. Two of the most revered heroes at OAC were Columbus and Lincoln. Columbus, who lifted "the mysterious veil" covering half the globe in one spectacular achievement, so expanded world prospects that an unprecedented release of human energies (especially those of the Anglo Saxons) had followed. And Lincoln, more than any other statesman in the new world, had focussed these forces to protect the American contribution to human freedom during the Civil War. He had masterminded a strategy which maintained a great democratic community's unity while elevating black slaves to the path of self-realization as a free people.

W.J. Brown could therefore urge "the perplexed youth to act the Columbus to his own undiscovered possibilities." An OAC student could begin to do so, he continued, by reading widely in biography, literature, science, history, and religion. James Reynolds, who placed Lincoln among the greatest heroes in history, left a lasting impression on those who heard him lecture in 1913 on Carlyle's Heroes and Hero-Worship. "That was a listening experience to be remembered for a life-time," said the eulogist at Reynolds's funeral in 1948.<sup>53</sup>

In the estimation of OAC men, these heroes were models for students of scientific agriculture because regeneration of rural life in Ontario would lead to consequences which were as momentous for human development as great voyages of discovery or high acts of statesmanship. Since the moral laws of existence found their best application in rural life, OAC men had to ensure that Ontario agriculture became a more perfect medium of ideals. For most of the nineteenth century, however, rural practicality and parochialism, compounded by the slow progress of scientific and other agricultural knowledge, hindered application of the laws of rural improvement. By the end of the century, rural problems had worsened. Unprecedented urban and industrial expansion in Ontario, since unrestrained by a sufficiently healthy rural sector, was proceeding in so distorted a fashion (on secular, materialist foundations) that it not only threatened rural society, but had also begun to undermine the hope that Canada could reinvigorate the world leadership of the Anglo-Saxon race through the British Empire. Ontario farmers faced conditions which were as critical as those confronted by heroic historical figures in time of war, social upheaval, or when some "mysterious veil" shrouding the path of human progress had to be raised.

OAC men thought they tackled these problems with considerable, if still untapped, advantages. The resources which made Ontario Canada's greatest province were agricultural. (Indeed these resources made Ontario, in their eyes, the greatest farming region in the world.) If Ontario could carry out the rural responsibilities implicit in this trust, Canada, which as a whole was similarly well-endowed, could fulfil its own unparalleled promise as a British community in a mission to rejuvenate the race for service to the rest of humanity through the Empire's unmatched global resources. If Ontario farmers, stirred to self-realizing action by the character and idealism of OAC's "captains" of agriculture, could seize the opportunities presented by the vast potential of farming in their province, they would have the greatest force with which to advance ideals in Ontario, Canada, the Empire, and wider world.

## Conclusion

The early nineteenth-century exponents of the philosophy of agriculture foresaw unbounded agricultural growth and improvement for Ontario provided that the intellect obtained a proper place in farm work. In the 1830s and 1840s, they thought that advances in practical and scientific knowledge (which had been accumulating since the eighteenth-century European agricultural revolution) could be harnessed in order to fulfil farming's developmental potential. During this expansion of the sphere of the mind in agriculture, farming would be elevated to the status of an intellectual activity, indeed a "scientific" profession. The pursuit of agricultural knowledge would also be redemptive. It would gradually remove the primeval curse afflicting man and nature. Man would eventually return to his original state in a restored garden.

The emerging scientific, technological, and economic complexities of agriculture by the turn of the twentieth century indicated to improvers that far more knowledge would be required to sustain rural Ontario's mission than had been anticipated earlier in the century. The mission seemed all the more urgent in view of certain ominous developments in the modern world. The regenerative rural influences were especially necessary in an increasingly industrial, urban, and secular age. Rural Ontario's influence, however, said agricultural officials in the provincial government, depended on the success of the "new agriculture," which, in turn, rested on a wider role for the intellect in rural affairs.

The Ontario Agricultural College and Experimental Farm had secured a place in provincial life at the turn of the century as the institution which was to provide the intellectual development Ontario's prospective farm leaders would require in order to advance the new agriculture. The prosperity and increased productivity attendant upon the progress of the new agriculture strengthened the college's position. OAC men thought that college educated agrarian idealists were fashioning a new harmony of God, man, and nature which would make rural Ontario the Eden of the Empire. (The primeval curse would be removed.) These idealists believed that they were engaged in transforming rural life in Ontario in an effort to ensure that modern Canada and the Empire continued to have an adequate agricultural foundation. College men thought that greater agricultural knowledge (which would result from the assertion of the prior role of the intellect in agricultural questions) would be the principal means of accomplishing this goal. This knowledge would allow farmers to adjust to and accelerate changes in agricultural products, techniques, machinery, and social conditions. Consequently, anxiety about the decline of agriculture in Ontario was not the dominant response at OAC to the main features of national development at the time: the opening of the North and West, the development of prairie agriculture, industrial and urban growth, and the emergence of other resource sectors such as mining, hydro-electricity, and forestry. OAC men shared the widespread confidence in Canada's future at the turn of the century mainly because of Ontario's agricultural expansion and rural social progress. They were not oblivious to possible threats to rural life in the social and economic trends of the period; however, they thought that once the proper status of the intellect in agriculture had been established by OAC's idealists, farming's most pressing problems could

be solved. The necessary rural contribution to the solution of the other major problems in Canadian society would thus be assured.

**Notes**

**Part Two**

**Agrarian Idealism at Ontario Agricultural College**

**Abbreviations**

<u>CAO</u>	<u>Annual Report of the Creameries Association of Ontario</u>
<u>DEO</u>	<u>Annual Report of the Dairymen's Association of Eastern Ontario</u>
<u>DWO</u>	<u>Annual Report of the Dairymen's Association of Western Ontario</u>
<u>ESO</u>	<u>Annual Report of the Entomological Society of Ontario</u>
<u>FI</u>	<u>Annual Report of the Farmers' Institutes of Ontario</u>
NA	National Archives of Canada
<u>OBA</u>	<u>Annual Report of the Ontario Bee-keepers' Association</u>
UGL	University of Guelph Library Archival Collections



### Introduction

1. Brown and Cook, Canada, 1896-1921, pp. 1-2.
2. Cited in Allan Smith, "The Thought of George Monro Grant," Canadian Literature 83 (Winter, 1979), pp. 99-100.
3. Doug Owram, The Government Generation: Canadian Intellectuals and the State, 1900-1945 (Toronto, 1986), pp. 20-22; Carl Berger, The Sense of Power, p. 191.

### Chapter V: Modernity

1. Fowke, Canadian Agricultural Policy, pp. 220-22; Owram, Promise of Eden, pp. 170-73; Terry Cook, "'Apostle of Empire'": Sir George Parkin and Imperial Federation," (Ph.D. thesis, Queen's University, 1977), pp. 311-12; see also Terry Cook, "George R. Parkin and the Concept of Britannic Idealism," Journal of Canadian Studies 10, no. 3 (August, 1975), pp. 15-31.
2. Ramsay Cook, The Regenerators: Social Criticism in Late Victorian English Canada (Toronto, 1985), chapter two, "The Roots of Modernism: Darwinism and the Higher Critics"; the citation is on p. 9 of that chapter; McKillop, A Disciplined Intelligence, chapter four, "The Veils of Isis."
3. Cook, The Regenerators, pp. 35-36.
4. Berger, The Sense of Power, pp. 109-15; Smith, "The Thought of George Monro Grant," p. 98; Owram, The Government Generation, pp. 14-16; Cook, "'Apostle of Empire'," pp. 460-61, 518-20.
5. Berger, The Sense of Power, pp. 190-94; S.E.D. Shortt, The Search for an Ideal: Six Canadian Intellectuals and their Convictions in an Age of Transition, 1890-1930 (Toronto, 1976), p. 137; Owram, The Government Generation, pp. 14-22.
6. Houghton, The Victorian Frame of Mind, chapter one, "Character of an Age"; see also for citations, pp. 22, 223, 6.
7. Ibid., pp. 9-11.
8. Cook, The Regenerators, pp. 3-6, 40.
9. Ibid., passim.

10. McKillop, A Disciplined Intelligence, chapter six, "The Secret of Hegel," and "John Watson and the Idealist Legacy," Canadian Literature, 83 (Winter, 1979), pp. 72-75; Cook, "'Apostle of Empire,'" pp. 65-71; Allan Smith, "The Thought of George Monro Grant," pp. 107-115; B. Anne Wood, Idealism Transformed: The Making of a Progressive Educator (Toronto, 1985), p. ix.
11. Wood, Idealism Transformed, chapter two, "A Creed of Practical Idealism"; Cook, "'Apostle of Empire,'" pp. 68-71; for a contemporary British discussion of the concept see Henry Jones, Idealism as a Practical Creed (Glasgow, 1909).
12. Cook, "'Apostle of Empire,'" pp. 70-71, 353.
13. Wood, Idealism Transformed, pp. 24-25, 32-33.
14. McKillop, "John Watson and the Idealist Legacy," pp. 80-83; Richard Allen, ed., Salem Bland, The New Christianity (University of Toronto Press edition, 1973), pp. xvi-xvii.
15. John R. Sorfleet, "Transcendentalist, Mystic, Evolutionary Idealist: Bliss Carman, 1886-1914," in George Woodcock, ed., Colony and Confederation: Early Canadian Poets and Their Background (Vancouver, 1974), p. 194; Shortt, The Search for an Ideal, p. 51.
16. Wood, Idealism Transformed, p. 11, 13-14; Shortt, The Search for an Ideal, pp. 23, 56; Cook, "'Apostle of Empire,'" p. 386
17. Shortt, The Search for an Ideal, pp. 29-31, 54; Wood, Idealism Transformed, pp. 7-19, 29-30, 56; Putman maintained that "those who make the earth smile and bring forth vegetables, grains, grasses, trees and flowers are freer yet more stable, gentler yet stronger, simpler yet more profound, and however poor in material things, richer in spirit than any other class of people"; ibid p. 30.
18. Cook, "'Apostle of Empire,'" pp. 15-16.
19. Ibid., p. 386; compare Parkin's view with Putman's: "You had abundant time (on a farm) for contemplation and for cultivating acquaintance with yourself. I wonder if modern life with its rush, its bustle and its jazz allows a youth time to know himself! And especially I wonder whether the environment of modern cities encourages youth to think about the simple and fundamental -- and therefore the really important things of life!" Wood, Idealism Transformed, p. 16.
20. Cook, "'Apostle of Empire,'" pp. 189-93.
21. Ibid., pp. 180-89.
22. Ibid., chapter five, "Canada: 'Keystone' of Empire," pp. 200-24; Berger,

- "The True North Strong and Free," in Peter Russell, ed., Nationalism in Canada (Toronto, 1966), p. 17.
23. Cook, "Apostle of Empire," p. 526; NA, Sir George Parkin Papers, MG 30, D 44, vol. 71, pp. 22788-89, 22797, "Agricultural Education in Canada," n.d.
  24. "ESO," p. 8 in DAR, 1895, vol. II; "CAO," p. 255 in DAR, 1895, vol. I.
  25. Ibid., pp. 254-56; "AEU," pp. 281-86 in DAR, 1893, vol. I.
  26. Ibid., p. 286.
  27. "OAC," pp. 5-6 in DAR, 1886.
  28. Ibid., pp. 5-6 in DAR, 1887; p. 6, 1888.
  29. "FI," p. 57 in DAR, 1891.
  30. The total number of BSAs between 1888 and 1898 is eighty-nine; see University of Toronto, Calendar, 1906 - 07, pp. 355-59. The statistics given in the text of this chapter for staff members in 1898 do not include Mills, one other BSA who was on staff as the Assistant Librarian, and the college stenographer, who obtained the BSA in 1900; see "OAC," p. iv in DAR, 1898, vol. I.
  31. "DWO," p. 110 in DAR, 1896, vol. I; in a review of scientific work at OAC between 1892 and 1902, Professor Lochhead said: "It is unquestionably true that the laboratory method of instruction was the greatest single factor in the progress that has taken place in the last decade. In the eighties and before, the lecture system prevailed to the almost total absence of laboratory work." The OAC Review, March 1902, pp. 3-4.
  32. "FI," p. 61 in DAR, 1892; "AEU," p. 7 in DAR, 1899, vol. I; p. 12 in 1900, vol. I; The OAC Review, December 1893, p. 17.
  33. "AEU," p. 221 in DAR, 1891; p. 9 in 1900, vol. I; p. 14 in 1898, vol. I.
  34. Ontario. Report of the Statistics Branch, 1939, p. 43.
  35. Ibid., pp. 45-46; Canada. Sessional Papers, vol. D, 1915, Census of Canada 1911. Vol. IV, Agriculture, pp. lxxviii, (hereafter as Census (1911) Agriculture).
  36. Ibid., p. lxxxvii.
  37. Ontario. Report of the Statistics Branch, 1939. p. 41. The annual average value of an acre of field crops in Ontario between 1892 and 1901 was \$12.49 and \$16.98 between 1902 and 1911. Ibid.

38. Ibid., pp. 32-33, 40.
39. "AEU," pp. 65-66 in DAR, 1903, vol. I.
40. "AEU," p. 66 in DAR, 1903, vol. I; The OAC Review, March 1899, p. 1; December 1899, p. 14.
41. Census (1911) Agriculture, pp. viii, lv, xci, 413, xlv; "AEU," p. 63 in DAR, 1903, vol. I.
42. "OAC," p. 7 in DAR, 1899, vol. I; "AEU," pp. 10-11 in DAR, 1902, vol. I; "FI," p. vii in DAR, 1896, vol. II; "FI," p. 6 in DAR, 1904, vol. II; "OAC," p. 4 in DAR, 1893, vol. I; p. viii in 1900, vol. I.
43. "OAC," pp. 14-16 in DAR, 1905, vol. I; DAR, 1910, vol. I, pp. 7-8.
44. "AEU," p. 81 in DAR, 1906, vol. I; ibid., p. 89 in DAR, 1910, vol. I.
45. Cook, "'Apostle of Empire'," pp. 381-99.

#### Chapter VI: Spirit

1. The OAC Review, November 1900, p. 4.
2. Ibid., April 1904, pp. 26, 29.
3. Ibid.
4. Ibid., November 1900, p. 4.
5. J.B. Reynolds, "The Literature of Nature," (M.A. thesis, University of Toronto, 1911), pp. 81-82. Reynolds made this point in commenting on Tennyson's poetry. For Reynolds, Tennyson was the idealist.
6. The OAC Review, November 1900, pp. 3-8.
7. Houghton, The Victorian Frame of Mind, pp. 220-33.
8. A.L. Le Quesne, Carlyle (Oxford, 1982), pp. 5, 8-9.
9. Ibid., pp. 60-61; Le Quesne says that from 1837 to 1850, Carlyle's "influence upon the rising intellectual generation was so extraordinary that it has never been approached in modern British history by any other single intellectual figure, not even by the great systematic thinkers such as Freud in the 1920s and Marx in the 1930s, with whom in their own field Carlyle could not stand serious comparison." (p. 55); Peter Gordon and John White, in Philosophers

- as Education Reformers: The Influence of Idealism on British Educational Thought and Practice (London, 1979), argue that among British social critics between 1820 and 1870 "Carlyle's was the most powerful voice, declaiming in tones which tend to jar on our modern ears, but which deeply affected his contemporaries, against the absence of spiritual values in the new industrial society." (p. 4)
10. Houghton, The Victorian Frame of Mind, p. 49; Basil Willey, Nineteenth Century Studies: Coleridge to Matthew Arnold (New York, 1949), pp. 102-05; Asa Briggs, Victorian People: A Reassessment of Persons and Themes, 1851-67 (Pelican Books edition, 1965), p. 125.
  11. Berger, The Sense of Power, p. 222; R. Cook, The Regenerators, pp. 19, 237 (footnote 44); T. Cook " 'Apostle of Empire'," pp. 46-50, 531.
  12. Wood, Idealism Transformed, p. 30.
  13. Shortt, The Search for an Ideal, pp. 48-49, 162 (footnote 17); 45, 55-57.
  14. John Passmore, A Hundred Years of Philosophy (Penguin edition 1968), p. 52.
  15. Shortt, The Search for an Ideal, pp. 140-41; McKillop, A Disciplined Intelligence, pp. 184, 266 (footnote 42); Green and White, Philosophers as Educational Reformers, pp. 58-59.
  16. T. Cook, " 'Apostle of Empire'," pp. 65-68; Passmore, A Hundred Years of Philosophy, pp. 53-54.
  17. Roland Stromberg, An Intellectual History of Modern Europe (New York, 1966), pp. 199-203.
  18. Introduction to Contemporary Civilization in the West: A Source Book Prepared by the Contemporary Civilization Staff of Columbia College, Columbia University, vol. II, (New York, Third Edition, 1961), pp. 127-28; Robert Anchor, in The Enlightenment Tradition (New York, 1967), notes that "Virtue for Kant, is not prescribed by nature; it supplants nature. So vigorous was his conception of virtue that he suspected any allegedly moral act which simultaneously would satisfy a natural urge." (p. 106) Anchor explains that Goethe, who profoundly influenced Carlyle, had a totally opposite view: "In contrast to Kant, Goethe denied that the discord in the human world stemmed from a conflict between ignoble and egoistic natural impulses, on the one hand, and noble ethical maxims on the other; that is, from an a priori 'conflict between the natural and moral species.' On the contrary, the tragedy of Werther [the protagonist of Goethe's first novel, The Sorrows of Young Werther], his Weltschmerz, his disgust with the world, arise from the fact that his passions are lofty and fine, but are thwarted by the world in which he lives . . . . Finally, Werther's suicide, like that of Montesquieu's Roxane and Lessing's Emilia Galotti, was a humanist protest

against the frustration of nature by a corrupt society." (pp. 122-23) Both Goethe and Fichte maintained that human thought had important subjective origins. Anchor notes again that "Werther's finest thoughts are just those that spring from this feelings." (p. 122) Fichte wrote that "the kind of philosophy which one adopts depends upon the sort of man one is; for a philosophical system is not a lifeless piece of furniture that one might take or discard . . . but it is animated by the soul of the man who has it"; see Colin Brown, Philosophy and Christian Faith (First edition, London, 1969; reprinted 1971), p. 118.

19. Stromberg, An Intellectual History of Modern Europe, pp. 242-50; Introduction to Contemporary Civilization, pp. 127-28; (emphasis in original).
20. Passmore, A Hundred Years of Philosophy, pp. 55-56; T. Cook " 'Apostle of Empire' " pp. 71-73; Shortt, The Search for an Ideal, p. 141; McKillop, A Disciplined Intelligence, p. 195.
21. McKillop, A Disciplined Intelligence, p. 206; Wood, Idealism Transformed, pp. 26-27.
22. Shortt, The Search for an Ideal, p. 141; 47-48; UGL, R21 OAC, J.B. Reynolds Papers, "J.B. Reynolds Autobiography," np, chapter entitled "Classés." At the University of Toronto, Reynolds was also exposed to the influence of the idealist Professor Maurice Hutton. In his autobiography Reynolds recalled that his acquaintance with Hutton extended into the 1920s when, as OAC President, Reynolds entertained Hutton in his home after the latter had given one of his "popular lectures" in Guelph or at the college. For Hutton, see Shortt, The Search for an Ideal, pp. 77-94; McKillop, A Disciplined Intelligence, p. 200.
23. "AEU," pp. 42-43 in DAR, 1900, vol. I.
24. The OAC Review, April 1903, p. 15.
25. "Fi," p. 17 in DAR, 1908, vol. II.
26. The OAC Review, December 1907, p. 120; December 1903, p. 16.
27. Ibid., p. 13.
28. Ibid., November 1889, np; note the similarity between Hutton's statement and John Watson's idea that the progress of intellectual inquiry required that " 'at each step we feel we are penetrating a little deeper into the nature of things, and learning to re-think the embodied thoughts of God' "; see McKillop, "John Watson and the Idealist Legacy," p. 75. Charles Taylor comments that "God's intellect is ultimately revealed to us for Hegel, it only lives in our thought. Hence we can participate in an intellectual intuition. God's thought is ours"; see Taylor, Hegel (Cambridge, 1975), p.

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29. Gordon and White, Philosophers as Educational Reformers, p. 17; Charles Taylor says that in Hegel's idealism "spirituality, tending to realize spiritual goals, is of the essence of nature. Underlying natural reality is a spiritual principle striving to realize itself"; see Taylor, Hegel, p. 39; for Reynolds see p. 195 above.
30. The OAC Review, February 1903, p. 13; (emphasis in original); May 1904, p. 61. George Altmeyer's "Three Ideas of Nature in Canada, 1893-1914," Journal of Canadian Studies 11, no. 3 (August 1976), pp. 21-36 permits the conclusion that the view of nature's benevolence at OAC can be seen as part of a wider phenomenon in Canadian society between the mid-1890s and about 1914. "Indeed," says Altmeyer, "as a reaction against certain distressing tendencies in their society, many Canadians wanted to get 'back to nature,' to better manage her resources and to use her as an instrument of religious expression . . . . This positive perception involved the ideas of Nature as a Benevolent Mother capable of soothing city-worn nerves and restoring health, of rejuvenating a physically deteriorating race and of teaching lessons no book learning could give; as a Limited Storehouse whose treasures must in future be treated with greater respect; and as a Temple where one could again find and communicate with Deity." (p. 22) Although Altmeyer does not link this development to the influence of idealism, it must be more than coincidental that as idealism dominated Canadian university education and found the various practical outlets already discussed above, it would also shape popular attitudes towards nature. A Western Canadian rural perspective on this general phenomenon at the turn of the century can be obtained from David C. Jones's "'There is Some Power About the Land': The Western Agrarian Press and Country Life Ideology," Journal of Canadian Studies, 17, no. 3 (Fall, 1982), pp. 96-108. Jones's survey of the prairie agricultural press between 1900 and 1920 reveals that positive views of nature dominated editorial comment. The Winnipeg edition of The Farmer's Advocate claimed, for example, that "there is some power about the 'land' that elevates, morally and emotionally . . ." The journal said that the land "surely must be the nurture of men and women who are destined to carry forward the best ideals of the race in religion, conduct, industry, recreation, education and cooperation." (p. 99) Although Jones, like Altmeyer, makes no reference to idealism, he concludes in an idealist vein that "there is something unusual about the place so many contemporaries identified as the source of the Spirit. It was the singular fate of many during the settlement period of the Canadian West that the mystical power each era seeks so possessively was to be found in the land itself." (p. 107) It is of interest that Jones also suggests that James Reynolds made a major contribution to this development in popular ideas while President of Manitoba Agricultural College (1915-1920). Jones says that Reynolds "was one of the most insistent advocates of the country life ideology in Canada." (p. 106) Other important sources of "practical idealism" in Western Canadian educational life between 1900 and 1920 were the President of the University of Saskatchewan, Walter Murray, and the

President of the University of Alberta, Henry Marshall Tory. For Murray, see Michael Hayden, Seeking a Balance: The University of Saskatchewan, 1907-1982 (Vancouver, 1983) pp. 29-31; for Tory, see Mario Creet, "H.M. Tory and the Secularization of Canadian Universities," Queen's Quarterly 88, no. 4 (Winter, 1981), p. 725.

31. The OAC Review, December 1903, p. 21. Roy Daniells suggests that Lampman "is consistently Wordsworthian; he finds his consolation, his sense of the divine, his daily sensuous delights, all in the countryside, the world of farm and forest, lake and rock and stream." (See C.F. Klinck, ed., Literary History of Canada: Canadian Literature in English (Toronto, 1965), p. 390.) Altmeyer refers to the work of Lampman, Bliss Carman, and Charles G.D. Roberts to demonstrate the emergence in Canadian literary circles of the new positive emphasis in the relationship between man and nature at the turn of the century. "For Lampman," says Altmeyer, "the omnipresent spirit in Nature is alternately christened 'energy,' 'force,' and 'spirit'; while in regard to man's connection with that spirit, Lampman boldly contends: 'We know with the fullest intensity of sympathy that we are of one birth with everything about us, brethren to the trees, and kin to the very grass that now . . . flings the dew about our feet.'" (See "Three Ideas of Nature," p. 33.)
32. The OAC Review, January 1908, pp. 185-86.
33. Ibid., pp. 186-87.
34. "FI," p. 19 in DAR, 1908, vol. II.
35. The OAC Review, October 1890, p. 11.
36. C.A. Zavitz, Spiritual Life: Personal Thoughts (London, 1932), np.
37. The OAC Review, January 1915, p. 156-57.
38. Ibid., p. 156; UGL, REI OAC, OAC Students, Paul Angle, "Recollections of Life at O.A.C.," pp. 4-5.
39. The OAC Review, February 1890, p. 30; December 1898, pp. 4-10; March 1903, p. 23; C.C. James in Tennyson, the Imperialist, (Toronto, 1910) commented "that Tennyson helped in verse to elaborate and illumine great truths which Darwin was teaching in plain prose." (p. 14); Ross College on the Hill, p.70.
40. J.H. Panton, Rambles in the North-West, Across the Prairies, and in the Passes of the Rocky Mountains (Guelph, 1885), p. 12; Panton's party on this trip west named a peak in the Rockies Mount Dawson in Professor Dawson's honour; J.H. Panton, Selkirk Story Records or Lessons from a Limestone Quarry (Winnipeg, nd), pp. 7-8. (The latter document is the printed version of a lecture Panton gave to the Young People's Association of Knox Church, Winnipeg on 10 March 1884.)



41. "AEU," p. 82 in DAR, 1904, vol. I.
42. McKillop, A Disciplined Intelligence, pp. 205-06, 212-24.
43. The OAC Review, December 1893, p. 12.
44. Ibid.
45. Ibid., December 1909, p. 109.
46. Ibid., p. 110.
47. Ibid., p. 109; concerning the purpose of his article on Jesus Reynolds added, "Christological creeds have so thrust Christ back into heaven, and so obscured His image from human gaze, that there is need at the present moment of a re-incarnation, whereby we plain men may see the 'stupendous meaning of the 'sinless years that breathed beneath the Syrian blue.' This is not a sermon, but an appreciation of a human character." (p. 107)
48. Ibid., April 1908, p. 359.
49. Ibid., November 1896, p. 2.
50. Jones, Idealism as a Practical Creed, pp. 101-02.

#### Chapter VII: Reason

1. The OAC Review, February 1890, p. 35.
2. "FI," pp. 33-34 in DAR, 1892.
3. "AEU," p. 84 in DAR, 1902, vol. 1.
4. The OAC Review, December 1892, p. 1.
5. Ibid., May 1900, pp. 10-11.
6. Ibid., December 1898, pp. 4-8.
7. Ibid., June 1890, pp. 66-67. For examples of rural superstition in the United States and France see E.W. Hayter, The Troubled Farmer: Rural Adjustment to Industrialism, 1850-1900 (Dekalb, Illinois, 1968), pp. 6-8 and Eugen Weber, Peasants Into Frenchmen: The Modernization of Rural France, 1870-1914 (Stanford, 1976), pp. 23-29; ACJ, 15 February 1848, pp.

32-33; CF, 1 January 1868, pp. 8-9; 1 April 1868, p. 104; 15 April 1868, p. 121; 15 October 1868, p. 316; 29 November 1873, p. 431.

8. The Canadian Live-Stock Journal, June 1886, p. 158.
9. "OAC," pp. 131-32 in DAR, 1886.
10. "OAC" p. 157 in RCA, 1882; ibid., p. 324, 1880; "OAC," p. 3, DAR, 1885.
11. See pp. 33-36 above.
12. "OBA," p. 49 in DAR, 1894, vol. 1; (emphasis in original).
13. "DEO," p. 98 in DAR, 1904, vol. 1.
14. The OAC Review, December 1909, p. 107.
15. Taylor, Hegel, pp. 166-67; (emphasis added); for T.H. Green's similar concept of self-realization, see Melvin Richter, The Politics of Conscience: T.H. Green and His Age (London, 1964), p. 104. Peter Gordon and John White explain that "Self-realization, . . . in philosophical idealism, is the highest aim or ideal of human life: in realizing himself, the individual is at the same time becoming united with reality as a whole." See Gordon and White, Philosophers as Educational Reformers, p. 195.
16. Houghton, The Victorian Frame of Mind, p. 29; (emphasis in original).
17. See pp. 210-11 above; The OAC Review, November 1912, pp. 39-40.
18. "Annual Report of the Livestock Associations of the Province of Ontario," pp. 43-44 in DAR, 1906, vol. I; "DEO," p. 18 in DAR, 1900, vol. 1.
19. The OAC Review, November 1912, p. 40.
20. Ibid., January 1904, p. 42.
21. UGL, REI OAC, J.B. Reynolds Papers, "J.B. Reynolds Autobiography," (np) chapter entitled "From Country to Town"; The OAC Review, November 1912, p. 40.
22. Ibid., January 1904, pp. 35-36.
23. Ibid., November 1912, p. 40; (emphasis added); October 1903, pp. 20-22.
24. Ibid., January 1904, pp. 42-43; (emphasis added); the citation in footnote 20 on p. 230 above (on the role of the "ideal" in a meaningful life) is the paragraph which precedes the passage cited here.
25. Ibid., July 1913, p. 532; January 1914, p. 217; (emphasis added).

26. Le Quesne, Carlyle, pp. 59-61, 72; Houghton, The Victorian Frame of Mind, p. 255.
27. Ibid., pp. 253, 250-51.
28. Leslie Armour and Elizabeth Trott, The Faces of Reason: An Essay on Philosophy and Culture in English Canada, 1850-1950 (Waterloo, Ontario, 1981), p. 317; Richter, The Politics of Conscience, pp. 111, 114. In a discussion of the idealism of Paxton Young and John Watson, Armour and Trott explain further: "Reason must work toward the completion of the structure of individual experience as a rational order. This is a form of what one might call a 'self-realization' theory . . . . There is a real order. There is an idea of perfection whose details we do not know but which can, nonetheless, serve as a goal as we make our own experience, our own lives, and our communities more coherent . . . . Self-realization is not a matter of accumulating pleasures. It is a matter of developing an inner coherence in the course of matching the rational order of the world." (See The Faces of Reason, pp. 102, 104, and 222.)
29. See p. 193 above; The OAC Review, December 1898, p. 4.
30. The Canadian Live-Stock Journal, March 1888, pp. 70-71. An insight into the problem Shaw was addressing can be obtained in a letter written in 1900 to W.C. Good from a boyhood friend: "I think I know," the latter wrote, "how you have felt about the farm work. I remember how we boys used to protest most vehemently against a continuity of work that reduced our minds to a state of helpless passivity and invested books with the tantalizing charm of forbidden fruit." See W.C. Good, Farmer Citizen (Toronto, 1958), pp. 50-51.
31. "FI," p. 134 in DAR, 1892; The OAC Review, June 1890, p. 74; November 1889, np.
32. Ibid.
33. Ibid.; (emphasis in original).
34. "FI," p. 7 in DAR, 1904, vol. II.
35. The OAC Review, January 1900, p. 6.
36. The OAC Review, January 1925, p. 106; UGL, REI OAC, J.B. Reynolds Papers, "Addresses and Writings," (9 June 1924, p. 4); The OAC Review, February 1904, p. 12.
37. "CAO," p. 233 in DAR, 1893, vol. I; "AEU," pp. 427-29 in DAR, 1895, vol. I; and "DEO," p. 57 in DAR, 1901, vol. I.
38. "OAC," pp. 240, 234, 241, and 246 in DAR, 1898, vol. I.

39. "Annual Report of the Live-Stock Associations of the Province of Ontario," pp. 157-58 in DAR, 1906, vol. I.
40. The OAC Review, October 1905, pp. 11-14. Compare Gamble's conception of the ideal man with the vision of man which Carlyle's friend John Sterling obtained through German idealism. "German writers," says historian Shirley Robin Letwin, "endowed him with a vision of man as the centre of the universe, intimately connected to and revealed by everything in the universe, a vision in which man could see all around him and comprehend the whole. He was a microcosm who found himself again in the macrocosm. To read a German book was therefore, Sterling declared, 'like knocking one's head through the blue sky and getting a view of the other side of the stars -- not, I think, the wrong side.'" See Letwin, The Pursuit of Certainty: David Hume, Jeremy Bentham, John Stuart Mill, Beatrice Webb (Cambridge, 1965), p. 230.
41. "OAC," p. 1 in DAR, 1897, vol. I; *ibid.*, pp. 1-2 in DAR, 1898, vol. I.
42. The OAC Review, May 1904, pp. 48-49; March 1902, pp. 20-21; March 1903, pp. 32-34.
43. The OAC Review, July 1891, pp. 105-06.
44. *Ibid.*, March 1903, p. 11; March 1904, p. 47; "OAC," pp. 149-50 in DAR 1902, vol. I; pp. 293-94, 1909, vol. I; p. vii, 1901, vol. I. For further discussion from an archival perspective of the nature of the documentation created and used at OAC, see my "'Pen and Plough' at Ontario Agricultural College, 1874-1910," Archivaria 19 (Winter 1984-85).
45. "FI," p. 18 in DAR, 1908, vol. II.
46. The OAC Review, January 1902, p. 14; January 1904, p. 36; "OAC," p. 15 in DAR, 1905, vol. I.
47. The OAC Review, May 1905, p. 466; "DEO," p. 38 in DAR, 1906, vol. I.
48. "AEU," p. 81-83 in DAR, 1906, vol. I.
49. "AEU," p. 89 in DAR, 1910, vol. I.

#### Chapter VIII: Character

1. "AEU," p. 83 in DAR, 1906, vol. I.
2. Richter, The Politics of Conscience, pp. 177, 197; McKillop, A Disciplined

- Intelligence, pp. 201-3.
3. Passmore, A Hundred Years of Philosophy, pp. 57-58; McKillop, A Disciplined Intelligence, pp. 196-200; (emphasis added).
  4. The OAC Review, March 1890, p. 38; April 1892, pp. 103-4; June 1890, pp. 67-68; "FI," p. 17 in DAR, 1908, vol. II.
  5. The OAC Review, December 1893, p. 12; December 1892, p. 8.
  6. Ibid., June 1890, p. 74.
  7. "CAO," p. 254 in DAR, 1895, vol. I.
  8. The OAC Review, January 1914, p. 218.
  9. Ibid., February 1904, p. 41.
  10. "AEU," pp. 47-48 in DAR, 1900, vol. I.
  11. "FI," p. 29 in DAR, 1908, vol. II.
  12. Berger, The Sense of Power, pp. 218-19.
  13. Ibid., p. 219.
  14. Ibid., passim.
  15. The OAC Review, April 1903, pp. 12, 15; May 1902, p. 25.
  16. Ibid., December 1893, p. 12; December, 1898, p. 10; see Berger, The Sense of Power, pp. 227-29 for similar ideas.
  17. The OAC Review, April 1901, pp. 3-9.
  18. Ibid., p. 4.
  19. Armour and Trott, The Faces of Reason, pp. 222, 219; Richter, The Politics of Conscience, p. 201.
  20. Ibid., p. 197.
  21. The OAC Review, April 1901, p. 8.
  22. Ibid., p. 6.
  23. Ibid., February 1908, p. 261.
  24. Ibid., October 1892, p. 1.

25. "FI," pp. 27-28 in DAR, 1908, vol. II.
26. The OAC Review, May 1911, pp. 408-11; C.C. James, "The Romance of Ontario or the Peopling of a Province," Ontario Bureau of Industries, Report (Appendix), 1897, p. 124. James gave this paper at the Ontario Historical Exhibition in Toronto on 20 June 1899; The OAC Review, May 1911, p. 400.
27. The OAC Review, July 1911, p. 536.
28. Ibid., May 1911, p. 411.
29. Ibid., December 1893, p. 13.
30. Ibid., February 1904, p. 36; January 1908, pp. 185-86; November 1900, p. 4.
31. The OAC Review, December 1893, p. 20.
32. "OAC," p. 19 in DAR, 1904, vol. I. In his history of OAC, Alexander Ross says, "It was J.B. Reynolds who made English literature a significant course on the campus of the Ontario Agricultural College." Ross adds that under Reynolds and his successors in the English department, literary studies "became a force that must be measured when anyone attempts to describe what made the O.A.C. graduate the kind of person he was . . ." See The College on the Hill, pp. 52-53.
33. The OAC Review, November 1900, pp. 5, 8; April 1901, p. 9; April 1902, pp. 11-12.
34. C.C. James, A Tennyson Pilgrimage and Tennyson, the Imperialist, (Toronto, 1910). (James published these two essays in a single pamphlet.) The reference to Tennyson's "ideals" is in Tennyson the Imperialist, p. 20; see also Victoria University, Manuscripts, C.C. James, "The Spirituality of Tennyson," pp. 2, 7-9.
35. The OAC Review, December 1904, p. 142.
36. Ibid., November 1900, pp. 3-4; January 1909, p. 210; December 1903, p. 13.
37. Ibid., p. 10; C.C. James, "The Romance of Ontario," pp. 121, 139. For James's contributions to the Ontario Historical Society see Gerald Killan, Preserving Ontario's Heritage: A History of the Ontario Historical Society (Ottawa, 1976), pp. 103-5. James's interest in the Ontario Provincial Museum is discussed in Gerald Killan, David Boyle: From Artisan to Archaeologist (Toronto, 1983), p. 207.
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39. Ibid., March 1902, pp. 20-21; "OAC," p. 12 in DAR, 1908, vol. I; p. 13, 1905;

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40. E.C. Drury, Farmer Premier (Toronto, 1966), pp. 42-44; C.B. Sissons, Nil alienum: The Memoirs of C.B. Sissons (Toronto, 1964), p. 69.
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