CHAPTER XI

ROYAL SOCIETY OF CANADA

In the summer of 1881, the Governor-General of Canada, the Marquis of Lorne, invited me to visit him in his apartments in the citadel of Quebec, with the object of consulting me in regard to a project for the organisation of a society, to be called the Royal Society of Canada. The idea was new to me, and evidently involved serious difficulties, besides no small labour on the part of those who might be entrusted with the arrangement of the details. I felt confident, however, that under the patronage of Lord Lorne, it would be successful, and that the scientific side, at least, of the proposed society would be strong from the first. Personally, I would have preferred to have had to do with a society wholly devoted to Natural Science, resembling in its plan the Royal Society of London, but Lord Lorne was desirous of making the basis of the society as comprehensive as possible, and especially of enlisting the French Canadian

element, which, though rich in cultivators of Literature and History, had given little attention to Natural and Physical Science. Local reasons also weighed in favour of giving it a popular and democratic character. Lord Lorne had already entered into correspondence with the president of the Royal Society and other eminent men in England, and was evidently prepared to give a cordial and efficient support to the undertaking. My own wide acquaintance with scientific and educational men in different parts of Canada, seemed to give me exceptional facilities, for at least the preliminary work, and I undertook, at the request of his Excellency, to preside over the first meeting of the society, stipulating, however, that my friend Dr. Chauveau should be associated with me as vice-president, as a representative of literature, and of the educated element in French Canada. Names were suggested of men suited to form a provisional council, and Dr. (now Sir John) Bourinot was invited to be honorary secretary.

Informal meetings were held, first at my residence in Montreal and afterwards at Government House in Ottawa. The general constitution of the society was provisionally

settled, and the men available for membership were corresponded with, and invited to attend the first meeting. The society was launched in Ottawa in May 1882. The labour devolving on myself, notwithstanding the able assistance of my confrères, and especially of the honorary secretary, Dr. Bourinot, was very great, and included the answering of a vast number of questions, and the solving of many difficulties. This was, however, more than compensated for, by witnessing the gathering of scientific and literary men at the first meeting, most of them known to me personally, but many previously unknown to each other, and yet all ready to co-operate cordially in the work proposed for the society.

The objects in view, and the duties and relations of the new society, may be best learned from the presidential address delivered in the Senate Chamber, at Ottawa, before His Excellency the Governor-General, who presided, the members of the new society, and a large number of ladies and gentlemen invited on the occasion. I think it the more necessary to insert this, as it marked, not only an important point in my own life, but also an event which must be regarded as

marking an epoch in Canadian science and literature, and one, with which, thanks to the kindness of Lord Lorne, and of my scientific and literary brethren, my name will be associated so long as the society endures.

The institution of this society should also have special mention in the history of the term of office of a Governor-General, who, in this movement, identified himself with the higher intellectual life of the Dominion of Canada, even more fully than any of the other able and eminent men, who had preceded him, as representing her Majesty in Canada.

The following is my address, delivered before the Royal Society of Canada in May 1882:—

"We meet to-day to inaugurate a new era in the progress of Canadian literature and science, by the foundation of a body akin to those great national societies which, in Great Britain and elsewhere, have borne so important a part in the advancement of science and letters. The idea of such a society for this country, may not be altogether new, but if broached at all, it has been abandoned, from the inability of its advocates to gather together from our widely

distributed provinces the elements necessary to its success. Now it presents itself under different and happier conditions. In the mother country, the reign of Queen Victoria, our gracious sovereign, has been specially marked by the patronage of every effort for the growth of education, literature, science, and art, not only on her part, but on that of the lamented Prince Consort, and of other members of the royal family. It is fitting, that here too, the representative of royalty should exert the same influence, and our present Governor-General has undoubtedly both a personal and an hereditary right to be the patron of progress and culture in literature and science. Since the political consolidation of the Canadian Dominion, improved means of intercourse have been welding together our formerly scattered provinces, and have caused much more intimate relations, than formerly, to subsist between men of letters and science.

"We are sometimes told that the enterprise in which we are engaged is premature, that like some tender plant too early exposed to the frosts of our Canadian spring, it will be nipped, and perish. But we must remember that, in a country situated as this

is, nearly everything is in some sense premature. It is with us a time of breaking up of ground, and of sowing and planting, not a time of reaping or gathering fruit, and unless this generation of Canadians is content, like those that have preceded it, to sow what others must reap in its full maturity, there will be little hope for our country. In Canada at present, whether in science, in literature, in art, or in education, we look around in vain for anything that is fully ripe. We see only the rudiments and beginnings of things, but if these are healthy and growing, we should regard them with hope, and should cherish and nurture them as the germs of greater things in the future. Yet, there is a charm in this very immaturity, and it brings with it great opportunities. We have the freedom and freshness of a youthful nationality. We can trace out new paths which must be followed by our successors; we have a right to plant, wherever we please, the trees under shade of which they will sit. The independence which we thus enjoy, and the freedom to originate which we can claim, are in themselves privileges, but privileges that carry with them great responsibilities.

"Allow me to present to you a few thoughts, bearing on this aspect of our position, and in doing so, to confine myself chiefly to the side of science, since my friend Dr. Chauveau, who is to follow me, is so much better able to lay such before you from a literary point of view. Young though our country is, we are already the heirs of the labours of many eminent workers in science, who have passed away, or have been removed from this country. In geology, the names of Bigsby, Bayfield, Baddeley, Logan, Lyell, Billings, Hector, and Isbister will occur to all who have studied the geological structure of Canada, and there are younger men like McOuat and Hartley—too early snatched away—who have left behind them valuable records of their labours. In botany and zoology we can point to Michaux, Pursh, Hooker, Shepherd, Bourgeau, Douglas, Menzies, Richardson, Lord, and Brunet. These are but a few of the more eminent labourers in the natural history of this country, without mentioning the many living workers who still remain. Were it the object of this society merely to collect, and reproduce, and bring up to date, what these older men have done, it would have no small

task before it. But to this we have to add the voluminous reports of the Geological Survey, and the numerous papers and other publications of the men who are still with us. In natural science, we thus have a large mass of accumulated capital on which to base our future operations, along with an unlimited scope for further efforts and researches.

"The older men among us know how much has been done within the lifetime of the present generation. When, as a young man, I began to look around for means of scientific education, there was no regular course of natural science in any of our colleges, though chemistry and physics were already taught in some of them. There were no collections in geology or natural history, except the private cabinets of a few zealous workers. The Geological Survey of Canada had not then been thought of. There were no special schools of practical science, no scientific libraries, no scientific publications, and scarcely any printed information accessible. In these circumstances, when I proposed to devote myself to geological pursuits, I had to go abroad for training, not equal to that which can now be obtained in many

of our Canadian colleges. Nor, at that time, were there public employments in this country to which a young geologist or naturalist could aspire. It is true this was more than forty years ago, but in looking back, it would seem but as yesterday, were not these years marked by the work that has been done, the mass of material accumulated, and the scientific institutions established within this time. Those who began their scientific work under such circumstances, may be excused for taking somewhat hopeful views as to the future.

"Perhaps at present, the danger is, that we may be content to remain in the position we have reached, without attempting anything further; and, however inconsistent this may be, it is easy to combine the fear that any movement in advance may be rash or premature, with the self-satisfied belief that we have already advanced so far, that little remains to be attained. We must bear in mind, however, that we have still much to do to place ourselves on a level with many other countries. With the exception of the somewhat meagre grants to the Geological Survey and to the Meteorological Service, the Government of Canada gives nothing in aid of scientific research. What

is done for scientific education by local societies must, under our system, be done by the separate provinces, and is necessarily unequal and imperfect. Few large endowments have been given for scientific purposes. We have had no national societies or associations comparable with those of other countries. Yet, we are looking forward to a great future. Wealth and population are moving rapidly onward, and the question is, whether culture of the higher grade shall keep pace with the headlong rush of material progress. Various elements may enter into the answer to this question, but undoubtedly the formation of such a society as this, is one of these, and of the utmost importance; and even though at the present time the project may fail of success, or be only partially effective, (of which, however, I have no apprehension), it must be renewed till finally enabled to firmly establish itself.

"Another consideration bearing on this question is the vastness of the territory which we possess, and for the scientific development of which, we have assumed the responsibility. Canada comprises one-half of the great North American continent, reaching for three thousand miles from east to west, and extending from south to north from the latitudes of 45°

and 49° to the Polar Sea. In this area, we have representatives of all the geological formations—from the Laurentian and Huronian, to which Canada has the honour of giving names, to the Post-pliocene and modern. Of some of these formations we have more magnificent developments than has any other country. In zoology, our land area extends from the land of the musk-ox in the north to that of the rattlesnake in the south, and we have perhaps the greatest area possessed by any country for the study of fresh-water animals. Our marine zoology includes that of the North Atlantic, the North Pacific, and of the Arctic Ocean. In botany, we have the floras of the Atlantic and Pacific slopes, of the western plains, and of the Arctic zone. In physical, astronomical, and meteorological investigations we have the advantage of vast area, and of varied climate and conditions. These circumstances in themselves imply responsibilities in connection with the progress of science, not here only, but throughout the world.

"Much is no doubt being done to cultivate these vast fields of research, and I would not for a moment underrate the efforts being made, and the arduous labours, perils, and privations to which the pioneers in these fields are even

now subjected; but what is being done is relatively insignificant. Many letters from abroad reach me every year, asking for information, or reference, as to Canadian workers in specialties, which no one here is studying; and I know that most of our active naturalists are continually driven by such demands, to take up lines of investigation, in addition to those already more than sufficient to occupy their time and energy. Were it not for the aid indirectly given us, by the magnificent and costly surveys and commissions of the United States, which freely invade Canadian territory, whenever they find any profitable ground that we are not occupying, we would be still more helpless in these respects. Is there not, in these circumstances, reason for combination of effort, and for the best possible arrangements for the distribution of our small force over the vast area which it has to maintain?

"I have dwelt sufficiently long on topics which indicate, that the time has fully come for the institution of the Royal Society of Canada. Let us turn for a moment, to the consideration of the ends which it may seek to attain, and the means for their attainment.

"I would place here first, the establishment of a bond of union between the scat-

tered workers, now widely separated in different parts of the Dominion. Our men of science are so few, and our country so extensive, that it is difficult to find in any one place, or within reasonable distance of each other, half-a-dozen active workers in science. There is thus great lack of sympathy and stimulus, and of the discussion and interchange of ideas, which tend so much to correct, as well as to encourage. The lonely worker finds his energies flag, and is drawn away by the pressure of more popular pursuits. Even if this society can meet but once a year, something may be done to remedy the evils of isolation.

"Again, means are lacking for the adequate publication of results. True, we have the reports of the Geological Survey, and transactions are published by some of the local societies, but the resources at the disposal of these bodies are altogether inadequate, and for anything extensive or costly we have to seek means of publication abroad. This can be secured only under special circumstances; and while in this way, the published results of Canadian science become so widely scattered as to be accessible with difficulty, much that would be of scientific value fails altogether of adequate publication, especially in

the matter of illustration. Thus, the Canadian naturalist is often obliged to be content with the publication of his work in an inferior style, and poorly illustrated, so that it has an aspect of inferiority to work really no better, which in the United States, or in the mother country, has the benefit of sumptuous publication and illustration. On this account, he has often the added mortification of finding his work overlooked or neglected; and not infrequently, whilst he is looking in vain for means of publication, the credit of that which he has attained by long and diligent labour, is taken away from him by its previous issue elsewhere. In this way, also, it very often happens that collectors who have amassed important material, of great scientific value, are induced to place it in the hands of specialists in other countries, who have at their command means of publication not possessed by equally competent men here. The injury which Canadian science, and the reputation of Canada, sustain in this way is well known to many who are present, and who have been personal sufferers.

"Should this society have sufficient means placed at its disposal to publish transactions, —I shall not say equal to those of the Royal

Society of London, or the Smithsonian Institute at Washington, but to those of such bodies as the Philadelphia Academy, or the Boston Society of Natural History,—an incalculable stimulus would be given to science in Canada, by promoting research, by securing to this country the credit of the work done in it, by collecting the information now widely scattered, and by enabling scientific men abroad to learn what is being done here. It is not intended that such means of publication should be limited to the work or papers of members of the society. In this respect it will constitute a judicial body, to decide as to what may deserve publication. Its transactions should be open to good papers from any source, and should thus enable the younger and less known men of science to add to their own reputation and to that of the country, and so to prepare the way for their admission to membership of this society.

"Few expenditures of public money are more profitable to the State than those which promote scientific publication. The actual researches made imply much individual labour and expense, no part of which falls on the public funds, and by the comparatively small cost of publication, the country gets the benefit

of the results obtained, its mental and industrial progress is stimulated, and it acquires reputation abroad. This is now so well understood, that in most countries, public aid is given to research as well as to publication. Here, we may be content, in the first instance, with the latter alone, but if the society is at first sustained by the Government, it may be hoped that, as in older countries, private benefactions and bequests will flow into it, so that eventually, it may be able, not merely to afford means of publication, but to extend substantial aid to young and struggling men of science who are following out, under difficulties, important investigations.

"In return for aid given to this society, the Government may also have the benefit of its advice, as a body of experts, in any case of need. The most insignificant natural agencies sometimes attain to national importance. A locust, a midge, or a parasitic fungus, may suddenly reduce to naught the calculations of a finance-minister. The great natural resources of the land, and of the sea, are alike under the control of laws known to science. We are occasionally called on to take our part in the observation of astronomical or atmospheric phenomena of world-

wide interest. In such cases, it is the practice of all civilised governments to have recourse to scientific advice, and in a society like this, our Government can command a body of men free from the distracting influence of private and local interests, and able to warn against the schemes of charlatans and pretenders.

"Another object which we should have in view, is that of concentrating the benefits of the several local societies scattered through the Dominion. Some of these are of long standing and have done much original work. The Literary and Historical Society of Quebec is, I believe, the oldest of these bodies, and its transactions include, not merely literature and history, but much that is of great value in natural science, while it has been more successful than any of our other societies in the accumulation of a library. The Natural History Society of Montreal, of which I have had the honour to be a member for twenty-seven years, is now in its fifty-third year. It has published seventeen volumes of proceedings, including probably a larger mass of original information respecting the natural history of Canada, than is to be found in any other publication. It has accumulated a valuable

museum, and has done much to popularise science. It has twice induced the American Association for the Advancement of Science to hold its meeting in Canada, and was the first body to propose the establishment of a Geological Survey. The Canadian Institute of Toronto, occupying the field of literature as well as of science, although a younger, has been a more vigorous society, and its transactions are equally voluminous and valuable. The Natural History Society of St. John, New Brunswick, though it has not published so much, has carried out some very important researches in local geology, which are known and valued throughout the world. The Nova Scotian Institute of Natural Science is a flourishing body, and publishes valuable transactions. The Institût Canadien of Quebec, and the Ottawa Natural History Society, are also very useful institutions. The new Natural History Society of Manitoba has entered on a vigorous and hopeful career. There are also, in the Dominion, some societies of great value, cultivating more restricted fields than those above referred to, and of a character rather special than local. As examples of these, I may mention the Entomological Society of Canada, the His-

toric Society, and the Numismatic Society of Montreal.

"Did I suppose that this society would interfere with the prosperity of such local bodies, I should be slow to favour its establishment. I believe, however, that the contrary effect will be produced. They are sustained by the subscriptions and donations of local members, and of the provincial legislatures, while this society must depend on the Dominion Parliament, from which they draw no aid. They will find abundant scope for their more frequent meetings in the contributions of local labourers, while this will collect and compare these, and publish such portions as may be of wider interest. This society will also, it is hoped, furnish means of publication for memoirs too bulky and expensive to appear in local transactions. There should, however, be a closer association than this. It is probable that nearly all of the local societies are already represented among our members, by gentlemen who can inform us as to their work and wishes. We should therefore be prepared at once to offer terms of friendly union. For this purpose, it would be well to give to each of them an associate membership for its president, and for one or two of its officers,

nominated by itself and approved by our council. Such representatives would be required to report to us, for our transactions, the authors and subjects of all their original papers, and would be empowered to transmit to us for publication such papers as might seem deserving of this, and make suggestions as to any subjects of research which might be developed by local investigation. The details of such association may, I think, readily be arranged on terms mutually advantageous, and conducive to the attainment of the objects we all have in view.

"It would be a mistake to suppose that this society should include all our literary and scientific men, or even all those of some local standing. It must consist of selected and representative men, who have themselves done original work, of at least Canadian celebrity. Beyond this it would have no resting-place short of that of a great popular assemblage, whose members would be characterised rather by mere receptivity, than by productiveness. In this sense it must be exclusive in its membership; but inclusive, in that it offers its benefits to all. It is somewhat surprising at first sight, and indicative of the crude state of public opinion on such matters, that we some-

times find it stated, that a society, so small in its membership, will prove too select and exclusive for such a country as this; or, find the suggestion thrown out, that the society should become a professional one by including the more eminent members of the learned professions. If we compare ourselves with other countries, I rather think the wonder is that so many names should have been proposed for membership of this society. Not to mention the strict limitations in this respect, placed on such societies in the mother country, and on the Continent of Europe, we have a more recent example in the National Academy of Sciences in the United States. That country is probably as democratic in its social and public institutions as Canada, and its scientific workers are certainly in the proportion of forty to one of ours. Yet the original members of the Academy were limited to fifty, and though subsequently the maximum was raised to 100, this number has not as yet been attained. Yet public opinion in the United States would not have tolerated a much wider selection, which would have descended to a lower grade of eminence, and so would have lowered the scientific prestige of the country.

"Science and literature are at once, among

the most democratic, and the most select, of the institutions of society. They throw themselves freely into the struggle of the world, recognise its social grades, submit to the criticism of all, and stand or fall by the vote of the majority, but they absolutely refuse to recognise, as entitled to places of importance, any but those who have earned their titles for themselves. Thus it happens, that the great scientific and literary societies must consist of few members, even in the oldest and most populous countries, while, on the other hand, their benefits are for all, and they diffuse knowledge through the medium of larger and more popular bodies, whose membership implies capacity for receiving information, though not for doing original work. The younger men of science and literature must be content to earn their admission into the higher ranks, but have, in the fact that such higher rank is accessible to them, an encouragement to persevere, and in the meantime may have all their worthy productions treated in precisely the same manner as are those of their seniors.

"Finally, we, who have been honoured with the invitation to be the original members of this society, have a great responsibility and a high duty laid upon us. We owe it to the

large and liberal scheme, conceived by His Excellency the Governor-General, to carry out this plan in the most perfect manner possible, not with regard to personal, party or class views, but to the great interests of Canada, and its reputation before the world. We should approve ourselves first, unselfish and zealous literary and scientific men, and next, Canadians, in that widest sense of the word, in which we shall desire, at any personal sacrifice, to promote the best interests of our country, and this, in connection with a pure and elevated literature and a true, profound and practical science.

"We aspire to a great name. The title of 'Royal Society,' which, with the consent of Her Gracious Majesty the Queen, we hope to assume, is one dignified in the mother country by a long line of distinguished men, who have been fellows of *its* Royal Society. The name may provoke comparisons not favourable to us, and, though we may hope to shelter ourselves from criticism by pleading the relatively new and crude condition of science and literature in this country, we must endeavour, with God's blessing on earnest and united effort, to produce, by our cultivation of the almost boundless resources of the country

which has fallen to us as our inheritance, works which shall entitle us, without fear of criticism, to take to ourselves worthily, and justly, this proud name of 'The Royal Society of Canada.'"

The Royal Society of Canada has continued its work since 1882, and has published annual volumes of its transactions, which, both in matter and form, reflect credit on the Dominion, and have done much to give it a place among those nations which cultivate science and literature for their own intrinsic value. The presidency is like that of the British Association, annual, but I have been able to attend nearly all the meetings as a member of council, and as a private member, and have also occupied the position of president of the section of Natural Science.