

ENGINEERS AND THE MASSEY REPORT

By ROBERT LEGGET*

“THE tidal wave of technology can be more damaging to us than to countries with older cultural traditions, possessing firmer bulwarks against these contemporary perils.”

This is an interesting suggestion for Canadians, even if couched in somewhat unusual language. The linking of modern technological advance—for the statement was published only in 1951—with the idea of peril savours of the purple patch so beloved of some contemporary journalists. No newspaper passage this, however, but a direct quotation from a document perfectly prefaced by a saying of St. Augustine. The document is that which considers the things which are “shared and cherished” by Canadians, the Report of the Royal Commission of National Development in the Arts, Letters and Sciences. Presumably the achievements of the engineer were regarded as so far from the vision of the ancient saint that the Royal Commissioners allowed themselves, possibly in an impulsive moment, to categorize them as “perils” in one of their very few references, direct or indirect, to the physical basis of life in Canada today. It may therefore be of some interest to take a look at this already famous Report through the eyes of an engineer.

It is perhaps unfortunate that the document has come to be known as the “Massey Report”. When the Government of Canada appointed the Royal Commission, it could not then have known that its Chairman would so soon become His Excellency the Governor General of the Dominion. Earlier representatives of the Crown in Canada have been known by the products of their pens but never before, perhaps, has the name of a Governor General been so closely associated with a state document of such importance to the nation. That the Report should, for this reason, be placed beyond the reach of comment and discussion would surely be far from the wish of the Chairman of the Commission. Let the crime of *lèse majesté* be risked, then, as the pages of the stout volume with its distinctive cover are turned again and once more studied appreciatively.

Engineers must have shared in full measure with their fellow citizens throughout Canada the enjoyment, the concern and the mental stimulation given by a close reading of this great Report. They can echo confidently the considered opinion of *The Times* of London which has said editorially that “No Royal Commission has been appointed with more striking terms of

*A talk given to a joint meeting of the Kingston branches of the Engineering and Chemical Institutes of Canada.

reference, and none has produced a bolder report."* But, being engineers, they may have differed from their fellows in following their usual practice and studying carefully the actual wording of the terms of reference of the Royal Commission. Thus they have found, in the opening words of the Commission of Appointment, this interesting suggestion:—"Whereas it is desirable that the Canadian people should know as much as possible about their country, its history and traditions and about their national life and common achievements. . . ." Then follow the specific instructions.

In face of this challenging guide, it is somewhat surprising to find so few references to the work of those who have provided the physical development of this country (amongst whom engineers are to be numbered) which alone provides the basis for all the other aspects of Canadian life which are discussed so fully in the four hundred pages of the Report. No briefs appear to have been presented by either engineers or associations of engineers. Only two special studies in fields in any way related to engineers were prepared for the Commissioners.

It is true that one of the Commissioners is an engineer, Dr. Arthur Surveyer being one of the revered leaders of his profession. But it will not have escaped general notice that Dr. Surveyer was the only Commissioner in any way associated with, and so representing, the economic and business life of the country, not to mention the professions. It is as a valued adviser of business that Dr. Surveyer is now, perhaps, best known so that his unique dissent (on broadcasting and television) is not too surprising. His subtle reference to advertising, in his dissenting opinion, provides a key to his general views and suggests that he was contributing primarily as an industrialist and not as an engineer.

The other Commissioners are equally distinguished in academic circles. Their well known work on their respective fields makes it clear why the "plight" of the humanities (the word is that of the Report) is the dominant theme song of the Report, or should one say its Greek chorus? The Commissioners themselves say in their conclusion that they "have been forced to turn again and again to the dangerous neglect of the humanities and social sciences." Despite this emphasis, it will be found that this subject is not one of those upon which the Royal Commission was specifically instructed to report. Why, therefore, it should have received such extensive attention,

*From an editorial in the issue of *The Times* for 15th September, 1951.

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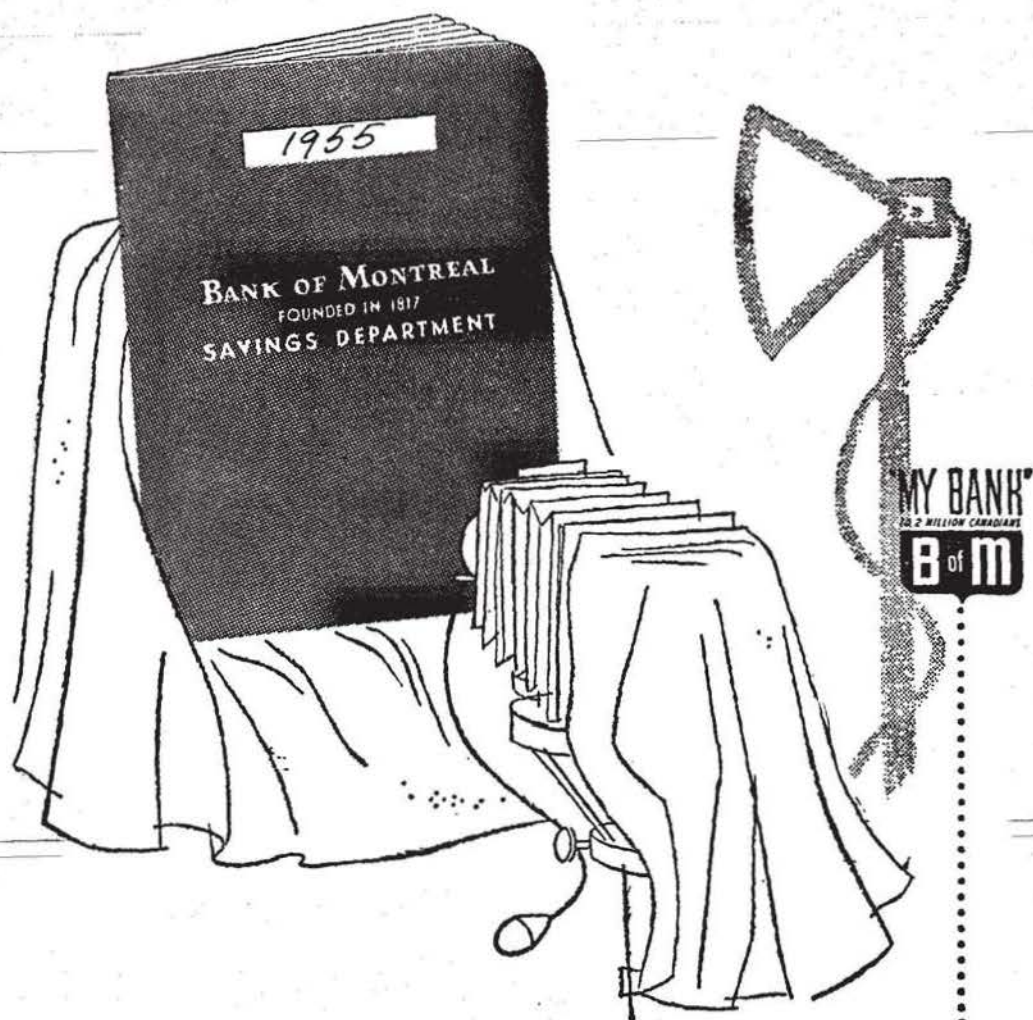
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to the complete neglect of other major national topics, is at first difficult to understand.

It is no new thing to see pleas for the artificial strengthening of the humanities. So old is the topic, indeed, especially in University circles, that one would have expected the Commissioners to have advanced some new arguments in support of their appeal. What one does find, however, is such a thing as this question—"Why can't my staff draft a lucid memorandum or an intelligible letter" seriously advanced as an argument in support of the humanities. In the Report the question is put into the mouth of a "practical man", presumably an engineer. An engineer of today might have to ask such a question but only because of the widespread failure of the schools to give this basic training. He would surely be one of the last persons to use it in the way in which it is used by the Commissioners.

The Commissioners repeat, in one of their very few references to engineers, the suggestion that too many applied scientists (at the Universities) "are only glorified technicians." (Perhaps a reference should be given for this deprecatory statement; it is to be found near the top of page 138). Some years ago, the writer was privileged to participate in the introduction into the undergraduate curriculum of the Faculty of Applied Science of the University of Toronto of an integrated group of non-engineering subjects for all students in all four years, finishing with a course in the Philosophy of Science. It was this successful experiment which led the then Dean, Dr. C. R. Young, to state that the undergraduates of Toronto with the best all round University education were the engineers. They at least knew something about important subjects other than their own, whereas the honours students in the liberal arts courses might be specialists in detailed knowledge of one of the humanities but had learned little else. Exactly the same can be said of other Canadian Universities, Queen's and the University of Manitoba being further good examples. This is exactly the reverse of what the Commissioners suggest and intensifies one's regret that they did not consult some of the "glorified technicians" of whom they are so critical.

They might have heard much of interest if they had done so. They would certainly have encountered reflections of the thinking of that great philosopher-scientist, Alfred North Whitehead. Quite obviously, the Commissioners do not agree with his suggestion (advanced in "The Aims of Education") that "The antithesis between a technical and a liberal education is fal-



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lacious. There can be no adequate technical education which is not liberal and no liberal education which is not technical." It is perhaps to be regretted that Saint Benedict was not considered as well as Saint Augustine in providing guidance for the Commissioners.

The bias of the great Report, and no other word can more accurately describe its approach, is shown even by the relevance of its title—the Report of the Royal Commission on National Development in the Arts, Letters and Sciences. Of the four hundred pages, no more than twenty-five are devoted to a discussion of the place of the sciences in Canada today, and of the hundred and thirty pages of Part Two (the conclusions) precisely half a page is enough to contain the recommendations on science.

Stated thus bluntly, these facts and some of the foregoing comments sound an unduly critical note. The Report is, beyond doubt, a great document. It has been so widely acclaimed that it would be invidious for one such as the writer to attempt to enlarge upon this public tribute to the splendid contribution which the Report can make to the enrichment of Canada's national life. May it be stressed, however, that behind all the foregoing comment, is a deep appreciation of the masterly way in which the Commissioners approached their immense task and of the certain value of many of their recommendations. The references which have been cited have been deliberately selected to show an aspect of the report which does not appear to have attracted attention and yet one which should be of real concern to all engineers.

Those who are privileged to know any of the members of the Royal Commission will agree that if their conclusions do exhibit any bias, such as has been suggested, there must have been good reason for this, so broad are the interests of these well known citizens of our land and so thorough their studies. Why then, it may well be asked, does the Report contain so many plaintive pleas for the stimulation and strengthening of the humanities in Canada; why the almost incidental references to the physical aspects of Canadian life and development?

One can not escape the suspicion that engineers, and applied scientists, have perhaps done their work for Canada almost too well—too well, that is, when compared with the other directions in which this country should have developed. The work of Canadian engineers in opening up the physical resources of this country is so well known, within our own borders and far beyond, that there was little need for the Commissioners to de-

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vote space in their survey to its record. The National Research Council, as a symbol of national scientific achievement, is correspondingly now so well established and so well recognized, both nationally and internationally, that there was little point in giving to it much attention in the Report, except to indicate a direction in which its status and experience might be made even more effective than at present.

The sciences in Canada did not appear to the Commissioners to be in need of any special stimulation. Their prestige is perhaps best indicated by the way in which the name "science" is so widely used today to designate what was described so long as "science falsely so called." There are disciplines mentioned even in the Report which today venture to call themselves sciences and yet which follow practices and have objectives which have very little in common with the scientific method. At the other extreme, there are the popular uses of the name that so often call it into such disfavour—uses which, in a recent stimulating paper, were properly and delightfully designated as descriptions of "scientific slums." These are a part of what we may call the scientific band-wagon, the existence and the size of which should be at once a tribute and a challenge.

May it not be that the members of the Royal Commission, seeing all this far more clearly than is here expressed saw also the challenge which Canadians must meet if their cultural development is to match the physical development of their country? If this is so, then it is beholden on all engineers to give thought to the implications of the matter. They must accept some responsibility if it is true that our corporate sense of values is out of pace with our material development. As a profession, engineers must be prepared to justify the privilege of their position as a favoured group in the community.

We are in danger, I think, of forgetting the responsibility which must ever be the companion of privilege. It has been more than encouraging to see the steady advance of the engineering profession in Canada, in size and in influence. I am, however, one of those who is disturbed by some of the more extreme recent evidences of "professional nationalism" (if one may coin a phrase by combining two words which should be and usually are mutually contradictory). Instead of loudly interfering with efforts to secure the best engineering advice in fields unusual for this country, we could usefully apply the same amount of effort towards making sure that, as a profession, we are contributing as we should be to social problems for which we do carry some responsibility.



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Let me cite a very practical example, and one touched upon in the Massey Report. There is a section which deals with architecture and town planning. It is true that it is but five and one half pages long but it is about the closest that the Report comes to engineering work. The inference, however, is that town planning is solely the responsibility of the architect. The sad state of its development is deplored. For this the engineer must accept some responsibility (since surveyors did the early town planning and engineering features determine most of the planning of today) but this was not evidenced to the Commission in any way at all, the only submissions on this subject being made by architects, corporately and individually. Is there any branch of engineering work which is of greater social import and yet which has been so neglected? I believe that the course now given in this subject at Queen's University, for example, is the first ever given to engineering undergraduates at a Canadian University.

We cannot, therefore, complain if the Report gives the impression—as indeed it does—that the architectural profession is an integral part of the cultural life of this country whereas (if only by inference) engineers and applied scientists are generally a group of rude fellows, illiterate technicians. How good, would it have been to read, as we should have been able to do a plea by the Commission for a strengthening of the ties which link these two professions to the enrichment of both and the liberalising of these two groups which, together and jointly, are responsible for so much of the physical background for the good life with which the Royal Commission was so genuinely concerned.

If my main supposition is correct, it is perhaps not surprising that the Commissioners have allowed the pendulum to swing somewhat to the other extreme in their considerations of the humanities in Canada, and all that they imply with regard to our national life. It is, however, the *isolating* of the humanities, throughout the Report, almost as though they were an end in themselves, which must strike the engineer as its most puzzling feature. For I am reasonably sure that all engineers who have given thought to these matters would regard the humanities as a part of the fabric of life itself, their study a part of the approach to living for all interested citizens, although to varying degree. For this reason it is disturbing for an engineer-reader of the Report to see so much stress placed upon what must be called the artificial stimulation of the humanities, and to read such a piece of special pleading as a complaint about the "low estate of

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the professor of the humanities, in economic status and prestige," a statement surely as questionable in fact as it is unfortunate in inference.

Canada is still a young country; assuredly she needs inspired teachers of the humanities. She needs also good teachers for the professional fields and social disciplines which serve the daily needs of her citizens—medicine, the law, economics and the like. No more and no less does she need inspired teachers in the professional schools wherein are trained those who will plan the future development of the land that is Canada, her architects and her engineers. And just as this professional training should be infused with all that an appreciation of the legacy of the past can give to good teaching, so also should work in the humanities be at least in touch with the life of the Canada of today and not conducted, as one has sometimes seen, in a well insulated ivory tower, occupied in wintertime only, with a notice on the door "Scientists and Technicians keep out."

Here we touch upon some of the fundamentals of education. We can now usefully look back to the quotation which served as an introduction, the reference to the "tidal wave of technology" and its damaging effects upon culture. I submit, with great respect, that it is almost misleading to blame technological advance, which has brought such untold benefits in its train, for admitted cultural deficiencies. Assuredly there are "perils" associated with the technological advance; there always have been and there probably always will be. But are not the real perils of today, the perils arising from undisciplined minds and of loose and distorted thinking? Those responsible for modern technology, in their enthusiasm for their work, may have failed to take their proper place in community affairs but surely the sowing of the seeds of a true cultural tradition, and the cultivation of the ground in which they are to grow, are amongst the basic responsibilities of our primary and secondary education. I find it not at all surprising, therefore, that one member of the Royal Commission has recently produced a book with the provocative title "*So Little for the Mind*", a sub-title explaining that it is an indictment of Canadian education.

This is a real polemic, a provocative stimulus to constructive thinking about education in Canada, and so about the matters considered so carefully by the Massey Commission. Putting to one side all the opinions of the author, the extracts which her book contains from official educational publications of the provincial offices of education alone go further in pointing to the explanation of many of the weaknesses revealed in the



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Report which we are discussing than any possible aspersions upon technological progress. When one reads that a Canadian educational official has stated that his department has "no objection to standards, so long as they are not fixed", one finds a key to some of the deficiencies in Canadian life so clearly stated in the Massey Report. Many similar quotations could be given. They go far to explain those strange pleas to the Commission for special favours from plaintive painters and worried writers which to many sound such an artificial note in the great Report.

Dr. Neatby's book was published as recently as 1953; the Massey Report was published in 1951. Both volumes deal with matters which change only slowly with the years so that the unusual course of commenting upon a book three years after its publication really needs no apology. Both volumes are commended most strongly; they are books to read and to reread as the implications of their contents are studied and discussed. The Massey Report by implication and Dr. Neatby's book by direct statement focus attention upon the admittedly pragmatic character of much in Canadian education today. As has been suggested, this is something which engineers, individually and as a professional group, need seriously to consider. When this matter is faced, then the question which the Commissioners raise so disturbingly—that too many engineers are only "glorified technicians"—comes rather pointedly to mind. Even though the same comment could surely be applied also to other professional groups, one is forced to ask as one applies it to engineers if those who suggest it could possibly be right?

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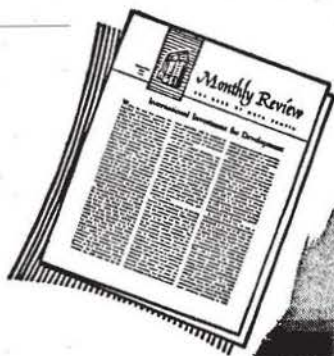
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THE MICMAC INDIANS OF EASTERN CANADA. By WILSON D. and RUTH S. WALLIS. University of Minnesota Press. (Thomas Allen Limited, Toronto).

For too long the Micmac has been the forgotten man of the North American Indian tribes. Historians have dealt with him briefly and patchily. Except for purely local investigations by the Canadians H. I. Smith and W. J. Wintemberg in 1913-1915 the archaeologists have passed him by. The ethnologists have done little better. Early French visitors like Champlain, Lescarbot and Denys left fairly good accounts of the Micmac in their time, so did missionaries like the Catholic fathers LeClere and Maillard. After these came a long gap until Silas T. Rand began his work amongst the Micmacs in 1846. Rand's work covered 40 years, in which he mingled closely with the people, devoting much of his attention to the intelligent old men and women who could remember clearly the language and legends of their forefathers. He published a good deal of what he learned, notably his English-Micmac dictionary, and the collection of folk tales which placed the remarkable figure of Gluskap before the world. Since Rand's time we have had nothing but a few random and mostly amateur studies.

Here however we have a careful and detailed study, well illustrated, by a pair of trained ethnologists who first visited the Micmacs in 1911-1912, and returned nearly forty years later to compare their notes. It is typical of our Canadian indifference and carelessness that such a work should have been left to a pair of earnest Americans financed by an institution as far away as Minnesota. The work has been well done, a most important contribution to Canadian knowledge, not to mention the wider value of the book. The authors have reviewed carefully the historical references to the Micmacs in the light of their own contemporary research. It will come as a surprise to many Canadians to know that the almost forgotten Micmacs still exist in considerable numbers, and that at one time they held as their hunting grounds not merely Nova Scotia and Prince Edward Island but the whole Gulf shore of New Brunswick and the whole of Gaspé. In their hey-day their power extended all the way from Cape Sable to Quebec, and from Maine to Newfoundland. They were bold seafarers as well as landfarers. Originally simple worshippers of the sun and moon, they later evolved a curious mythology centred about the person of the man-god Gluskap. Essentially a wandering race of hunters and fishermen their arts were few and primitive.

The authors spent most of their investigations amongst the Micmacs of the Gulf shore of New Brunswick, notably about the village of Burnt Church, with some excursions into central and eastern Nova Scotia. Western Nova Scotia they missed, which seems a pity, for it was the true home of the Gluskap legends, moreover the seat of the once large and powerful tribe first encountered by DeMonts and Champlain, remnants of which still exist. It is difficult to understand why the authors trace the name Micmac to the place Miscou on the New Brunswick shore. Most savage peoples when questioned by white men referred to themselves as "the people of the land." Surely the



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