

tee from the evidence are, in our opinion, beyond dispute. It has been evident to those engaged in technology (as distinct from pure science) that Canada does not have a policy for science and technology, but only a partial and inadequate plan which is largely restricted to pure science. We will not repeat the arguments in support of this conclusion, as they are concisely presented and well documented in the committee's report.

I could, as I said before, give you a long list of similar quotations but they would merely confirm that on the whole the committee's critical analysis has detected the major weaknesses of the present Canadian approach to problems of science, technology and innovation and has clearly demonstrated the need in the future for an overall science policy in Canada.

Since we have been accused of leaving the impression that our country was the only one which had such a need, I shall also quote a letter received recently from the general manager of research and planning of an important Australian company. In this letter he says:

I am not in the habit of writing to senators, but I agree so entirely with your philosophy of applied research that I feel obliged to write to you.

I control a research organization with approximately six hundred people in this company and for several years have been advocating the theory that applied research can exist without a large involvement in pure research. Resulting from this philosophy we now have a research organization which is innovating strongly and interacting very effectively with production. Our research people, who are both engineers and scientists, draw widely from worldwide pure research in a most effective way. Five years ago when I took this position the majority were interested in pure research. Now they are equally enthusiastic to contribute to this company's activities through applied research, and in general they are happier people from feeling that they are making a real contribution.

I was also interested in your opinions because I am actively involved with the Australian Commonwealth Scientific and Industrial Research Organization. CSIRO tends to be orientated in much the same way as the NRC, and a few of us have been attempting to influence CSIRO towards a new outlook on applied research much as appears to be described in your report. There is no doubt that your report will have a great influence in this matter.

Honourable senators, at this stage I could merely report progress and sit down, for the simple reason that the committee ought to be satisfied to have received such general support for its work and should proceed to complete it along the lines already indicated in Volume I and so widely accepted by interested groups and individuals in Canada. Such a procedure, however, would not be satisfactory to me, because it would ignore the 10 per cent, those who have been critical of the report. It would be contemptuous to ignore these criticisms, which came almost entirely from the pure scientists in universities

and the Government sectors, and illogical on my part to do so, since one of our major objectives in launching this operation was precisely to initiate and sustain a debate on this vital and complex issue.

I must say that the tone and the substance of the criticisms have surprised me, especially since they came mainly from pure scientists who are trained in their professional search for truth to be more rational and objective than they have been on this occasion. For instance, we have been accused of being unfair to Dr. Steacie and to have attempted to destroy his reputation. This of course is nonsense!

We have said in our report that he was an "internationally known and greatly respected scientist." I had the great privilege of meeting Dr. Steacie personally and I know that he was also a great humanist. He certainly made an essential contribution in helping to produce in Canada a growing number of pure scientists. These aspects of Dr. Steacie's qualities and services are clearly indicated in our report, and I am sure that Canadians will always be grateful to him for what he did in this respect. However, and unfortunately, no human being is perfect, and our committee, whose main responsibility is to look at the formulation and the organization of science policy, had to examine Dr. Steacie's role as a science administrator and co-ordinator, since he was not only a scientist but also the President of NRC and in that capacity in those years he was directly responsible for the administration of a complex of testing and industrial laboratories. He was *ex-officio* the Government's main advisor on the whole spectrum of science policy, and he was Chairman of the Advisory Panel for Scientific Policy charged with the responsibility for co-ordinating all government scientific activities. But Dr. Steacie did not believe in a specialized training for engineers, he put a low priority on industrial research and development activities and he was against administration and co-ordination. He admitted it himself and we merely quoted his own statements to that effect. According to our information, the advisory panel on co-ordination very seldom met while he was its chairman. As science administrator, advisor and co-ordinator, Dr. Steacie kept the attitudes and the priorities that he had developed as a pure scientist, and what we did as a committee was to conclude that this was the wrong approach to follow for an overall science policy which cannot be limited to the support of fundamental research but which should also respond effectively to economic and social objectives.

I believe—and this is confirmed by many of his former associates—that Dr. Steacie was realistic enough to agree with that conclusion, if he were still living today. Therefore I believe that we have treated Dr. Steacie fairly as the great scientist he was but also as a man who detested administrative directives and co-ordination mechanisms and who feared that the Canadian science effort could be distorted if it became too much involved in practical missions.

A few scientists expressed strong opposition to our report and, surprisingly enough, their reaction was much more emotional than scientific. According to press reports Dr. McTaggart-Cowan, a well-known public servant,