

may appear to over-emphasize the criticisms. The committee wish to underline again that its mandate is precisely to detect the weaknesses of the Canadian situation and try to correct them.

I contend that the criticisms and suggestions that we quoted in our report were a fair and balanced sample of the views which were presented to us.

One criticism of the report surprised me so much that I almost forgot to mention it. It came from Dr. Goldak, associate professor of engineering at Carleton University, who wrote an article in *Science Forum* entitled: "The major weaknesses: failure to emphasize technology's importance." He claimed that unfortunately we did not recognize that "the fundamental failure of Canadian science policy has been our inability to transmute knowledge into marketable products and processes." When I read this comment I came close to agreeing with Dr. McTaggart-Cowan when he said that our report was "a literary disaster".

Honourable senators, I am sorry that in this long speech I have not been able to refer to all our critics. Perhaps there will be other occasions to analyze their comments. Before I resume my seat, at this late hour, I still have some additional remarks to make.

At the end of his article in *Science Forum*, having described us as "scientifically illiterate politicians", Dr. Gunning says:

Let us hope that when our government moves toward major reforms in our science policy structure, one of its first actions will be to call together the best scientific, technical and political brains in the country for consultation. And when I use the term "scientist," I mean practising scientists at the forefront of their field.

My first question to Dr. Gunning is: where were these practising scientists when our committee, through its hearings, sought to consult them? Were there some among the representatives of the 40 universities who appeared before us? If so, what were their specific recommendations regarding major reforms in our science policy structure? If they were not there, either they were not very interested in consultation with parliamentarians or they did not have much to contribute in terms of reforms. They still have an excellent opportunity, however, during the present public debate, to put forward concrete and positive proposals to improve present conditions. If Dr. Gunning's article and others that I have reviewed here were to be interpreted as the positive contribution that "practising scientists" can make to reform, I doubt if it would be worthwhile for the Government to consult with them.

Apart from the vindictiveness that Dr. Gunning shows in his article, the only positive statement he makes is that "basic science is the foundation of any meaningful national science effort." I agree with this proposition, but I do not find it very original since it has been stated repeatedly in our country since 1916. Meanwhile, as we contend in our report, we have forgotten in Canada to erect the building and, as Dr. Gunning says, "A founda-

tion is not a building". But his article shows that he does not have too many ideas on how we should erect the building, after we have worked for 50 years to build the foundation.

As a matter of fact, the whole tenure of Volume I can be described as a plea to erect the building without destroying the foundation. Those few "practising scientists" who have exhibited violent and emotional reactions to our report have contributed little to this vital task. If that reaction were typical—and fortunately it is not—then I would share Professor Donald Scott's pessimism when he says on behalf of the Canadian Society for Chemical Engineering:

There is a real and very probable danger that the present furor about science policy may become just the current contribution of this particular decade to the preservation of the status quo.

But Professor Scott and his association do not need to worry. As I said at the outset, more than 90 per cent of those who have expressed their views about the report fully support our message. And that message in its essence is very simple indeed. We must now proceed to erect the building so that our national science effort will be in a better position to serve the public interest and to solve our mounting economic and social problems. To achieve this we need in Canada not only a series of specific science policies but also a coherent overall science policy with a proper central machinery to define its targets and strategies. This message is now accepted by the vast majority of the scientific and technological community in Canada, even by many pure scientists. For instance, a highly representative group of biologists have stated:

We agree that there is a need for greater support of good research and innovation and accept that a rational overall science policy could contribute to achieving selected national goals.

Again I repeat that this is the essence of the message that Volume I was designed to convey.

Finally, I want to say that I am in complete agreement with the *Science Forum's* editorial written by Dr. Bachynski, a well-known physicist. I hope that honourable senators will allow me in these closing remarks to quote extensively from his article because I think that it is quite important especially for the immediate future. Dr. Bachynski said:

There is considerable validity to much of the criticism of Canadian science and technology contained in the first volume of the report of the Senate Special Committee on Science Policy. . . There is little to be gained and much effort to be wasted on bickering and defensive rationalization of past decisions. We should view Volume I of the Lamontagne report as the last of the various 'hindsight' studies. Armed now with the experiences resulting from the 'old' wisdom and the ideas of the 'new' wisdom, we should realize that the time is overdue for the implementation of national policies and programs that will enable science and technology better to serve the economic, cultural and social needs of