

made intelligible visibly or tangibly rather than mathematically. These differences, Duhem argued, had parallels in other fields of thought: he cited literature, law, and the philosophy of science.

In Canada, where the scientific community comes from backgrounds both culturally and educationally diverse, its members must necessarily look through the filter of their past experience. There are bound to be considerable differences in approach and methodology.

Observers of creative scientists also find, not surprisingly, that like other people they can be jealous and ambitious. This point is well illustrated in James D. Watson's *The Double Helix* and by Robert K. Merton's studies of the behaviour of scientists. Peer groups have often been wrong. For example, a committee of peers considered Watson was not qualified to take advantage of the opportunities afforded by Cambridge University but he ignored their judgment and went on to win his Nobel prize.

All these difficulties mean that it is not easy to appraise the quality of basic research objectively. But there is no other alternative when the public funds available are insufficient to satisfy the requests of all applicants. Even in the best of possible worlds a granting system cannot be perfect. There is always room for improvement—and we made specific recommendations to effect it.

We are convinced the proposed Canadian Research Board and the three foundations as we conceive them would substantially improve the granting system. We also proposed that quality standards be based more on researchers' past performance than on their new applications for grants. This would make evaluation more straightforward and impartial. In our view it is easier to appraise results than promises coloured by "grantsmanship." We have suggested improvements to the peer system to prevent the "old boy network." These recommendations will not remove all the difficulties inherent in a granting system but they will help to increase the quality of basic research without leading to "overcontrol of curiosity-oriented science."

In another recommendation, the Committee provided for special assistance to scientists who showed potential but who had not had the time to achieve the standard of international quality. We refer here to our proposal that the foundations "continue or establish programs of post-doctoral fellowships awarded for a maximum period of five years."³⁶

This suggestion was restricted to basic research carried out by young scientists in universities or similar institutions and was designed to compensate scholars for loss of salary resulting from the reduction of their teaching load. Most briefs received from professional and industrial associations considered the proposal too restricted. The APEO's reaction was typical: