

the solution of a problem which has already been solved by some other worker, or which, with proper library facilities, could be solved in a few days. It is also proposed to maintain the most friendly relationship with the Departments of Agriculture, Education, and Mines, so that the work of the Institute and the Government Departments should be complementary of each other, having for their ultimate objects the welfare and advancement of the Dominion and of the Empire. The late Mr. Cawthron was very much interested in the establishment of a solar observatory in Nelson, whose climate is particularly suited for this purpose. Dr. Hale, of Pasadena, has promised to prepare a plan of suitable instruments, similar to that which he is preparing for Italy, and which would be inexpensive and yet enable observations to be made which could be worked out in America and be of the greatest value to science. The trustees are disposed to favourably consider the matter, as the land was purchased for the observatory before the late Mr. Cawthron's death. The Cawthron Institute will, it is anticipated, in time carry out similar work to that undertaken by the Mellon Institute of Industrial Research in the United States. About 1908 Dr. Duncan, of the United States, while attending the sixth International Congress of Applied Chemistry at Rome, conceived the idea of a research laboratory which would be open to all classes of industrial problems, and by which the industries concerned would obtain the best of chemical talent and equipment at a minimum of cost. The plan he evolved was to permit industrial concerns to establish fellowships in the research institute. The donor of the fellowship would give a sum of money sufficient to pay the salary of a Research Fellow or a group of research men for a term of years, who would devote all their time to the problem presented by the donor of the fellowship. All the discoveries made would become the property of the donor, and would be kept secret for a term of three years. Then the matter would be made public, thereby enriching science and enabling others to make use of the knowledge gained. The plan was first put into operation at the University of Kansas, and met with immediate success. Then Dr. Duncan was called to the University of Pittsburg to establish a similar research system. This system is now in operation at the Mellon Institute of Industrial Research, under the Directorship of Dr. Bacon, who succeeded Dr. Duncan upon his death in 1915. It is a benevolent institution; the donors only pay the salaries of the Research Fellows. All other expenses are borne by the Institute. In 1916 there were thirty-six industrial fellowships, and the expenses of the Institute were 72,000 dollars. Each donor received, therefore, an average of 2,000 dollars in the form of housing, equipment, or expert direction of his Research Fellow. There were in 1917 forty-two industrial fellowships, and the work they are doing ranges from the coking of coal to the baking of bread, and from the washing of clothes to the filling of teeth. To show how its work is appreciated, the Canadian Government endowed a fellowship to solve the problem of separating asphalt from very fine sand, so as to make available for commercial use certain large deposits in the Dominion. The problem has been solved in the laboratory, and it is now undergoing a test on a commercial scale. Outside of the Institute are a number of small buildings or shacks, which represent the commercial tests of the laboratory experiments. One Research Fellow is creditably reported to have saved a large United States bakery as much as £200,000 a year. Recently a professorship of pure chemistry was established there. In July, 1914, a large manufacturing firm of dental supplies wanted a dental cement. They paid for a Research Fellow. It took six months to find out what others had done and get the preliminary work done. The year went through without anything being accomplished. Finally, in February, 1916, it was accomplished. But they said, "We must now test it in actual use," which meant waiting another year before the Research Fellow knew if his work was finally successful. The company wanted it well tested before they would send it out and stake their reputation on it. The trustees of the Cawthron Institute have asked the Government to give them a subsidy or annuity payment of £2,000 a year, which would be equal to 5 per cent. on their £40,000. That application is before Cabinet at the present time, and I believe will be considered after the end of the financial year. I hope when it comes before the House that members will support it, because we think the trust is entitled to the amount, seeing that the whole of the money will be spent for the advancement of our primary industries and for the secondary industries of the Dominion. When the Cawthron Institute is in working-order it will be of the greatest national importance.

*To Mr. Hornsby:* As far as I understand, there is no conflict between the Cawthron Institute and the proposal made in respect to the general Research Institute. As far as I understand it, the Board of Science and Industries which it is proposed to establish would subsidize work done by such bodies as the Cawthron Institute, or research work done in Government laboratories, or done in University colleges, or by private people. They would subsidize research work where they thought it desirable. I have no doubt the Cawthron Institute would work in with the general scheme. I do not think there would be any overlapping. If the Board of Science and Industries is established I do not think it will interfere with the Cawthron Institute.

*To Mr. Sidey:* I do not know that the trustees of the Cawthron Institute have considered the question of co-ordinating the work of the Institute with the work of the proposed Board of Science and Industries. The minor scholarships are open to every part of New Zealand, but if there were a tie between two scholars in marks preference would be given to a Nelson scholar. The holders of these scholarships can attend any university in New Zealand. The wording of the will was a little vague, and when the trustees appointed the Advisory Board they got the opinion of the Board with regard to these points; and the Board's opinion was that they thought the trustees would be carrying out the wishes of Mr. Cawthron and would be acting in the best interests of the people generally by adopting the scheme which has been formulated.

*To Mr. Hudson:* In connection with the administration of the funds, Nelson would get the preference if any preference existed regarding local industries. Local industries would be first considered, and the fruit industry, I think, would come first. The Board has not commenced operations yet; they have not got a Director. The trustees are at the present moment considering the appointment of a Director.