

SATURDAY, 22ND FEBRUARY, 1919.

R. JACK, Professor of Physics, Otago University, examined.

My purpose is to supplement what the Hon. Mr. Thomson and Dr. Malcolm have said. I understand that you are sympathetic to the claims of science, and so I shall refer to what is advisable for the promotion of science in its application to industry. We very much need more assistance in the University before we can apply ourselves to this most desirable object. Workmen talk about forty-four hours per week at Home, but in the University our week is about eighty-eight hours. We must remember that to attract such assistance we must give sufficient remuneration. At present the tendency of young scientists is to leave science and go in for medicine, because they have no prospect. Young men who do good work in science feel that they would ruin their future if they went on with it. Therefore we need to get assistants who are as well paid as those who go in for medicine. In the next place, we would need people who are devoting their whole time to investigations. Needless to say, the assistant would also do original work, and the professor, being relieved of much of his routine work, would do the same class of work. In addition we need scholarships for the students who will continue. These would devote their whole time to original investigations. The scholarship at present available is only up to £100 a year, which is much too little. In addition to merely scholarships, we must think of the future of these people. No man will go in for original work if he is not assured of having some definite future occupation. At present the only thing we can hold out is the teaching profession, which is a very poorly paid one. Also, there are many able scientists who are disinclined to go in for teaching, but they cannot go on with their interest in science because they feel they would have nothing to do. So I think that in addition to the improvement of the status in the teaching profession there should be other openings for science students. For instance, there is the electricity department. One of the branches of my subject is electricity, and yet if one of my honours students who has done original work applied to get a post in the electricity department he has to begin at the bottom. There is also the question of the Public Works Department. There ought to be openings there for scientific men. There is also the question of the absorption of the men into industry. I think that will come, but it will need careful nursing. We wish to get, first of all, connection with industry through the scholarships—that is, let us get a student put on to do some original work for some firm or group of firms. That firm or group of firms will realize that the science is of great use, and in that way the utilization of science students will be encouraged and will become an important one. I say then that we should, in setting up the scholarships, get an alliance with industry. We can, for instance, get a special student to take up work for a special firm. Part of his time he would be in the laboratory and part of the time at the firm's establishment. There is a great future once we get that. The next point is the equipment. In other countries the universities are equipped in a way far superior to what they are here. Our buildings, too, need extension. Further, we have not a proper library for reference purposes. Then, it is a mistake to think that the only thing of value is applied science. If you neglect pure science you are neglecting applied science. If we are going to encourage science and its application to industry, let us encourage pure science as well as applied science. Then, how much electricity is taught in the schools? I have been examining 2,300 papers—matriculation and others—in connection with an examination, and in the South Island only thirty-eight of the students have taken electricity. Teachers are not encouraged to go in for the subject, because there is no demand for the teaching of it, and scientists are not encouraged to go in for the working of it because there is no future for them. The thing is really appalling when one thinks of it. One of the matters I wish to get on with at once is to investigate the state of the atmosphere at different times and weathers in New Zealand, and how we could bring about rainfall in districts where there is no rainfall, how we could bring water on to the lands where the lands are needing it, how we could forecast the weather from the observations of the electrical condition of the atmosphere, and so on. The problem is an enormous one, and we have not got time to go on with it, nor have we the money to go on with it. I also wish to say this: In my laboratory I use a large number of instruments which could be made as well and as cheaply in New Zealand as at Home. There is room there for a new industry. Let me say, too, that there is no end to the number of problems that could be taken up, and you need not fear that their encouragement would not lead to the turning-out of work. The main thing is to encourage the work at the four centres. I do not agree that there should be a central place for research, and that one place should carry all the main work. We must have the competition element in the different centres and encourage our scientists in each centre. Then we must bring in the industry as well as the science—that is, get some scheme bringing in industrial men, and we will benefit them and they will benefit us.

W. N. BENSON, Professor of Geology, Otago University, examined.

At the request of the Chancellor of the University of Otago I desire to place before you a brief statement of the type of scientific investigation with an economic value that could be undertaken by the Otago School of Mines. Owing to the shortness of the notice given me for the preparation of my statement, and the absence of the Dean and Professor Park, and the brevity of my own residence in New Zealand, I cannot at present enter into any detailed discussion of the suggestions herewith made, which have been drawn up by Professor Waters, Professor of Metallurgy and Assaying, and myself. The materials-testing laboratory at the School of Mines could be extended so as to undertake more extensive investigations than it has yet attempted into the strength of New Zealand timbers, building-stones, cements, bricks, &c., the last items in particular affording a valuable check upon the quality of manufactures by various processes