

**(3.) Co-ordination of Science and Industry : Report by a Committee of the Auckland Institute, 20th November, 1916.**

Given a limited stage in the advancement of pure science on the one hand and, on the other, a stage in the development of an industry which may be called the "pioneering" stage, these "practical" qualities are far more speedy, labour-saving, and generally effective than the more tedious methods of intellectual guidance. With the increasing development and complexity of industry, however, the time arrives in many of its branches, later in some than in others, when the weaknesses inherent in a system of control which lacks accurate knowledge and is incapable of applying scientific methods becomes more and more glaringly apparent. Unorganized intuition and general good sense having spent their force, having reached their limit, then it is that those nations which first appreciate the necessity for a radical change of system are likely to capture all the industries which have advanced beyond the intuitive stage, leaving to the less intellectual nations those which require for their operations inferior powers of mind. . . .

**(4.) Remarks by a Committee of the Auckland Institute on a Report circulated by the Industrial and Research Committee of the New Zealand Institute, 1916.**

The indefinite and more or less irrational hopes which are in evidence at the present time as to the aid which science can give to industry are to some extent the product of a misunderstanding on the part of industrialists as to what initial sacrifices may be required of them in order to obtain and give effect to the recommendations of science, and, on the other hand, they are in a measure due to some lack of appreciation on the part of scientific men of the stage to which, empiricism, in the hands of men of acute common-sense, has brought industrial operations. The present state of feeling on the subject is an encouragement to establish some institution for the furtherance of the co-ordination desired; but if nothing further is done that feeling is likely to change, and the reaction will be a menace to success. . . .

**(5.) Report of a Select Committee set up at the Request of the Government to report on Matters and encourage the Industries of the Dominion, Wellington, 27th August, 1919.**

In few respects has the evidence impressed the Committee more forcibly than in this: that there are many pressing scientific problems awaiting solution in this country. These problems concern nearly every large industry, it may be even vitally—as, for example, in the case of the disease threatening the flax industry; while untold wealth awaits the result of scientific investigation into our coals, peats, oils, clays, timbers, and other natural resources, and in even greater degree the intensive application of science to the problems of agriculture.

The Committee, after careful consideration, has come to the conclusion that there will be a much greater prospect of such problems being promptly taken in hand if they can be referred to a body the almost sole duty of which it will be to deal with them, and which will not be subject to delays such as those due possibly to the exigencies of the political situation or the passing of a vote on the estimates, but have an assured finance. Such a body will also be able to organize and co-ordinate effort throughout the Dominion. . . .

The Committee further recommends that there shall be established a central reference library under the control of the Board, containing the most important works relating to trade, commerce, science, and industry, and containing also the trading and manufacturing journals; for without access to an efficient scientific and technological library an investigator must be greatly hampered in his work. The library should under proper regulation, be available for persons in any part of the Dominion. In order to avoid duplication it is suggested that existing scientific libraries in Wellington should be, as far as possible, merged.

**(6.) The Memorandum submitted to Scientific and Industrial Research Committee by Dr. J. Allan Thomson, July, 1925.**

All branches of research in New Zealand, pure research in all its branches, applied researches relating both to primary production (agriculture, forestry, fisheries, mining) and to secondary industries, are hampered by the inadequacy of the scientific libraries in New Zealand. As research is mainly carried on in the four main centres and in the Cawthron Institute, the resources available are necessarily spread over libraries in five centres, resulting in greater local efficiency, but a loss in efficiency of any one library in the Dominion as a whole. This is inevitable. An improvement in the position can be effected by greater co-ordination and co-operation between the various libraries with the two aims of minimizing duplication in the purchase of books and of making the whole library resources available to all workers in the Dominion. The latter aim would be best served by the publication of adequate library catalogues. . . .

An alternative proposal is that the industries should group themselves and combine for the purpose of themselves financing industrial research, perhaps with Governmental subsidy. Undoubtedly there are possibilities in this direction, but it would not meet the whole need for New Zealand. The industrial research that is needed in this country is not only that affecting large established industries like the freezing and flax industries, but that affecting new or weak industries such as papermaking. Any scheme adopted should recognize the probable increase not only in the size but in the number of the secondary industries in New Zealand. Perhaps the best form of Governmental assistance would be a system of subsidies to research associations of the larger industries, combined with direct endowment of research into problems affecting new or weak industries.