

"APPENDIX B".

Prof. Robert Kennedy Duncan's statement of the case for a Bureau of Industrial Research—which is an extract from Chapter XI of the Report of Dominion Royal Commission on Industrial Training and Technical Education.

INEFFICIENCY AND ITS CAUSE.

The present condition of American manufacture is one of inefficiency. Every informed manufacturer, as well as most of those uninformed, knows that he has serious problems of such importance that in the conditions obtaining to-day their lack of solution means imminent loss for his individual instance of the industry. It may be safely said that wherever there is the smoke of a factory chimney, there are serious problems. Any intelligent chemist might very cheerfully accept a wager to go into any factory and within three days point out problems whose reasonable solution would make large differences in the dividends of the company; and these problems can be solved only by the chemist. Many a story might be told illustrating the amateurishness which pervades American manufacture, as differentiated from its expert office management.

The reasons for this inefficiency, as it appears in waste and lack of progressive factory practice, are clear and evident. Manufacturers of the past, though practically knowing nothing of applied science, forced their way to success through sheer fighting manhood and through the application of principles which they *did* understand. First among these principles was the creation of a tariff, which has injured the efficiency of American manufacture by shutting out the competition of the efficiency of foreign manufacture working through the application of modern knowledge; by hiding the importance of, and indeed by masking, the very presence of waste and non-progressive factory practice. To the difference between the cost of labour at home and abroad there has been added, among other things, the difference between scientific efficiency at home and abroad. In proof of this Dr. Duncan cites the procession of manufacturers before the Committee on Ways and Means, who in instance after instance, either consciously or unconsciously, claimed protection because of the waste and non-progressive character of his specific instance of the industry. Furthermore, many American manufacturers found it possible to rid themselves of the necessity for efficiency through the creation of combinations for the elimination of competition. Combined with these two methods of making financial progress at the expense of efficiency, there were large stores of raw material everywhere at hand, and the needs of a rapidly expanding and rather extravagant population which swallowed anything presented to it. Because of these reasons American manufacture flourished.

DISAPPEARANCE OF FOREGOING CONDITIONS.

Conditions now are rapidly changing. Every sensible man knows that the tariff on its present high pinnacle lies in an unstable equilibrium. Combinations for the elimination of competition are now illegal and ever more and more dangerous. The vast stores of raw material are now segregated into the holdings of a few men, who will release them only at an onerous and sometimes distressful rate. The increase of the population, though rapid, has not kept up with manufacturing production, and in certain lines manufacture is threatened with overproduction. In addition, economy