

one line of production. At the same time, it has been possible for a few businesses to carry on quite successfully with only one class of product. This applies more particularly to men's heavy wear and to women's light and cheap goods. Either as a direct result of this degree of specialization or for other reasons, the firms adopting this policy appear to have met with a much greater degree of success than is found in the industry as a whole.

Contrary to the view generally held, it is not entirely necessary that a business doing only one class of work shall have a large output. It is, of course, desirable that production should be sufficient to enable a plant of effective and economic size to be operated up to a reasonably full capacity, and we do not intend to deny in any degree the economies of large-scale production. At the same time, a degree of specialization does not, as mentioned above, necessarily involve anything approaching large-scale operations. The competition between local manufacturers as well as the competition from overseas has in recent years been such that manufacturers have been forced further away from the ideal of specialization. To state the matter another way, it may be said that reduced output and small-scale operations and the general effect of competition have been such as to deny to manufacturers either the economies of large-scale production or the benefits which might be expected from even a moderate degree of concentration on one or two classes of work.

We have discussed this matter not only with the object of bringing it forward for any possible remedial action, but also in an endeavour to state what we believe to be the manufacturers' difficulty in meeting a point of common criticism.

(h) Over-capitalization.

We have noted several instances in which manufacturers are in difficulty partly, at least, for the reason that overhead capital costs are excessive in relation to turnover. We cannot, however, discuss this matter without disclosing the identity of businesses which we might be held to have adversely criticized without the fullest knowledge of all circumstances, and we can at present say only that manufacturing businesses which are in this unfortunate position must to that extent be excluded from any consideration of the general depression in the industry. These firms have, in effect, a serious handicap peculiar to their own position and in no way directly related to the conditions of the industry generally. So far as individual firms are so placed, it is, of course, quite impossible for the industry or the State to take any steps towards effecting an improvement other than may arise from a general improvement in the output of local manufacturers.

(i) Factory Sites, Buildings, Machinery, Layout, and Organization.

Consideration of the suitability or otherwise of any factory is necessarily bound up in the question of the output the plant was designed for, the number of employees engaged, and the class of output to be manufactured.

Among the factories visited, we came to recognize those which may be termed "modern and up-to-date" and others in varying stages all the way down to those which at the best could be defined as "congested and very poor."

Similarly consideration of the process layout of machinery used, and the path materials have to travel, shows classes which may be classified as good, bad, and indifferent, so widely do the factories visited differ. We feel that there is room for very considerable detail study in many factories. Each factory, however, is a problem in itself, inasmuch as so many factors enter into any determination as to its operative efficiency or otherwise. Generally speaking, there is no doubt that the modern factories either do produce or could be made to produce at the minimum factory cost, provided such conditions as sufficiency of orders or sufficient percentage of "manufacturing" orders are met. We have to state, however, that even poorly-laid-out factories, with congested conditions, when they have a sufficiency of orders are evidently able to make profits under existing conditions. This leads to the conclusion that, while economies in factory production are factors worthy of study and consideration, they are not the principal element in the present condition of the industry in New Zealand.

A further investigation under this heading was considered essential, and Mr. Spidy, Superintendent of Railway Workshops, kindly consented to undertake the work, assisted by officers of his Department. One of the more efficient factories was selected. Detailed analysis of factory conditions and layout of factory were shown on a chart as they appeared at date of undertaking the analysis, together with a revised layout developed during the course of the investigation in co-operation with the boot-factory manager. It was admitted that the revised layout would effect some saving.

The Committee considers that the services of an industrial engineer should be secured by the Government. The need in the opinion of the Committee is very real, and if the right type of engineer is selected—one possessing wide experience of general layout of industrial plants—the results will be very beneficial, especially in increasing efficiency and reducing costs. In this connection the Committee would like to make the observation that after his inspection of the Dominion's industries in May, 1926, Sir H. Frank Heath, K.C.B., Secretary to the Department of Scientific and Industrial Research, London, reported as follows:—

"I suggest that the Department of Industries and Commerce should include upon its staff two or more well-qualified field officers of technical training and experience—one, say, on the engineering side, the other on the chemical—whose duty it should be to study the secondary industries of the Dominion at first hand and keep the Secretary informed of their technical difficulties and successes. The powers entrusted to the Department under the Act are so wide that some provision of this kind appears to me to be desirable in any case. If the industries are to be assisted scientifically by the new body, which will have many other scientific responsibilities upon its shoulders, this strengthening of the staff of the Department of Industries and Commerce appears to me to be necessary."