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Co-operation in Industrial Research

THE stimulating lecture on fundamental scientific problems in the food industry delivered by Dr. L. M. Lampitt before the Liverpool and the Edinburgh Sections of the Society of Chemical Industry early this year directed attention to a number of problems in research which are of interest far beyond the bounds of the food industry. Dr. Lampitt, for example, was emphatic on the importance of the co-ordination of research, not merely of that financed or directed by the State but also of that carried out by academic or private institutions or by industry itself. Through lack of such co-ordination, not merely in the food industry but in other industries as well, there is overlapping and waste of effort, and also failure to undertake some of the more fundamental work upon which progress finally depends.

Dr. Lampitt suggested that one of our most urgent problems is to explore the possibilities of effective co-operation between the research stations, research associations, the universities and the industrial research organisations. A survey of extra-university research in pure and applied science has already been undertaken by the Association of Scientific Workers, and should provide much useful data for the study of the possibilities of co-operation. The existence of duplication and the neglect of fundamental problems constitute powerful and sufficient reasons for an attempt to formulate a definite policy which would enable the greatest use to be made of each type of activity. Such a policy in itself would ensure closer contact between the scientific investigator and the industrial world, and would tend to eliminate any tendency for the former to work on problems which he considers to be of practical importance but which a representative of industry would easily demonstrate to be of no appreciable utility.

The elimination of duplication and waste of effort, even with existing resources, should tend to liberate funds for fundamental scientific research, the position of which has already been seriously threatened by the restriction of the funds available for the Department of Scientific and Industrial Research. As stated in the report for the year 1930-31, in curtailing such expenditure, the policy of the Privy Council was to concentrate available funds on work of the most immediate practical value to industry, leaving to happier

times the expansion of work of which the results could only be available at some more distant date. In the campaign which has since been undertaken to secure support for the research association scheme following on the exhaustion of the Million Fund, stress has been laid once more upon the work of the most immediate practical value, and the prosecution and endowment of fundamental and long-range research have not received the attention which their place in the national economy demands. Apart from this, although the Department has done much to encourage fundamental research in universities and other institutions, it has from the first attempted to induce industries to undertake work for themselves rather than to carry out scientific work for them or even to organise fundamental research.

This position, while general, is fortunately not universal. Certain of the research associations, for example, have been and still are pursuing investigations of fundamental scientific importance, the application of which has yet to be demonstrated. Other sections of industry have made their own arrangements for assisting academic research at the universities by a system of grants in aid of investigations on purely scientific subjects which are likely to contribute indirectly to the solution or understanding of industrial problems.

As a prelude to such co-operation, it is essential that we should think out clearly the place and contribution of each variety of research organisation in relation to the economy of whole industries, and indeed of the national and not merely of individual industrial units or geographical or sectional interests. It should not be too difficult a task, given a broad outlook and a spirit of goodwill and co-operation, to elaborate a policy and devise a scheme which, while permitting full autonomy to individual research units, should offer immense advantages in efficiency, economy, and the interchange and discussion of ideas and results among research workers. It is unlikely indeed that under such conditions it would be necessary to create a fresh research institute or organisation. The more efficient utilisation of funds already available, or a comparatively moderate expansion of expenditure within the framework of our existing organisation, should suffice to finance a good deal of fundamental research the prosecution of which is overdue.

A further point made by Dr. Lampitt relates to the broader distribution of purely scientific

data collected in the research organisations of industry. Even the smallest industrial research or analytical laboratory frequently acquires important scientific data, and it is rare for such physical or chemical knowledge to be of commercial importance to the firm, or for its disclosure to play into the hands of a competitor. If without disclosing the purpose of investigations of this type, means could be found of publishing the results, a large amount of knowledge locked up in individual units of an industry could be made available, to the advantage not merely of particular industries but also of the industrial and scientific world as a whole. It would, in fact, react to advantage and credit of those firms responsible for the work and would undoubtedly assist in the further and more efficient planning of our available resources.

The illustrations cited by Dr. Lampitt from the food industry were sufficiently suggestive, but they could easily be multiplied in such fields as analytical work, chemical engineering and corrosion, or in management methods. Much machinery for co-operative research already exists which might with advantage be used much more extensively in the exchange of information on non-competitive matters. Even in regard to the abstracting of chemical literature and information services, mistaken conceptions of individualism and independence still delay progress and make it difficult to achieve standards which are possible by co-operation alone.

These obsolete ideas are being steadily undermined by the work of various organisations, such as that of the British Chemical Manufacturers in regard to industrial safety, or of the British Standards Institution in the standardisation of materials and practice. The development of habits of co-operation and encouragement of the exchange of information on common problems quietly fostered in this way should go far to overthrow ideas of trade secrecy which have prevailed too long. With this, however, there is still need for a much fuller realisation of the place of research in everyday industrial practice. Industries which plead inability to meet a heavier demand for support of their research organisation cannot, in fact, expect much credence to be placed in their protestations, unless they can adduce evidence of a spirit of co-operation and of strenuous efforts to utilise to the maximum advantage by co-operation on such lines the organisations within their bounds already devoted to research.