

Again, before the war it was customary for the manufacturers of ordinary commercial glass articles to import from Belgium the sand used in their manufacture. The loss of this country to the enemy immediately cut off the supply. Search however was instituted, and it was soon found that sand equally suitable existed in large quantities in the British Isles. We have heard of the folly of carrying coals to Newcastle, but it will be difficult to find examples of economic folly more prodigious than the two which I have cited.

I might also cite an example of the lack of departmental co-operation in our own country. A few years ago it became a matter of considerable interest to ascertain if radium bearing minerals existed in deposits of any extent in one of the Provinces of Canada. The action which was taken in the matter—and I have no doubt that such action was taken in good faith and intended for the best—was to offer a reward of some \$25,000 for the discovery of such minerals in paying quantities. Up to the present, I believe, no part of the reward has been paid. Now in the procedure followed in this case, the Department referred to was quite unaware of the existence of a staff of trained scientists in another Department of the same Government which had gained world wide recognition for its researches on the properties of radium bearing soils and minerals and which, if asked to do so, could have indicated a very simple way of making a complete survey of the Province, which would give such information as would enable one to say whether radium bearing minerals existed in any considerable quantity or not. Moreover, the methods which would be applied in this survey are of such a sensitive nature that if deposits of the minerals sought for did exist it would be possible to locate them with ease and considerable precision.

These are but two or three illustrations of our lack of co-ordination in effort, but they serve to show what can be done if proper machinery be devised to co-ordinate our activities and to work out in detail a broad scheme of scientific co-operation.

## II. NATIONAL ORGANISATION FOR INDUSTRIAL RESEARCH.

Coming now more particularly to the subject of my address, namely, the establishment of an organisation for stimulating and fostering research as a basis for our manufactures and industries, we are faced with the problem of how to bring such a project into operation with the greatest efficiency and the least possible friction.

### UNIVERSITIES AND INDUSTRIAL RESEARCH.

The view is held in some quarters in Canada that the direction of research work, both industrial and purely scientific, should be placed