

## RESEARCH ORGANIZATION.\*

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WHEN the war is over it will probably be found that there has been established in many countries a much more methodical and extended interest in, and support of, research than existed before. While it was Germany that set the example for half a century, there was a tendency in America to follow her example even before the war. The American Association for the Advancement of Science had, in 1914, appointed a Committee of One Hundred to promote coöperation between the industries and universities. Scientific journals frequently published articles upon the subject, but the advance was slow. The awakening which the war produced has led to vigorously renewed activity, and a partial summary of the efforts already made among the English-speaking nations may be interesting. This is the more fitting at this time because of the United States Senate Bill 4874, recently introduced into Congress by Senator Newlands, of which the substance is as follows:—

"That in order to aid in acquiring and diffusing among the people of the United States useful and practical information on subjects connected with engineering and the other branches of the mechanic arts, and to promote the scientific investigation and experiment respecting the principles and applications of the mechanic arts, there shall be established under the direction of the land grant college in each State or Territory. . . . a department to be known and designated as an 'engineering' or a 'mechanic arts experiment station.'

"That it shall be the object and duty of said experiment stations to conduct original researches, to verify experiments and to compile data in engineering and in the other branches of the mechanic arts as applied to the interests of the people of the United States, and particularly of such as are engaged in the industries; also to conduct researches, investigations and experiments in connection with the production, transportation, extraction and manufacture of substances utilized in the application of engineering and of other branches of the mechanic arts to industrial pursuits. . . .

"That bulletins giving results of investigations or reports of progress shall be published. . . .

"That for the purpose of paying the necessary expenses . . . the sum of fifteen thousand dollars per annum is hereby appropriated to each State and Territory. . . .

"That in order to secure, as far as practicable, uniformity of methods and economical expenditure of funds in work of said stations, the supervision of the proposed experiment stations shall rest with the Secretary of the Interior."

In other words, this Bill proposes to so supplement and extend the research bureaus of the United States Government that all branches of industry shall have the same advantages that agriculture already enjoys. It

\*In view of the new industrial problems that must confront Canada as a result of the war, we have on several different occasions advocated a more intelligent effort in research work in Canada. The accompanying article from the "General Electric Review," outlines what is contemplated in this direction in other countries.—Editor.]

gives recognition to the fact that, as the basis of all industrial progress and substantial prosperity, scientific research is as much a governmental function as is education, of which it is, indeed, merely the creative phase.

In Great Britain the Board of Education is putting forth a "Scheme for the organization and development of scientific and industrial research." It "is designed to establish a permanent organization for the production of industrial and scientific research," and particulars were given in a report issued on July 26th, 1915. [Journal of the Society of Chemical Industry 34, 783 (July 31st, 1915).]

The scheme provides for the establishment of:—

(a) A Committee of the Privy Council responsible for the expenditure of any new moneys provided by Parliament for scientific and industrial research;

(b) A small Advisory Council responsible to the Committee of Council and composed mainly of eminent scientific men and men actually engaged in industries dependent upon scientific research.

The Committee of Council will consist of the Lord President, the Chancellor of the Exchequer, the Secretary for Scotland, the President of the Board of Trade, the President of the Board of Education (who will be Vice-President of the Committee), the Chief Secretary for Ireland, together with such other Ministers and individual members of the Council as it may be thought desirable to add.

The first members of the Council will be:—

Rayleigh, Beilby, Duddell, Hopkinson, M'Clelland, Meldola, Threlfal, with M'Cormick as administrative chairman.

The present scheme is designed to establish a permanent organization for the promotion of industrial and scientific research.

It is no way intended that it should replace or interfere with the arrangements which have been or may be made by the War Office or Admiralty or Ministry of Munitions to obtain scientific advice and investigation in connection with the provision of munitions of war. It is, of course, obvious that at the present moment it is essential that the War Office, the Admiralty, and the Ministry of Munitions should continue to make their own direct arrangements with scientific men and institutions with the least possible delay.

It is clearly desirable that the scheme should operate over the kingdom as a whole with as little regard as possible to the Tweed and the Irish Channel. The research done should be for the kingdom as a whole, and there should be complete liberty to utilize the most effective institutions and investigators available, irrespective of their location in England, Wales, Scotland, or Ireland. There must, therefore, be a single fund for the assistance of research, under a single responsible body.

It is obvious that the organization and development of research is a matter which greatly affects the public educational systems of the kingdom. A great part of all research will necessarily be done in universities and colleges, which are already aided by the state, and the supply and training of a sufficient number of young persons competent to undertake research can only be secured through the public system of education.

The primary functions of the Advisory Council will be to advise the Committee of the Council on

(i.) Proposals for instituting specific researches.