

have been exacted and have only been possible of execution through the scrupulous good faith and consideration of all parties. Since November 1 practically the entire civil population of Belgium has been dependent upon the Commission for bread and many other necessities. As the result of the industrial paralysis 2,750,000 people are reduced to destitution; and another 500,000 would have been starving even had food supplies been available, but for the financial operations of the organization.

Three departments of work were created by the Commission—respectively the provisioning, the financial relief and exchange, and the benevolent departments. The first is charged with the duty of revictualling the whole 7,000,000 inhabitants with necessary imports; and up to June 30 it had either delivered or in stock over 600,000 tons of foodstuffs for Belgium, of the gross value of more than £9,400,000. These foodstuffs are resold through a broad system of reticulation and the profit earned—£987,000 to June 30—is devoted to the support of the destitute. Through the operations of the financial relief and exchange agency, large sections of the community are rehabilitated in income, and saved from sinking in the mire of poverty. Remittances and loans to June 30 aggregated about £4,000,000. In the benevolent department the charity of the world and of the Belgian people themselves is mobilised for the support of the necessitous. The expenditure in this direction up to June 30 was £5,000,000; and it is now proceeding at the rate of £1,000,000 a month. Beyond this outlay is a large amount of local charity—now exceeding £2,000,000. The response of the American, British, Australasian, and other people to the plea on behalf of the Belgians has been "without parallel in international philanthropy." Without it, success in the prevention of starvation would have been impossible; and it must continue, because individual reserves and local resources are surely declining. "The growing and gloomy problem is that of unemployment, for month by month a larger proportion of the industrial mass of over 3,500,000 people falls further and further into destitution." In addition to the Belgian work, the Commission since April last has been provisioning 2,300,000 civilian people in that portion of northern France which is occupied by German armies. The district is mostly of an industrial character, and is normally dependent for the larger share of its food supplies upon importations from other sections of France. The inadequacy of local production, with the destruction resulting from military operations, caused a shortage of food which threatened the population with famine in its most acute form. Regular weekly cargo steamer services are maintained from North America, River Plate, Indian, and British ports, and the ships are immune from attack. At Rotterdam the foodstuffs are transhipped into a large fleet of lighters, and these are towed down the canals to warehouses and milling centres throughout Belgium and Northern France. The gigantic tasks of the Commission are performed with increasing efficiency and careful attention to detail; and the wonderful success of the organization is a monument to the zeal and devotion of many scores of thousands of voluntary workers of both sexes throughout the world.

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# STATE ORGANISATION OF SCIENCE.

## ITS APPLICATION TO INDUSTRY.

A paragraph appeared in "The Advertiser" on Monday in which it was stated that in discussing the scheme of the British Government for applying science more effectively to industries, and the wisdom of extending it to the Dominion Professor D. Orme Masson, of Melbourne on Saturday expressed the opinion that the science of Australia, as much as that of Great Britain, required organising to make it available for national purposes. Professor Kerr Grant, of the Adelaide University, agrees with Professor Orme Masson's view that there is need for a better organisation of science in relation to the State.

"There is nothing, in my opinion," I said to a representative of "The Advertiser" on Wednesday, "with which national efficiency and progress are so closely bound up as this problem of effectively organising scientific knowledge and applying it to the needs of the community. It should be understood, however, that I use the word 'science' in its comprehensive sense, and would not quarrel with the social or economic reformer who claims priority of importance for his remedies for social evil, provided only that these receive the sanction of social or economic science. The local branch of the British Science Guild has, in fact, during the past few years advocated several legislative measures of social reform, two such, for example, referring to care of infant life and to control of venereal disease. So far as regards the application of science to industry, it is obvious that opportunities here for this are much more modest and restricted than in such countries as Great Britain, Germany, or the U.S.A. In Germany for many years, and now, I believe, to an increasing extent in America, it is the practice for large industrial concerns—take as examples the Baden Aniline Dye Company and the General Electric Company of Schenectady, N.Y.—to organise a special department of research, manned by men of first-class scientific training and calibre."

Does it pay?

"In the long run, and often after repeated failure, it does. The German Aniline Dye Company spent thousands of pounds—with no certainty of final success—in developing a synthetic process of making sulphuric acid. The very first year's return from the perfected process recouped them handsomely. Similarly, the General Electric Company wasted hundreds of pounds in experiments with X-ray bulbs until finally their expert evolved a new type, which in a few years will entirely replace the old in the markets of the world."

It is a costly matter evidently.

"Yes; such research departments and experiments as these can, obviously, be supported only by large industrial organisations. Failing these, it is the natural province of the State to organise a general research laboratory for the solution of its industrial problems."

You have noticed that the Government intend to do something?

"Yes; this principle has, happily, already received recognition from the Governments of the various Australian States, not least by that of South Australia. The present Minister of Industry in South Australia recently announced his intention of creating a special department for chemical research on certain specific problems of commercial importance to this State. This is a step in the right direction, and may lead to big things. The late Government also recognised it when they combined the offices of professor of botany at the University and State vegetable pathologist. Other departments at the University also assist the work of various State departments. But there is room for much extension of this co-operation. This research work, in applied no less than in pure science, should in fact be regarded as the prime and not merely as an accidental function of our State universities. The University should be the research laboratory of the State."

Could it be worked without injuring the University?

"Such an extension of its activities would in no wise impair the efficiency of the University as an institution for the training of professional men. On the contrary, nothing so stimulates the interest of teacher and student alike as contact with the actual problems of his science, as opposed to the necessarily connected problems of the classroom. The advantages medical students derive from participation in hospital work would then be shared by students in all the applied sciences. The work of attacking these problems

might be assigned, under direction, to the best brains among the graduate students. This is the solution of the biggest of all commercial problems—to utilise to the fullest advantage the brain-power of the community. Applied to any other purpose than the creation or application of new knowledge, such brain-power—I do not here include the genius of the artist—is, from an economic point of view, utterly wasted. A Faraday or an Edison condemned to the routine of an office! Who can calculate the loss?"

How would you proceed with the scheme?

"Let us suppose that Mr. Peter Waite's splendid gift of land to the University be made the basis of an agricultural research institute, endowed with a wise liberality, to permit of extended experiments by an expert staff on the problems of wheat breeding. Let us suppose that these experiments result finally in the production of a wheat that will yield a single bushel only per acre more than the varieties at present cultivated. This is no extravagant supposition. Taking 2,000,000 acres as an average area under crop, we see that the single result of scientific research would suffice to lift from our shoulders for ever the whole financial burden of the war."