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PRODUCTION AND HOURS OF WORK

IN 1915 the Health of Munition Workers' Committee was appointed "to consider and advise on questions of industrial fatigue, hours of labour and other matters affecting the personal health and efficiency of workers in munition factories and workshops", and in 1918 the final report was published.

By means of *ad hoc* investigations and verbal evidence the Committee came to the conclusion that the long hours worked were detrimental to the health and efficiency of the workers, although they did not feel that they could definitely fix a limit for a suitable working week. Since 1918, much research work has been done and definite knowledge is now available that was lacking in 1918. For many reasons there has been a growing recognition of the importance of a reasonable working week. Before the present War some prominent firms had adopted the five-day week, and the necessity for adequate holidays and other aspects of industrial welfare had received much attention.

For research purposes the problem of hours had receded into the background, and investigations into less obvious environmental conditions, the effects of boredom, accident proneness, vocational guidance and selection, as well as problems of mental and physical health were conducted and published.

Apparently the lessons of the War of 1914-18 were not appreciated by the country in general, and so it has been necessary for the Industrial Health Research Board to publish a report* which has for its aim the consideration of some of the hindrances to maximum production in relation to the human effort.

The idea of man as a machine dies hard. For maximal industrial production there must be a regular flow of materials, the machines must be in perfect working order, and the worker of the machine must be in good health. For good health he needs, at least, adequate food, regular sleep, regular periods of leisure and reasonable conditions of work. Since the human being is not a machine he has the power to "rise above himself", to make himself by force of will produce more work than is his ordinary maximum. Hence the amazing success of emergency efforts. Unfortunately, those in authority often fail to acknowledge, except by lip service, the extraordinary as being extraordinary, and complain when the extraordinary gives way, as it must, to the ordinary. If a war were of a few weeks' duration, then little harm would be done by continued long hours, but when in this, as in the last, it is a question of years, then a steady output that can be regularly maintained is better than overwork followed by a steady decline.

This report shows the extraordinary efforts made by workers after Dunkirk. Throughout Great Britain, workers were stimulated by the state of emergency to make good the material losses incurred as a result

* Medical Research Council: Industrial Health Research Board. Emergency Report No. 2. Hours of Work, Lost Time and Labour Wastage. Pp. iv+26. (London: H.M. Stationery Office, 1942.) 6d. net.

of the collapse of France, and the effort was reflected in the production. The strength of the incentive, however, gradually waned, and fatigue and boredom could not be ignored. The time lost due to sickness, injury and absence without permission, when undisturbed by extraneous factors, varied with the weekly hours of work. It was usually reasonably low when the hours of work were less than 60 per week, but was higher and in some cases excessive when the hours were 65-75 per week. Unexplained absence of short duration rose with the increase of hours; this type of absence was due often to the desire for rest, or for a change from the monotonous conditions of the work. In almost every case holidays were followed by an increase in the rate of working. Labour wastage was high in some factories and particularly where large numbers of women unaccustomed to factory work were employed; domestic responsibilities, the difficulties of shopping and the problems of transport played a large part in this loss.

The findings resulting from the investigation suggest that over an extended period the weekly hours of work should generally not exceed 60-65 for men, and 55-60 for women. The report concludes with these words: "When it is remembered that many workers lived far from the factories, and had to face air-raids when travelling to and from work; that some had lost their homes and had to sleep in improvised shelters; and that often they had to wait outside in the cold and rain because of inadequate transport arrangements, the time-keeping of the factory personnel studied deserves high praise."

That the Government recognizes the importance of such investigations as those of the Industrial Health Research Board is already apparent from the announcement, recently issued, recommending that the customary annual holiday, with a break of one day on Easter Monday, Whit-Monday and August Bank Holiday and of two days at Christmas or the New Year, should be taken. By this means it is hoped to maintain the health of the workers and also to keep up production. Nevertheless, a scientific study of the many human problems of labour is as necessary now as in the War of 1914-18, and will be still more necessary after the War.

GEOLOGISTS IN WAR-TIME

THE support given by a modern State to geological studies usually takes the form of a Geological Survey, the functions of which are, broadly speaking, twofold: namely, to prepare and publish geological maps and generally to promote the study of geology, and to collect and record geological information of economic importance relative to mineral resources and water supply. The balance between the two aspects must be delicately held, and depends to a large extent on circumstances; thus in time of war, economic work will hold first place.

Great Britain is served by an excellent Geological Survey, which has been in existence for just over a

hundred years. Its headquarters are at the new Museum of Practical Geology, South Kensington, and there are branch offices in Manchester, Newcastle-on-Tyne and Edinburgh. The staff consists of a relatively small band of highly trained geologists, whose activities take them to all parts of the country, either on routine work or to undertake special inquiries. Contact is maintained with geologists in universities and similar institutions, and with mining engineers and others specially interested. During its long existence the Survey has collected a vast amount of detailed information, much of which is unpublished, but is freely available for consultation at headquarters or in the branch offices. It might be thought that the very existence of such a centralized staff of trained workers would be sufficiently well known to ensure that full use would be made of their services in the present grave times, yet there is evidence that geological knowledge is not being utilized as it should be.

Prof. H. H. Read described the position very ably in an article in *NATURE* of January 10, p. 39. There he showed the high importance of geological studies for industry and for agriculture in locating new and substitute sources of mineral products. It may be pointed out that such sources are not only of importance in replacing supplies cut off by the spread of war, but also that whenever human supplies can be used to replace material formerly imported, there is a saving in vitally important shipping space. Geologists are also in a position to advise in connexion with the siting of camps, factories and underground storage and shelters, and we understand that a certain amount of consultation is somewhat belatedly taking place. Here perhaps the local geologist is also likely to have valuable knowledge. Nevertheless, there is no question that, in many cases geologists have not been consulted, with resulting waste of money and effort. Prof. Read also refers in his article to the remarkable results obtained during the past twenty years in the U.S.S.R. through the employment of thousands of geologists in mineral prospecting and development.

Turning now to the direct use of geology in the Armed Forces, it is of interest to note the position in the last war as described in "The Work of the Royal Engineers in the European War of 1914-1919. Geological Work on the Western Front" (Chatham: Secretary, Institution of Royal Engineers, 1922). In 1914, the Army had no geological establishment. Very soon, however, the need for expert advice in regard to water supply became apparent, and one geologist was appointed early in 1915. In May 1916, the Australian Mining Corps arrived in France, accompanied by the late Prof. (afterwards Sir) Edgeworth David, of the University of Sydney, who eventually became geological adviser on matters connected with military mining at G.H.Q. In 1916, Lieut. Loftus Hill, assistant government geologist of Tasmania, was placed in charge of special boring operations. Shortly before the Armistice was signed, further additions were made to the geological staff at G.H.Q., which eventually totalled five, in order to cope with the demand made by the advancing forces