NATURE

No. 3780 SATURDAY, APRIL 11, 1942 Vol. 149

CONTENTS

	Page
Adult Education as a Social Activity	391
The War-time Social Survey	393
The Problem of the Autonomy of Life. By Prof. F. G. Donnan, C.B.E., F.R.S.	394
Magnetochemistry. By Dr. W. Rogie Angus	396
Topology. By Prof. H. T. H. Piaggio	396
A Steel-maker's Autobiography. By Dr. C. H. Desch, F.R.S.	397
Some Aspects of Algal Chemistry. By Prof. I. M. Heilbron, F.R.S.	398
Foundations of the New World Order. By Sir John Orr, F.R.S.	401
Quantum Theory and Diffuse X-Ray Reflexions. By Prof. Max Born, F.R.S., Dr. Kathleen Lonsdale and H. Smith	402
Obituaries:	
Dr. George Senter. By Prof. W. Wardlaw	405
Dr. J. G. Myers. By W. E. China	406
Sir William Bragg. By A Free French Scientist .	406
News and Views	407
Letters to the Editors:	
Use of Soil Fertilizers in China.—N. F. Chang and Dr. H. L. Richardson	410
Age Changes in Size of Muscle Fibres of the Marsupial Heart.—Prof. Reancis Davies and Dr.	410
Eric T. B. Francis	410
Extra Spots in Electron Diffraction Patterns.—A. Charlesby and H. Wilman	411
Open Packing of Spheres.—Sidney Melmore .	412
'Firmness' in Compression and Tension.—Dr. D. C. Broome and L. Bilmes	412
Silica and the Liesegang Phenomenon.—Alcon C. Copisarow and Dr. Maurice Copisarow	413
Research Items	414
National Institute of Economic and Social Research .	416
Whistling Meteors	416
New Descriptions of Some Indian Plants	417
Drug Control in India	417

Editorial and Publishing Offices
MACMILLAN & CO., LTD.,
ST. MARTIN'S STREET, LONDON, W.C.2

Telephone Number: Whitehall 8831
Telegrams: Phusis Lesquare London

Advertisements should be addressed to
T. G. Scott & Son, Ltd., Three Gables, London Road, Merstham, Surrey
Telephone: Merstham 316

The annual subscription rate is £4 10 0, payable in advance, Inland or Abroad All rights reserved. Registered as a Newspaper at the General Post Office

ADULT EDUCATION AS A SOCIAL ACTIVITY

HE problems of man-power and woman-power to which attention has been directed by recent speeches of the Minister of Labour and National Service in view of the growing demands which the War is making upon our resources, have two main aspects, mobilization and utilization. The former is liable to receive more than its due share of attention, and the recent report of the Beveridge Committee on Skilled Men in the Services is a timely reminder that the reservoirs of labour, skilled or unskilled, male or female, are strictly limited. The mobilization of every available man or woman will be insufficient to develop our full fighting and productive powers unless there is wise apportionment of labour between the different fighting services, war production and the essential services, including civil defence, transport, and the like. Equally it will not be developed unless that disposition is made in conditions which call forth from each individual his or her maximum effort, and in which physical, mental and moral vigour can be sustained through whatever days of trial or endeavour lie ahead.

The question of morale is thus of supreme importance, and Mr. Bevin's remarks on management in his recent statement in the House of Commons may arouse misgivings as profound as any of the revelations in the Beveridge Committee's report. The responsibility of management in the maintenance of the conditions which promote industrial efficiency is so fundamental that the failure of the Minister to utilize the powers which he already possesses to deal drastically with inefficient management will recoil severely on his own head if not rectified. The co-operation between management or employer and the worker has two sides, but we cannot complain of lack of response on the part of the worker until the employer and the Government-have done their utmost to establish the right conditions.

The prescience of Mr. Winant's words in his valedictory report to the International Labour Organisation last year has been attested by much that has happened in Great Britain and in the United States since they were written. The democracies cannot survive unless they achieve effective co-operation between Governments and organizations of employers and workers. Its absence is the primary and fundamental cause of waste of labour, whether in the neglect of personnel management, the failure to establish proper working conditions, to utilize the scientific knowledge acquired so painfully in the field of industrial health, or in the petty misunderstandings over income tax deductions and the like through indifference to psychology and the human element generally.

Mr. Bevin in his speech rightly referred to a great weakness in British industry due to the failure of employers to give the personnel management its proper status. Although over a very wide field of industry that mistake is now being rectified, we still suffer from the long neglect to extend the scientific study of the human side of industry. With adequate support in the past such bodies as the Industrial Health Research Board and the National Institute of Industrial Psychology could have been ready with a far wider range of experience for the solution of pressing problems. As it is, the reports of the Select Committee on National Expenditure, like the emergency reports of the Medical Research Council, bear melancholy witness to the failure to apply knowledge on hours of work and working conditions generally which were acquired a quarter of a century ago.

There are welcome signs that, in the Services as well as in industry, the scientific use of labour is being attempted on an increasing scale. The appointment of an advisory committee consisting of Dr. C. S. Myers, Prof. J. Drever, Prof. F. C. Bartlett and Prof. C. Burt to assist the Director of Personnel Selection shows that the Army recognizes the value of scientific knowledge in this connexion, and the annual report of the National Institute of Industrial Psychology affords other evidence of the utilization by the Services of scientific men in the training and selection of personnel. The scientific aspect, however, is only one side of the problem. Important as may be scientific selection and training of labour, the use of scientific knowledge to establish the best working conditions, to minimize hazards to health, to eliminate accidents and to reduce friction between management and workers, more is required if production is to reach its maximum efficiency.

Despite the emphasis placed on this subject by the Acting Director of the International Labour Office in his report to the International Labour Organisation Conference at New York last October, and the admirable report on War-time Developments in Government-Employer-Worker Collaboration prepared for consideration at the same Conference, neither in Great Britain nor in the United States can we be said to have reached the heart of the problem. Primarily it is one of education, and the main responsibility for initiative must inevitably lie on the Government. Moreover, it is a question of adult education; not merely of educating the adolescent entering industry for the first time, but rather of enabling the great mass of adult workers to understand what is required of them, to see their own part in relation to the task of the nation, and how their own zeal and efficiency and sacrifice can fortify the national effort and shorten the road to victory.

The vital importance of adult education in this matter has, generally, not been grasped. It completely transcends the scheme for joint consultative and advisory committees consisting of representatives of workers and managements already initiated for the Royal Ordnance Factories by the Director-General, Sir Charles McLaren. These committees are intended to smooth difficulties by arranging the regular exchange of views between management and workers on matters relating to improvement of production and increase of efficiency.

A constitution for Factory Production Committees was signed on February 26 by representatives of the Ministry of Supply and of all the trade unions having members in the Royal Ordnance factories. The functions of the committees are defined as "to consult

and advise on matters relating to production and increased efficiency in order that maximum output may be obtained". Meetings will be held fortnightly or as required, but the workers' side is to meet weekly to expedite procedure. A central committee has been set up to ensure immediate and efficient application of the scheme and it will act as a pool for ideas.

This development is essentially an extension of the works council scheme which has been used by progressive firms for a number of years past. The important contribution it should undoubtedly make to efficiency and output should not lead us to overlook the fact that it scarcely touches the wider question of morale. One of the real weaknesses in morale in Great Britain is the lack of understanding and interchange of ideas between those who direct the War and those who are directed. Despite all the efforts of the Prime Minister himself and his great power of interpreting the situation and strategy of the War, this is notably true of industrial and civilian defence workers. Adult education is essentially related to morale in the waging by a democracy of total war.

While, however, the importance of education as a very corner-stone in reconstruction is widely appreciated, the importance of adult education in that respect, and still more in regard to the war effort, is almost completely overlooked or ignored. Adult education, it is true, receives passing mention in a pamphlet "Education for Democracy", by Barbara Drake, recently issued by the British Association for Labour Legislation (London: 1942. Pp. 44. 9d.); here the importance of developing systems of adult education as centres of social activity as well as seats of learning is recognized, as well as of encouraging voluntary bodies, organized on democratic lines, which provide suitable courses of adult education. The report referred to above on War-time Developments in Government-Employer-Worker Collaboration, however, does not even mention education.

The truth is that the War will be won and the peace made by the generation of men and women who are grown up now. Unless by adult education we attempt to correct mistakes in their outlook, training and vision, the growing generation may, like its predecessor, find its prospects once again shattered by failure of this grown generation to seize the opportunities opening now before it. Moreover, it should be remembered that the success of the war-time measures of co-operation between workers and employers and the Government is due primarily to the recognition of their validity and purposes both by the trade unions and by management. This recognition was largely due in turn to the need for expedition in settling grievances and to the special care taken to avoid arousing antagonisms by rigid enforcement. There must be some similar recognition and understanding by the mass of the people if they are to take their place in a new and better social order, and this it is a prime function of adult education to supply.

The contrast between the free nations and the totalitarian regimes is nowhere more marked than

in this matter of the methods of democratic collaboration. The value of such collaboration in the formulation and application of a labour policy has been repeatedly demonstrated in dealing with the many problems involved in the allocation of man-power between industry and the Armed Forces, the control of employment, training and apprenticeship, dilution of skilled labour and transfer, and the mobilization of women and other labour reserves. As a recent P E P broadsheet on mobilizing woman-power indicates, it may well be a decisive factor in regard to the use of part-time labour. Tripartite collaboration, through its assistance in safeguarding the interests of workers in the factories, those mobilized for the army, and of seamen, both in the Mercantile Marine and in the Navy, has already made important contributions to the national morale, and has often made important contributions in such matters also as problems of safety, elimination of hazards, prevention of accidents from fatigue, overstrain and tension, and the promotion of industrial hygiene.

The full use of our national resources, whether in time of war or of peace, and the provision of the commodities and services necessary to raise or even maintain general standards of living, involve the full co-operation of employers and workers with the Government at every stage, from the initiation of a policy to its application and enforcement. educational aspect of such collaboration is, however, often overlooked. National safety and efficiency make it essential, for example, that all groups in the community should understand the aims of certain measures-rationing restrictions, black-out precautions and fire prevention are typical examples. The part which organizations of employers and workers have played and must play in the interpretation of such measures and in carrying back into the local community understanding of the problems at issue and in furnishing explanations of policy is seldom appreciated.

Such educational work—education of the adult in a very practical sense—is one of the most important functions of the machinery of co-operation established during the War. Further, one of the most imperative needs at the present moment, if we are to attain and sustain our maximum productivity, is for a deliberate planned extension of adult education of this type. Without it the fresh sacrifices being demanded of us, the call to more spartan living and strenuous endeavour, may fail of their full effect and purpose through inadequate response, misunderstandings or avoidable friction. As already noted, the poor morale which at present exists in some sections of the people of Great Britain, particularly among industrial and in civil defence workers, is due largely to the lack of interchange of ideas and common principles of understanding between those who direct the War and those who are directed.

The maximum war-effort can only be obtained with the full co-operation of the consciousness of our society, and the lack of co-operative thinking, knowledge and discussion between the two sections of our democracy may be disastrous. We must have leaders who can explain to the members of the Services

and the workers the longer-term geographical and historical implications of the War, the tasks before us, the dangers ahead, the principles and practical problems of the post-war era. Moreover, it is just as important that these leaders should listen to complaints as well as talk and interpret.

The recent debates in Parliament have shown how admirably the House of Commons is fulfilling the vital function of interpreting to the Government the mind of the nation. To meet the primary need, the suggestion recently advanced by Mr. Stephen Spender in The Times of February 25 of extending the idea of the education officer already found in the Army merits careful exploration. Mr. Spender suggests that there should also be education officers in factories, in civil defence and possibly in civilian life. Their task would be threefold: to assist the people to understand the tasks that face us as a people sharing common aims, principles and opportunities; to win conscious co-operation in the furthest aims of the War and the ensuing peace; and to equip the individual to be educated, socially responsible, and imbued with the principles of a less anarchic form of post-war society.

Whether or not some definite organization is required to implement this essential work of education, voluntary effort will still be required if only to fill the gap while some formal scheme is being elaborated. Without vision the people will indeed perish, and on all who have caught some glimpse of the values that are at stake, of science, of art, of religion, of any aspect of that tradition of humanism that has been handed down to us, or who have some understanding of the ultimate purposes for which we are fighting, lies the obligation to share it as widely as possible with their fellows. Scientific workers, many of whom recognized the challenge and threat to our heritage long before the outbreak of war, have a special as well as a general responsibility in this matter. With their responsibility for seeing that science makes its fullest contribution to the national effort, for waging relentless war on any source of technical or administrative inefficiency, lies this further responsibility of helping their fellow-workers, their comrades-in-arms and their fellow-citizens to share that vision of deep purpose and final victory, and, sharing it, to see the part which each must play in the furtherance of that purpose, the winning of that victory and the shaping of the nobler order in which that purpose will be achieved.

THE WAR-TIME SOCIAL SURVEY

A RECENT report of the Select Committee on National Expenditure provides a striking vindication of the War-time Social Survey of the Ministry of Information, which has been the subject of much adverse criticism. The appearance of the report is of special interest at the moment in view of the renewed attention being given to the organization of social research. The Committee is emphatic in its opinion that the War-time Social Survey is an essential service,