

offers such a proof and supports it with statistics. While it is possible to check her arithmetic—one error may be noted in the total under A(4) on p. 40—the fundamental figures on which her estimates of cost are based are given in the form of averages and it is not clear how these have been determined.

The author believes that, although there would be no intrinsic difficulty in distributing to all men on an equal basis the goods which already exist, the incentive to production would quickly disappear if that were done. Nor would this difficulty be overcome by an extension of national insurance. Already, with our pre-war rates of benefit, many an unskilled labourer with several children could do better on the dole than by a hard week's work for wages. The solution proposed is in effect the free offer of a dole to everybody (though to call it bare maintenance sounds better) irrespective of their income or state of employment. This, it is claimed, would at least have the merit of not placing those who are out of work at an advantage over those who are in work.

Perhaps the term "free offer" is scarcely fair. Those who accept would be expected in return to follow their normal occupation, to register at an employment exchange, and to accept suitable work in their own line. If unemployed beyond, say, twelve months, training for a new trade would be provided or assistance in removal to another part of the country where work might be available. This is the essence of the contract.

The nature of the maintenance scheme is best illustrated by a practical example. Consider the case of a man earning £4 a week, with a wife and two dependent children. This family would get allowances for rent, fuel and light, and food in the form of non-transferable coupons valid only between certain dates, the cash value of the coupons depending on the size and composition of the family. They would be exchangeable into money, either at a bank or at the local office which issued them, by the landlords and retailers to whom they would be paid by the householder. In the particular case chosen the allowance for rent would be 7s. a week in respect of the householder and 3s. 6d. in respect of each dependant, or 17s. 6d. in all. The corresponding allowance for fuel and light would be 1s. 6d. a week for the man and 1s. 3d. for each dependant, or 5s. 3d. in all; and for food 8s. for the man and 7s. 3d. for each dependant, or 29s. 9d. in all. In addition the man would get a cash allowance of 3s. 6d. a week and each dependant would get 2s. 6d., making 11s. in all. Thus the cash value of the total benefits payable to this household would amount to 63s. 6d. We must offset against this a flat-rate tax of 7s. 6d. in the pound, which it is proposed to levy on the first £250 of all incomes, or 30s. in this case. Hence the net weekly gain to the family would be 33s. 6d.

Certain supplementary benefits are proposed covering health, education, and funeral costs. All these would be a clear addition to wages, military and nurses' pensions, and other forms of retirement pay. But old age and widows' pensions, also benefit under the Health Insurance Acts, would be superseded by the new scheme. Unemployment benefit, on a reduced scale, would still be paid to those out of work through no fault of their own; but unemployment assistance and public assistance, apart from exceptional cases, would cease.

The flat-rate tax mentioned above is estimated to provide roughly four fifths of the money required (£2,070 million) to finance the scheme, the balance to

come from savings on existing social service expenditure and economies due to bulk-purchase of food-stuffs, to which are added the benefit of present food subsidies and a grant of some £100 million from the Exchequer.

The idea of providing free State maintenance for the poorest section of the population has attracted many thinkers, if only as a means of tidying our conglomerate social services by a clean sweep. It will be interesting to compare Sir William Beveridge's solution of this problem, not made public at the time of writing, with that of Lady Williams. Before her interesting plan receives serious consideration, no doubt the question will quite reasonably be asked whether it is really necessary. Admitting, as she apparently does, that the machinery of production, if fully utilized and directed to the satisfaction of human needs, is capable of providing "undreamed of prosperity", should not such full utilization provide employment for all, and should not wages, salaries, and profits rise in step with production—without any drastic change in the economic system—granted that enough (but not too much) credit is always made available to circulate the goods? Nevertheless, the proposals contained in the pamphlet provide refreshing food for thought for all who are interested in the major question of the future: the disposal of surplus production.

## SHIPBUILDING AND RESEARCH

THE seventeenth report of the Select Committee on National Expenditure, dealing with merchant shipbuilding and repairs, points out that the rate of output of merchant ships has been greatly increased since the beginning of the War. The programme of merchant shipbuilding which was set for 1941 was substantially attained, and in the first six months of 1942 the programme was slightly exceeded. The arrears of repair work have been cleared off, partly as a result of a decline in the amount of repair work, but partly also because of improvements in organization. The output per worker has greatly increased and has probably never been higher. In one region it increased by one half between February 1941 and June 1942, and the evidence is that in spite of American advantages in labour supply and the absence of black-out restrictions, the output per man in tons of steel in the American yards is about half that in the British yards.

In the view of the Admiralty the greatest difficulty is in obtaining sufficient labour, and the Select Committee concurs in pointing out that for a larger shipbuilding programme further measures will be required to provide the necessary labour, by the recruitment and training of new workers, better utilization of the labour force and improving the output of each worker. Riveters present a special difficulty, and the establishment of training schools for riveters in the main shipbuilding areas is recommended under the management either of the Ministry of Labour or of private shipbuilders in their own yards. Inquiry by the Ministry of Labour into the experience gained of the employment of women in other heavy industries, as well as in shipbuilding, so far as it is available, is also recommended, to decide what trades can be carried on by women and under what conditions, and what standards of health

should be required. A larger proportion of women in the age-group 20-30 should be made available for shipbuilding, and once again the importance of welfare work is stressed and the appointment of women welfare supervisors urged.

Personnel management and questions of morale and co-operation recur in this report, as well as of management, and the Committee emphasizes the wisdom of taking all possible steps to put before the workers the full gravity of the shipping position.

It is, however, the section on technique, design and research that is of the greatest interest to scientific workers. Here a careful examination of pre-fabrication of hull portions from the point of view of economy of labour is recommended. Under present conditions, the use of welding beyond a certain point does not appear to effect any saving of time as compared with riveting by skilled squads. Expert opinion inclines to the view that in British yards a combination of the two methods will give the best output. There appears still to be some room for standardization of sections and fittings and the elimination of non-essentials, and the Committee suggests that the British Classification Societies should review their rules to ascertain how far production could be assisted without lowering standards of safety.

It is disappointing to find in this section of the report the opinion that the resources of the William Froude Laboratory have not been fully exploited for war purposes by shipbuilders or by the Admiralty. The Committee therefore recommends that shipbuilders should be instructed to consult the National Physical Laboratory at the appropriate stages in the design of all proposed new types of hull, and that the Admiralty should see that full technical liaison is maintained with the Laboratory. Similarly, commenting on the delays and interruptions in the dissemination of the results of research into the problems of merchant shipbuilding and marine engineering, and the actual decrease in such research by the Institute of Welding, the Iron and Steel Institute, or under the auspices of the three universities possessing chairs of naval architecture, since the War, the report recommends that the Admiralty should establish an organization with the specific responsibility for directing and co-ordinating all development and research in respect of merchant shipbuilding. Coupled with this there is recommended, first, the appointment, in close association with this organization, of a technical intelligence staff, and, secondly, that where several firms are building similar vessels, one of them should act as leader for each part of the complete vessel and machinery, and be responsible for development and improvement in production technique for that part.

Apart from these recommendations to rectify a disturbing lapse of research activities on the part of institutions which might properly have been expected to intensify them, there are other recommendations affecting organization, such as a survey of all yards engaged exclusively on naval work to ascertain whether a small admixture of merchant shipbuilding could assist the maximum output without impeding naval work, a review of the allocation of merchant programmes with the object of reducing the number of types of merchant ships built in the same yard, and a survey of all yards not now in use for shipbuilding, and the selection for re-opening of those which could most rapidly be brought into use. On the other hand, shipbuilding has not been delayed from lack of materials, and the main conclusion of

the report appears to be that attention to the human side of personnel problems and to the organization of facilities and supplies of labour and materials in key with the demands of the country as a whole are the chief essentials to ensure the execution of a programme adequate to meet the country's needs.

## TUBERCULOSIS IN WAR-TIME

**T**UBERCULOSIS in war-time has recently been discussed by Sir Arthur MacNalty in a Chadwick Public Lecture (see p. 676 of this issue). It is also the subject of an excellent report reviewing critically the available evidence and making recommendations, which has been prepared by a committee of the Medical Research Council (London: H.M. Stationery Office, 1942. 9d. net).

The Committee finds that there has been a significant increase in the incidence and mortality of tuberculosis affecting all age groups since the War began. Modern war creates social and industrial upheavals responsible for many factors which tend either to increase the risk of contact with tuberculous persons or to a lowering of resistance to the tubercle bacillus.

The Committee makes many recommendations for preventing further deterioration in the trend of tuberculosis mortality:

(i) To reduce the spread of bovine infection from milk, the widest possible extension of pasteurization should be undertaken.

(ii) To detect pulmonary lesions at an early stage, mass radiographic surveys should be made (*vide infra*).

(iii) Improvements in the care and after-care of infected persons are necessary, with special reference to increasing the number of available beds in sanatoria and to financial aid to the patients and their dependants.

(iv) In order to raise resistance to the tubercle bacillus, especially in susceptible groups of the population, close attention should be paid to the working conditions of young employees.

(v) Additional measures are suggested; namely, the examination of contacts, investigation of tuberculosis in mental hospitals, propaganda to the medical profession and the public, and a re-organization of the tuberculosis services.

### Mass Radiography

The Committee pays especial attention to the value of mass radiographic surveys of selected groups of the community to discover the disease at an earlier stage than in most cases when the diagnosis is first made. The technique of miniature radiography, especially by virtue of its speed and economy, has made mass surveying a feasible measure. It should be stated that a subject showing positive findings in the miniature radiograph is only regarded as a suspect until full clinical, bacteriological and radiological (full-size film) evidence proves or disproves the presence of significant disease.

Miniature radiography implies the photography of the fluorescent screen image produced by X-rays and is practised in two forms: (a) 5 in. × 4 in. miniature (as used widely in the United States); (b) 35 mm. cine film miniature recording. Many units using the cine film will shortly be available in Great Britain: a technical sub-committee (the report of which