

NATURE

No. 3856 SATURDAY, SEPT. 25, 1943 Vol. 152

CONTENTS

	Page
Post-War Forest Policy in Great Britain	337
Education for World Citizenship. By J. A. Lauwerys	339
The Rising Tide of Science. By Prof. J. A. Crowther	341
Absorption Spectra in Medicine. By Dr. R. A. Morton	342
Science in Western Szechuan: I. Physico-Chemical Sciences and Technology. By Dr. Joseph Needham, F.R.S.	343
Feeding Horse Chestnuts and Elderberries to Poultry. By H. Temperton	345
Megatectonics and Microtectonics. By S. I. Tomkeieff	347
Obituaries :	
Dr. Aleš Hrdlička. By Sir Arthur Keith, F.R.S.	349
Dr. A. H. Evans. By Prof. James Ritchie	350
Prof. F. Bacon	350
News and Views	351
Letters to the Editors :	
James Prescott Joule and the Unit of Energy.—Prof. H. S. Allen, F.R.S.	354
Seed Selection in Forestry.—Prof. H. G. Champion, C.I.E.	354
Spray-Dried Rose Hip Powder.—Dr. V. L. S. Charley and A. Pollard	354
Alleged Vitamin K Activity of Phthalic Acid.—Dr. Henrik Dam	355
Purification of Mares' Serum Gonadotrophin.—Dr. C. Rimington and I. W. Rowlands	355
Silicates of the Perovskite Type of Structure.—H. J. Goldschmidt and J. R. Rait	356
Colour Microscopy in Ultra-Violet Rays.—E. M. Brumberg	357
Reverberation in Small Glass Tubes.—Shaun M. Cox	357
Relation between Dissonance and Context.—P. A. D. Gardner and Dr. R. W. Pickford	358
A Y-linked Inheritance of Asynapsis in <i>Rumex Acetosa</i> .—Dr. Åskell Löve	358
Adult Education in Science.—Dr. W. A. Waters	359
Archæology as a Science.—J. Reid Moir, F.R.S.	359
Research Items	360
Royal Society of Canada: Annual Meeting. By Prof. David A. Keys	362
Hermit Crabs from the John Murray Expedition.	363
High Crystal Harmonics for Oscillator Control	363
Sinhala Weapons and Armour. By J. H. H.	364
Recent Scientific and Technical Books	Supp. ii

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., Talbot House, 9 Arundel Street, London, W.C.2

Telephone: Temple Bar 1942

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.

POST-WAR FOREST POLICY IN GREAT BRITAIN

OF the making of plans there is no end, but the White Paper on Post-War Forest Policy* deserves study for a number of reasons. It is of intrinsic national importance; it will affect the pattern of the countryside of Great Britain, particularly in those regions where the landscape is not dominated by hedgerow and wayside trees; while the proposals constitute an interesting example of the development of an industry directed and to a considerable extent financed by the State, but making provision for private enterprise. Moreover, the White Paper gives a summary of the work of the Forestry Commission since it was set up in 1919. It is clear that, within the limitations of policy and finance imposed on it, it has done good work and deserves appreciation from the public.

It is important that Great Britain should have a sound forest policy. First, the two world wars have demonstrated beyond doubt that an adequate reserve of standing timber is a national necessity. Although the available supplies were not large, and to meet the emergency it has been necessary to devastate and disorganize this country's forest resources to a much greater extent than in other belligerent countries, the ability to expand the peace-time home timber production many times over has meant the saving of millions of tons of shipping in both wars, and in both shipping has been vital to victory. The development of air power will only underline this experience. Secondly, there is evidence that the British people are beginning to realize that the full use of land resources is the basis of sustained prosperity. Forestry is one of the necessary uses of land, and a sound forest policy will enable forestry to be integrated with agriculture and other land uses. Thirdly, there is much land in Great Britain suitable for the growing of the kinds of timber we need—mainly softwoods—and from an economic point of view better so used. Fourthly, the British people have great forest responsibilities throughout the Commonwealth, and this, the heart and centre, should give a lead in the proper organization and use of forest resources, both actual and potential.

A sound forest policy for Great Britain must meet certain requirements. It must provide adequate resources in the shortest possible time; it must be wide enough to bring all the benefits which forestry can give to rural development in its widest sense; continuity of aim and effort must be provided for; State and private efforts must be integrated, and provision made for the development of both; an efficient home timber industry to utilize the resources must be maintained and developed; provision must be made for the building up of the necessary scientific and technical knowledge and experience to carry out the policy, and this calls for a vigorous research policy and adequate education of personnel; and lastly, the type and design of the forest authority must

* Post-War Forest Policy. Report by H.M. Forestry Commissioners. (Cmd. 6447.) Pp. 114. (London: H.M. Stationery Office.) 2s. net.

be that best fitted for the fulfilment of its tasks. The proposals of the White Paper will be considered in the light of these requirements.

The Report states that the forest area of Britain is about three million acres, or 5.5 per cent of the land area. This is one of the lowest percentages of any country in Europe, and moreover, a considerable part of it has been cut over for war purposes. Other industrialized countries have a much larger percentage under woodland; for example, Belgium 18.4 per cent and Holland 7.8 per cent. The White Paper proposes that a forest area of five million acres be built up in a period of fifty years, made up as to two million acres selected as the most suitable from the existing three million acres, and three million acres of new afforestation. It would appear that this area could be withdrawn from rough grazings over a period without seriously reducing food production. When this has been attained, about 9 per cent of the land area would be under forest, and the timber produced therefrom would ultimately provide about 35 per cent of our present consumption. From the information given, this is the minimum necessary to enable abnormal overcutting in an emergency of three or four years without serious and long-term disorganization of the forest resources, while from a peace-time point of view it does not aim at uneconomic self-sufficiency. It can only be considered adequate under intensive management. It is emphasized that planting alone is not enough, but that subsequent care and tending are essential. The policy to be followed in forest management is not discussed in much detail, although this is an important matter.

The proposals envisage that, during the first decade, 1,100,000 acres would be replanted or planted at a net cost of £41.2 million. This is called the "desirable" programme. An "intermediate" programme of 875,000 acres costing £32 million is also given. If the financial resources and trained personnel are available to carry out efficiently the "desirable" programme, it appears to be more in accord with the needs of the country. The estimated average annual cost of the "desirable" programme during the first decade would amount to less than 7 per cent of the cost of timber imports into Great Britain in an average peace-time year.

The White Paper rightly stresses the timber production aspect of forest policy, but it also deals with rural settlement, employment, and the recreational aspect through the medium of National Forest Parks. The amenity aspect is mentioned. It is noted, however, that smaller woods, and in particular shelter belts, are excluded from the dedication proposals to be referred to later. In certain upland parts of Great Britain there is need for the rehabilitation and extension of shelter belts in the interests of the pastoral industry, and this should be provided in the forest policy, although the work would have to be carried out in consultation with agricultural interests. Land put to productive uses has a beauty of its own, and the amenity value of woods should not be judged from their early stages; but within the limitations imposed by the timber needs of Britain, every effort

should be made, both in the pattern of the forests and the species used, to ensure that they accord with the varying structure of our countryside.

The proposals are a long-term plan of investment by the State, the fruits, financial and otherwise, to be gathered in due season. The provision for its carrying out will depend on Parliament and ultimately on public opinion. Means should therefore be taken to ensure that the public is fully informed of the progress of the work by controlled access to forest areas, through the Press, publications, radio and cinema. Adequate publicity is essential for continuity.

The forest policy enunciated by the Acland Committee, which has been the basis of the work of the Forestry Commission since its inception, was impaired by two happenings. First, the Government reduced its grants in two periods of trade depression, while the part allotted by the Committee to private forestry was greater than could be undertaken in the economic and social circumstances prevailing, and no provision was made for the State to make good the deficiency. As regards the first point, it is to be hoped that future Chancellors of the Exchequer and chairmen of economy committees will appreciate that in periods of trade depression, capital investment by the State should be increased and not decreased, while the defect in the previous policy is removed in the present proposals.

It should be emphasized that practically all the timber which has been of such great value to Great Britain's effort in this War and that of 1914-18 was grown by private owners, and that our woodlands are still predominantly privately owned. Moreover, private foresters have, in the past, made important contributions to technical advancement. Britain was the pioneer in the introduction and trial of tree species from all over the world. This was done wholly by private enterprise, and the example and the results have been of great value to forestry development, not only here but also throughout the world. Further, many of the most important technical developments both in Britain and elsewhere have been made by private foresters. Unfortunately, the health and vigour of private forestry has declined, particularly since the War of 1914-18. The causes and their cure are mainly national and not forest, namely, the effects of taxation on rural properties and a feeling of insecurity which particularly affects forestry; but the forest policy should aim, so far as it can, at the resuscitation of private forestry, because it is capable of making our forestry a richer and more varied thing than it would otherwise be.

The White Paper proposes a scheme whereby private owners would 'dedicate' woods. This would involve an undertaking to use the land so that timber production would be the main object, to manage according to an approved plan, to employ skilled supervision, and to keep adequate accounts. In return for this and also for the continuance of the war-time control of fellings, the State would pay 25 per cent of the net annual expenditure when there was a deficiency, and provide private loans at current rates of interest. The scheme provides that all suitable forest land should be dedicated or in due course

taken over by the State, land not properly used being dealt with first. The needs of the country necessitate that all suitable forest land be used for timber production. To discuss whether the terms offered are the best and most generous which should be made is outside the scope of this article; it will be in the national interest, however, if it is made possible for owners interested in forestry, small and large, to play their part in forestry development in Great Britain. The task is so large that all who can help are needed, and private enterprise can make a distinctive contribution.

One of the tragedies of the present abnormal over-cutting is that the future of the home timber industry is gravely jeopardized. Nevertheless, it is useless to create forest resources without providing for their logging and conversion. The problem is referred to in the White Paper, and it is stated that consultations are proceeding. It is one of great difficulty, but means must be found to conserve and develop the available skill and knowledge of the industry's personnel in such a way that the industry can be readily expanded as increased timber supplies become available in the future.

To fulfil the tasks envisaged by the White Paper will call for personnel in all grades who have the requisite imagination, love of the countryside, scientific background and technical training, and who will have available to them the results of a well-conceived and vigorous research policy.

On the educational side it is important that the right kind of men be attracted and proper provision made for their training, which should not be on too narrow a technical basis in the case of the higher grades. When recruited, they should be encouraged by reasonable conditions of service, and leaders developed by devolution of authority according to capacity. No concrete educational proposals are made in the Report, but these are promised later; it is important that they be adequate.

The outstanding research problems are discussed. There is emphasis on technical problems rather than on the broad scientific fields on which these technical problems rest. It is probable that the development of private forestry will call for research in the economic field of forestry, but no reference to such is made. The principal new proposal in research organization is the creation of a forest research station at Alice Holt. This will involve the withdrawal of the Commission's research workers from universities. The creation of field research stations, suitably equipped, is to be welcomed, and all the principal forest regions of Britain should ultimately be covered, but such centres must be irrigated by streams of thought and ideas from the sciences and arts on which forestry is based. The universities are, or should be, the centres of such inspiration, and such forest research centres should be regarded as seasonal centres only, the research workers being based on universities. This proposal in the White Paper should be reconsidered.

In the provisional estimate of expenditure for the first decade, the allocation for education and research is less than 1½ per cent of the total expenditure. This is certainly not excessive.

The design of the forest authority should, on one hand, promote the efficient and vigorous carrying out of the forest policy, and, on the other, secure adequate contact with Parliament, the source of its funds, and the other departments of State concerned with rural planning and development. The latter will be more important in the future than in the past. A greater area of land will be drawn from other uses, and it appears likely that the countryside of Britain will be more consciously planned as a whole in future.

The White Paper does not propose any important changes in the present constitution of the Forestry Commission. An *ad hoc* authority independent of the Agricultural Departments is proposed. Experience indicates that this is essential to secure vigorous forestry development, but machinery will be necessary for co-ordination with other interested departments and bodies to ensure the integration of rural development as a whole. A single authority for the whole country is also proposed. As agriculture and planning in Scotland is under the Secretary of State, the question of a separate authority for Scotland has been raised. On balance, the advantages of a single unified service are substantial, but it is clear that there should be wide devolution of authority, both in the interests of forestry development itself, and to ensure adequate integration with the agricultural and other departments. The greater the effective devolution, the more certainly will forestry development accord with regional characteristics, physical, social and economic.

The Forestry Commission differs from the usual Government Department in design. It has certain advantages, but one of the drawbacks is that it has no ministerial spokesman, being represented in Parliament by one of its members. While not recommending it, the White Paper suggests that in future it might be represented by the Lord President of the Council, assisted by a committee consisting of the Secretary of State for Scotland, the Minister of Agriculture and the chairman of the Forestry Commission. It may be suggested that the Minister of Town and Country Planning should also be included. Whether this proposal is the best to ensure that forestry is suitably represented in Parliament, and secure, with other means, adequate co-ordination with other interested departments, is a matter for careful consideration before a decision is made.

EDUCATION FOR WORLD CITIZENSHIP

Social Studies and World Citizenship

A Sociological Approach to Education. By L. J. F. Brimble and Frederick J. May. Pp. xii + 158. (London: Macmillan and Co., Ltd., 1943.) 6s. net.

IF civilization is to survive, a super-national organization will have to be set up in order to restrain the ambition and moderate the selfishness of competing national States. We can no longer afford political anarchy: the world is too small, industry too complex, science too powerful. Our experience