Problems of British Forestry

IN a lecture to the British Science Guild at its annual general meeting held in the Mansion House, London, on June 19, Prof. R. S. Troup discussed the important question of forestry in Great Britain, with special reference to the programme of State afforestation now being carried out by the Forestry Commission, its progress to date, its limitations, and some of the scientific and technical problems following in its train; he also reviewed the question of private forestry and pointed out some of its defects. The significance of British forestry at the present time may be realised from the fact that less than five per cent of the requirements of Great Britain in timber are met from home-grown sources, that the forest capital of the world is being consumed at an alarming rate, and that the shortage of timber which is likely to result may cause much distress in the absence of a supply of home-grown timber.

Dealing with the planting scheme of the Forestry Commission, Prof. Troup explained that the afforestation of large tracts of bare land with species which are in many cases exotic, introduces problems of a complicated nature; these are investigated by a special research branch of the Forestry Commission aided by certain universities and particularly by the Imperial Forestry Institute at Oxford. Among these problems, not the least important are those relating to soil conditions, such, for example, as are met with on the heath lands which form a considerable portion of the area available for forestry: on such lands the soil tends to become degraded owing to the leaching out of the soil nutrients in a climate where precipitation exceeds evaporation, with the result that the establishment of tree-growth is often difficult. In such cases deep ploughing has proved successful on an experimental scale. On peat lands good results have been obtained by draining and planting on square turfs dug out of the drains and placed in an inverted position on the surface of the ground; by this means the turf becomes oxidised and breaks down, liberating nitrogen and other essential nutrients. Experiments in the use of basic slag have given remarkable results on very unfavourable peat soils.

Research in Great Britain on the control of pests and diseases is mainly centralised at the Imperial Forestry Institute at Oxford. In forestry, direct measures for the control of insect pests, such as trapping, grease-banding, and hand-collection may prove too costly, and special attention has to be directed towards preventive measures of a sylvicultural character, such as the avoidance of large areas of pure crops, the removal of sickly trees forming breeding centres for noxious insects, and the barking of newly-felled coniferous trees in order to prevent the multiplication of destructive beetles which lay eggs in their bark.

Increased attention is being directed to methods of biological control for dealing with forest insect pests. In this connexion, an interesting study has recently been made of the life histories of the *Sirex* woodwasps which bore into living coniferous trees, and of their parasites, the large ichneumonid, *Rhyssa persuasoria*, and the smaller cynipoid, *Ibalia leucospoides*. As a result of this work, larvæ of the *Rhyssa* parasite have been exported in numbers to New Zealand by the Parasite Laboratory at Farnham Royal in an attempt to deal with an epidemic of woodwasps in the coniferous plantations there. Similar studies are being made of the parasites of the pine bark-beetle, *Myelophilus piniperda*, and the oak leaf roller moth, *Tortrix viridana*, which causes extensive defoliation and mortality among oak trees.

With regard to fungal and bacterial diseases, important work is being carried out on predisposing causes, among which frost promises to be of more importance than has hitherto been suspected. The oak rot disease caused by the fungus *Stereum spadiceum*, which has resulted in extensive loss in the Forest of Dean, furnishes an example of the complicated character of some of these predisposing causes. Investigations carried out so far indicate that the ingress of this fungus is due in part to the fact that, in the days of wooden ships, oak trees were widely spaced to encourage the growth of large branches for the production of curved shipbuilding timber. Later, when wooden ships were abandoned and the value of the trees lay in the bole rather than in the branches, the oaks were left to crowd each other. The lower branches thus died off, and through the dead wood the fungus gained admission to the interior of the bole, causing its decay.

The progress made so far in carrying out the State afforestation programme in Great Britain has been good, but in Prof. Troup's opinion the programme itself needs reconsideration, since it was formulated during the War, and is based primarily on questions of national security. During the years following the War, other weighty factors have forced themselves into prominence, including the prospect of a world shortage of timber and the question of unemployment. The time has now arrived, therefore, when the forest policy of Britain should be reconsidered on a wider basis. Private forestry is in an unsatisfactory state, a large percentage of the private woodlands being unproductive to a greater or less extent, while scientific forest management is the exception rather than the rule. This is probably due in some measure to the fact that most of our woodland estates are too small to form economic units: a possible remedy would be to work on a co-operative basis with trained forest managers in charge of groups of estates. Legislation may even be necessary, as in the case of certain Continental countries, to provide for the management of private woodlands on approved lines and the compulsory reafforestation of felled areas.