

management on a perpetuating basis. The same comment applies to private and public-company owned exotic forests, which should be regarded as quasi-public assets. These forest properties should be maintained in a condition of maximum productivity by the adoption of such appropriate protective, silvicultural, logging, and re-establishment measures as will ensure their management in perpetuity; recognition of these views is reflected in the willingness of some owners to incorporate relevant provisions in sale agreements with intending loggers and sawmill operators.

9. *Forest Fire Protection*.—Forest fire protection in New Zealand rests on a permissive basis, as a result of which many forest-owners rely on their neighbours, sometimes the State Forest Service, sometimes other forest-owners, for no inconsiderable portion of their fire protection. If forests, whether they be indigenous or exotic, and whether they be State, Native, or privately owned, are to be regarded as public assets, as they should be, then all should receive from their owners a certain minimum of fire protection, and possibly some of it provided for from public funds. It is therefore believed that the time has now arrived in the development of forestry in New Zealand when forest fire protection should be moved from the permissive to a compulsory basis and appropriate powers secured whereby forest and land owners may be suitably combined to finance and operate an adequate fire protection system for their resources. The occasional use of an aerial fire patrol in the Rotorua-Taupo district during the last fire season proved so extremely useful in the early detection and control of fires that their general employment post-war should be provided for; arrangements have already been concluded for the 1944-45 fire season whereby a regular aerial patrol will be provided in the Rotorua-Taupo district.

10. *Forest Utilization*.—The general picture of forest and timber utilization in the future is being thrown entirely out of focus by popular misconceptions regarding various technical advancements in the plastics and chemical fields. Such advancements are essentially refinements in the employment of wood, making it more useful through improved strength, hardness, and durability. Without exception, they are of little significance as regards materially increasing the over-all volume of wood use, or of substantially economizing forest resources. It has been estimated that if every known chemical development was to be applied to the world's forest-product industries, the markets for economically priced chemical wood products, including pulp and paper, rayon, plastics, &c., would not absorb even 20 per cent. of the total annual production of raw forest material. So serious is the popular misconception in respect to plastics that the leading manufacturers are warning the public by means of wide-spread advertisements that plastics will not and cannot replace wood—largely because they are so very expensive—but can only improve its performance, a comment which is likewise applicable to methylolurea, recently announced as allowing relatively soft woods to be given an extremely hard surface. The treatment would have been of more interest had it been a softening process which allowed rimu and matai to be nailed easily and without splitting.

The essence of the whole matter is that the saw log and its sawn timber is the basic product of the forest and is likely to remain so for all time. Upon this fact the country's forest economy must be based; and for this reason New Zealand forestry has reached a critical stage in its development. The imperative necessity for relieving the drain upon its indigenous resources, by increased usage of exotic timber, has long been a theme of Forest Service reports. The realization of this objective is now threatened by a tendency to perpetuate the methods of indigenous-timber conversion in the exploitation of the exotic resources. Unless firmly resisted, such a development spells a national disaster of the first magnitude in the country's forest economy. The question is further discussed in Chapter VIII (page 15, paragraph 69).

11. *Forest Finance*.—Discussions have continued with the Treasury on the subject of reorganizing the national forest finances, under which interest is charged at 4 per cent. on net finance required for the State Forests Account as well as on accumulated advances of previous years. The earlier compound interest remains in the forests accounts, and since 1940 simple interest only has been charged on total loans. Such a system of accounting is not only completely unrealistic, but fails to present a true picture of the departmental operations. In order to expedite the desired reorganization, the Government arranged for one of the departmental accounting staff who had completed his overseas service with the Forestry Units to be seconded for study of forest financing and accounting methods in Great Britain, North America, and Australia, as a result of which it is planned to inaugurate marked improvements in the Department's estimates, budget control, accounting, &c., as well as in the complete recasting of forest finances.

12. *Soil Conservation*.—Long-continued insistence by the Forest Service that the only realistic and economic solution to the problem of erosion control lies in Dominion-wide control of land-burning operations is at last winning wide recognition. This is reflected by the support recently forthcoming from the various Advisory Committees which now function under the Soil Conservation Council, and a great step forward will be achieved if the newly appointed Catchment Boards concentrate upon this phase of their operations.

One aspect of soil conservation constitutes a serious threat to the national forest economy. Well meaning but unrealistic enthusiasts advocate a lock-up-use-not policy of forest reservation, under the mistaken impression that such a practice will perpetuate the principal indigenous species such as rimu, matai, &c. The exact reverse would occur in most forests. Why do so many of our rimu forests consist of virtually only old trees with seedlings and medium-age trees so few as to be insignificant? The initial cause is the fact that, no matter how prolifically the old trees seed, the humus on the floor is so thick that, even when the seeds germinate, roots are seldom able to penetrate to the mineral soil beneath, and most seedlings therefore die. The next phase is that those which do succeed