PRESIDENTIAL REVIEW

F. E. HUTCHINSON

Among developments of forestry significance during the past year, first place may be given to the De Gryse report "Forest Pathology in New Zealand", which has focused attention on the protection of our forests from attack by insects and disease.

In considering this publication it must be recognised that any specialist report by an outside expert must inevitably be based on an appreciation of the local position for which the author must rely heavily on others, and must also inevitably in its recommendations tend to state general principles, leaving precise application to be worked out by local experts.

The treatment, therefore, lacks colour, and is not likely to make the impact on the national consciousness which both the excellence of the report and the importance of its subject deserve, unless supported and reinforced in concrete form by the forestry profession in New Zealand. It may therefore be of value to set out the main points emerging from the De Gryse report with a view to their endorsement by the Institute.

The first point to be stressed is the utter essentiality of an effective quarantine system to guard against the introduction of insect and fungoid pests. For the next two generations at least, and probably for long after that, the forest industries of New Zealand will be based on species brought from the northern hemisphere, where their parent stands are subject to chronic or epidemic attack by a whole series of pests whose economic significance is tangibly measured in annual losses of merchantable volumes running into millions of pounds. Introduction of such pests could be very costly to commercial forestry in New Zealand, and the quarantine service is our only safeguard against such event. Over the first half century of European settlement in this country, the long period of time and the range of climatic changes experienced on the voyage proved reasonably effective barriers, but with air transport spanning the world in a few days with air-conditioned and pressurised planes, the risk of introduction of insects and disease is enormously increased.

Our quarantine service is keenly alert to its responsibilities and is efficient in its methods. To be completely effective, however, it is essential that it be supported by the full strength of an informed public opinion. The fact that the press, from time to time, quote comments by travellers, tourist interests, and others complaining of "delay and inconveniences caused by unnecessary and absurd precautions" carried out by the quarantine service, indicates that this objective has so far been incompletely attained. In view of the efforts now being made to attract tourists to this country, and to smooth
everything in their path, it is of prime importance that those concerned with all levels of the tourist business appreciate the vital nature of the menace to our primary industries and are prepared to support the quarantine rather than to evade it. This is a field where the Institute's Public Relations Officer might do much good.

The second point is the need for a continuing watch over the forests of New Zealand so that accurate information is constantly available as to the identity, incidence, and significance of insects and fungi in the stands. Such a watch is obviously the essential first step to any control measures that may be required, and there is no need to labour its purpose to a forestry audience. It is worth stressing, however, that to be effective, the observations must cover all forest regardless of ownership, so that State, local body, industrial, and farm forests must all be included in the scheme. The last decade has seen the development of a very effective pattern of co-operation in fire protection, and it now seems desirable to extend this pattern of co-ordination of effort for mutual advantage into the field of insect and fungoid protection. In this field industrial forestry is preparing to play its part, though in the initial stages progress may not be rapid due to the specialised nature of the field and the lack of suitable staff.

Cover for the many small plantings on farms and similar land holdings throughout the country will no doubt have to be provided by an expansion of the State service, but well-timed publicity by the Institute may be of value in building up a correct appreciation of the position among landholders.

The third point to be raised is the need for fundamental research covering the whole field of forest biology. This field goes far beyond the mere study of insects and fungi as such, but must begin with a much fuller understanding than we now possess of the growth and development of our stands. We have established vast acreages of plantations of exotic species on non-forest bearing soils. A whole series of evolutionary processes is now in train, converting the plantations into true forest complexes, and to be successful, the whole of our future forestry practice must take cognisance of this position. If we look briefly at some of the main aspects of these processes—soils, microclimates, plant physiology, and ecology, in addition to entomology and mycology, we find that research on these matters is being done by a considerable number of different institutions under quite widely separated control, e.g., Cawthron Institute, Soil Bureau, Plant Diseases Division, Forest Research Institute, the University Colleges, and the Agricultural Colleges. It is by no means contended that these institutions should be brought under one control, nor is it in any way to be inferred that they do not co-operate. Centralised control is usually fatal to the spirit of scientific advancement, and the level of co-operation between scientific services and institutions in New Zealand is of a high order.
It is believed, however, that the series of special problems presented by the acclimatisation of the exotic forests is not advancing as rapidly as the urgency of the problems and the economic significance of these forests deserve, due to lack of an overall plan under which the resources of all available institutions might be organised to deal with specific sections in accordance with an agreed scale of priorities. It is believed that forestry research in New Zealand has tended to work too much to itself and has attempted to carry out, unaided, projects in which other organisations are obviously fitted to make a specialised contribution. With the present acute shortage of trained staff and facilities, it is obviously desirable that every effort be made to mobilise fully the resources of the nation. This will require interest and approval at highest levels to secure the necessary co-ordination and priorities.

The fourth point for consideration is the need for a higher standard of silviculture. In New Zealand at the present time, this phrase is generally used to mean thinning, and the place of thinning in pine forestry practice is the subject of much discussion and experiment. De Gryse has drawn attention to another aspect with his reference to monocultures.

It is accepted that a well thinned stand, growing vigorously, should have a generally higher degree of resistance against pests than an unthinned stand in which individual resistance is lowered by intense mutual competition and in which quantities of dead and dying material afford subsistence to a pest population at a high level. It is also accepted that a diversity of species and of arrangement tends to lower the risk of loss from insect and fungi in any unit area.

However, it must first be made crystal clear that the highest standards of thinning practice and the greatest degree of dispersion of commercial species practical in a small country might be nullified by the introduction of only one out of several pests of economic significance in the northern hemisphere.

Second, we must not lose sight of the essential fact that silviculture is the handmaiden of utilisation, and that the extent to which one may go with ranges of species, thinning schedules, and so on, is strictly limited by the economic conditions ruling at the time. The factor limiting the adoption of thinning schedules in exotic forests at the present time is that, in most areas, the capacity of existing utilisation plants is still well below the sustained yield capacity of the stands. Intensive silviculture will come most quickly to those organisations which are expanding their utilisation capacity beyond their sustained yield potential to deal with present excess growing stock. Once this problem has been dealt with, the practice of more intensive forestry will naturally follow from the necessity to increase unit yields to maintain plant production. Meantime, the rate of expansion of plant capacity is naturally conditioned by the capacity
of the market to absorb the timber, pulp, and paper products which can be produced.

In the indigenous forests, the ruling factors are operating in another direction, but are none the less starkly economic in character.

De Gryse rightly draws our attention, on theoretical grounds, to the protection factors inherent in the indigenous types. All New Zealand foresters would, from several angles additional to that of protection, like to see our future forest development resting on a tripod of Pinaceae—Podocarpaceae—Fagaceae. We must, as realists, however, recognise the nature and extent of the difficulties in the way of developing this tripod.

In particular, we may ask what hope there may be of developing a podocarp plexus when present trends are still moving strongly toward its utter extinction and encouraging, even forcing, the continued use as general purpose timbers of woods which should now be regarded as special purpose timbers only. Obviously the first essential in any scheme for perpetuation of the podocarp forests is a drastic reduction in the consumption of podocarp timbers.

Accomplishment of that aim is admittedly fraught with difficulty, and efforts to shut off supply at the source may not prove completely effective, but it is pertinent to point out that supplies of pine timbers are now available in quantities sufficient to replace the present podocarp element over the whole field of general building and construction. They are also being made available in sizes, grades, and treatments fitting them to be used in specialised fields of such range and variety as to establish their suitability to displace podocarps over all but a narrow range of special purposes.

Under the circumstances, such replacement of podocarp by pine is not only desirable for the full utilisation of our pine forests but is utterly essential if the podocarp element is to continue to be of economic significance for more than one or two decades. Yet progress in this direction is still impeded by outmoded regulations and restrictions covering many fields of timber use. This opens up a wide field for educative and public relations work not only by the timber trade but also by the forestry profession.

In particular, it is considered that this Institute should urge upon the Government the necessity to promulgate among all its departments, agencies, and ramifications a concrete and forthright policy of conservation of podocarp timbers together with maximum encouragement of the use of pine timbers as the fundamental basis of a realistic forest policy.