EDITORIAL NOTES

Forestry in Westland.—Indicative of a reviving public interest and a surviving faith in the sustained yield management of our indigenous forests was this Institute's 1954 Annual General Meeting. This was held in Hokitika, Westland Conservancy. Field excursions and papers presented were designed to illustrate the indigenous forest management problem and the importance of its solution to the future well being of Westland.

With half the province designated State Forest land, the Forest Authority is keenly interested in the problem and carries the major responsibility for its solution. That this responsibility is accepted in principle is evident from the Annual Report of the Director of Forestry for the year ended 31st March, 1954. But even more important is the fact that the Conservator of Forests, Hokitika, and his staff are getting on with the job and translating words into action. The Forest Service demonstrated to members present at the Annual Meeting samples of the problems encountered, and the solutions found or attempted.

The Annual Meeting was fortunate in having as a guest speaker Mr. Norman Taylor, Director of the Soil Bureau, Department of Scientific and Industrial Research. Mr. Taylor gave a graphic account of Westland's soils in general and those of particular concern to the forester. The speaker made clear Westland's dependence on the soil for all its wealth, and the importance of correct land use.

Conservator D. Kennedy, in his paper, "The Role of Forestry in the Land-use Pattern on the West Coast," read at the Eighth New Zealand Science Congress, Auckland, 1954, aptly summarises the position:

"Westland has been settled by Europeans for the comparatively short period of ninety years. For most of this time the bulk of the district's wealth has been won by some form of robber economy; that is, by 'mining' the natural resources and
thereafter abandoning the land. The forests were no exception to this general rule. Several factors have combined through the years to alter this pioneering outlook, and to emphasize the need for more constructive methods of land utilization. Farming is pointing the way, and the comparatively limited area of fertile land is gradually being brought to a state of higher and more permanent productivity.

"Farming alone can use only a small proportion of the total land area, and can therefore support only a widely scattered and sparse population. It is not only desirable, but essential to the future welfare of Westland that the forest land should also make its full and permanent contribution to the local economy. The remaining timber resources have a definite limit, and could be liquidated within the lifetime of young men working in the forest industries today. If this happens and the land is left derelict—a fate that has already overtaken a portion of the forest estate—the industries and population now dependent on these forests must finally pass from the scene. With no alternative land-use in sight, it is the forester's duty to see that such a position does not arise."

The Eighth New Zealand Science Congress, Auckland. Section L. Agriculture, Horticulture and Forestry— In the Forestry Section two main topics, "Kauri Forest Management" and "Pinus radiata and Its Place in New Zealand Forest Practice," were the subjects for papers, and in addition a joint session was held with Section M. Soil Science on "Soils and Afforestation." These three topics all had a direct bearing on the Auckland region and could therefore be studied both in the lecture room and in the field; for example, remnants of kauri forest capable of management are, of course, only to be found in the north; Auckland City is on the back—or almost on the front—door of the extensive radiata pine forests of the central North Island; and the clay soils of North Auckland and Coromandel present unusually difficult features for artificial afforestation with exotic species.

Kauri Forest Management—R. C. Lloyd, in a paper entitled "First Steps to Kauri Management," described some of the work he has been conducting in State Forest on the Gt. Barrier during the past two or three years. This has necessarily been the reconnaissance of kauri regeneration following logging and burning of the virgin forest, and classification of the regenerated stands. Many of these are heavily stocked and well advanced in growth. Since the remaining stands of mature kauri throughout the north are too limited to practise forestry in, it is now only possible to commence with areas of regeneration such as those on the Gt. Barrier. Lloyd's paper was therefore an important contribution.
In the hopes of extending kauri stands planting of artificially raised kauri seedlings has now been undertaken for some years past. The techniques of seed collection and the raising of seedlings, the results of accumulated experience over some years, represents a decided advance in kauri management. These were described by F. Morrison in a paper “Nursery Propagation of New Zealand Kauri at Waipoua Forest.”

A third paper by Miss M. Lancaster dealt with the “Fungi of Kauri Forest.” Although kauri rickers and trees are generally very healthy this paper provided a useful record.

Pinus radiata and its Place in New Zealand Forest Practice.— This series of papers was opened by one from J. S. Reid on “Radiata Pine Timber: The User’s Viewpoint” giving an account of the position the timber had attained in the overall timber market. He pointed out that it would be profitable to spend a great deal more than at present in growing logs that would produce higher quality timber than is now obtained from stands silviculturally untreated.

Since the bulk of the Dominion’s timber supplies for at least two or three decades to come, and possibly longer, will be obtained from unthinned radiata pine stands, a knowledge of the growth in these is of the greatest importance. A review of this growth was given by H. V. Hinds in “The Growth of Pinus radiata in Unthinned Stands.” The speaker emphasized the limitations of the data and the short time during which it had been available, but nevertheless drew some interesting conclusions. He analyzed the individual components going to make up the growth of a stand and pointed out the marked ability of the species to assert dominance, a characteristic that has led to the loose saying that it “thins itself.” A drought and Sirex attack in stands on the pumice country had considerably complicated the data. The greatest reduction in tree numbers—or the assertion of dominance—occurs in the most vigorously growing stands. Another conclusion drawn was that because of the fast rate of natural thinning the effect of 6 x 6 or 8 x 8 planting disappears at about the 25th year of a stand.

An unexpected gift to foresters and others has been the prolific regeneration of radiata pine following clear felling of stands in most parts of the pumice country. The best method of treating this regeneration to produce the most profitable second rotation was expounded by J. Ure in “The Silvicultural Treatment of Pinus radiata Regeneration in the Rotorua Region.” The system advocated was the reduction of regeneration to about 1,000 trees per acre when about three or four years old, at which stage it could be conveniently thinned with a slasher. This should be followed by heavy thinning, reducing the stand of about 240 stems when trees had reached a height of 35-45 feet. Commercial thinnings yielding sizeable sawlogs plus pulpwood could be taken out from the age of 22 years onwards.
In a paper, "Insects and Fungi in Relation to the Development of Pinus Radiata Forests," G. B. Rawlings traced the history of epidemics that have occurred in New Zealand. A peculiar feature was that most of these had appeared only once. Examples given of epidemics were: *Pineus borneri* (Chermes pini), *Diplodia pinea*, coupled with *Phomopsis strobi*, *Hybernia indolcis*, *Sirex noctilio*, *Selidosema suavis* and *Lophodermium pinastri*. It was pointed out that there is always the danger of new epidemics arising. Steps necessary to safeguard forests against these are adequate quarantine measures, development of chemical control measures, biological control and silvicultural control.

That the marked variation to be found in radiata pine can be made use of in breeding was discussed in the paper "*Pinus radiata Tree Breeding in New Zealand*" by I. B. Thulin. The speaker gave examples of outstanding variations to be seen, and went on to describe the selection of elite trees, the propagation of clonal material from these, and the testing of the parent trees by growing clonal material on a variety of sites and the progeny testing of the individuals. He then described the method of establishing seed orchards for the purpose of obtaining seed to produce trees of improved genotypes.

Soils and Exotic Forest Tree Growth—in the joint session with the Soil Science Section two papers dealt with the problems of afforestation on difficult soils; the first by Sutherland and Levy gave an account of these problems on North Auckland soils on which many failures with introduced trees have occurred. Thrift could be quite clearly related to soil types. The second paper by Weston and Vucetich gave a similar account for soils and tree growth in the Tairua Forest on the Coromandel Peninsula. In this forest good growth is correlated with a good depth of the Whangamata and Waipaki ash showers but off these showers growth is very poor and deformed.

In the same session D. Kennedy presented a paper on "The Role of Forestry in the Land-use Pattern on the West Coast" which was delivered in summary form by the Chairman. The theme of the paper was the very clear relationship between soils and forests in the region and the fact that the present forest soils were likely to remain as such for a long time to come. These soils and the forests on them, because of their extent, were of great economic importance to the region.

Sundry Papers—H. W. Johnston gave a paper entitled "The Production of Organic Acids by Mycorrhizal Fungi and the Possible Importance of this Phenomenon in Phosphate Metabolism of Trees Supporting a Mycorrhiza." This was an interesting résumé of the relationship between Mycorrhizal Fungi and the phosphate requirements of trees.

*Fourth World Forestry Congress*—The New Zealand delegate, a member of our Institute, has given us some details of the fourth
World Forestry Congress which took place at Dehra Dun from 11-22 December 1954. Held under F.A.O. auspices with India acting as host, the Congress attracted an attendance of 360 delegates from 40 countries; reported to be the most representative gathering of foresters ever assembled. A choice of ten pre-Congress excursions to various parts of Pakistan and India gave every delegate the opportunity of seeing at least one of the multifarious types of forest encountered on the Indian sub-continent and to note the results of almost a century of forest management. The Congress itself, held in the world-renowned Forest Research Institute at Dehra Dun, was organized with an efficiency that reflects all credit on the host Government.

Modern India has forest problems of magnitude and urgency. Because of intense pressure on the land by man and his animals, the Indian forester must steer between the Scylla which demands more in wood products, live-stock fodder, soil and water conservation, shelter — benefits that only the forest can provide — and the Charybdis which calls on the forest to make way for food production. He must contend with acute mal-distribution of forests and a heavily burdened transport system, resulting in ample forest produce in some parts of the country but extreme shortage in others. And he is expected to do something about containing the great Indian Desert which is advancing south-eastward and threatening the livelihood of millions.

The Fourth World Forestry Congress gave India the opportunity to exhibit her forests and to place her major forest problems before an enlightened forum. It is undoubtedly true that the assembled delegates were able to contribute from their knowledge and experience much that will be of value to India; it is equally certain that in contributing, every delegate received a quid pro quo, of direct application to his own sphere. For New Zealand the lesson could well be India’s acceptance of forests as a permanent and essential part of the national economy; this despite a rapidly increasing population and recurrent food shortages which combine to produce a land hunger such as we have never experienced in this country. The first half-century of New Zealand’s development, when large areas of farm-land were created by destroying the original forest cover, has understandably induced the outlook that all forest is potential grassland. The experience of older countries like India, where man has wrought a livelihood from the soil over many centuries, proves that an adequate forest area is vital to the common weal, even though it involves the use of land capable of sustaining other forms of production. New Zealand may well take heed of this experience.

The Australian and New Zealand Association for the Advancement of Science—The 31st Meeting of the Association is to be held
in Melbourne from the 17-24 August, 1955. The Secretary of Section K (Agriculture and Forestry) has written as follows:

“As this meeting will not coincide with fire-seasons we hope to have a good attendance of foresters, particularly as the honour of filling the Presidency of Section K has fallen to Mr. A. R. Trist, Deputy Director of the Forestry Department of Queensland. Vice-Presidents of this section include Dr. M. R. Jacobs, the principal, Australian Forestry School, Canberra, and Mr. B. H. Bednall, the Conservator of Forests of the South Australian Woods and Forests Department.

“We are planning to give our discussions a silvicultural bias in three sessions as follows:

Silviculture of Softwood Plantations in Australia.
2. The case for and against the use of natural regeneration in re-establishing softwood plantations in Australia.
3. Tree breeding and selection in Australian softwood plantations.

Silviculture of Victorian Messmate Peppermint Foothill Forests.
1. Silvicultural techniques.
2. The practice of economical silviculture.

Problems in Natural Regeneration in Eucalypt Forests in Australia.
1. Jarrah forests.

“In addition there will be a joint session with the agriculturalists on:

Utilization of Marginal Land for Farm and Forest.
Vegetative Cover in Relation to the Water Resources of a Catchment.”

*Tribute and a Plea.* Recorded in this issue are the deaths of three members of the Institute, Owen Jones, Roderick Macrae, and Miss Mary Sutherland. Each contributed largely to the success of afforestation in New Zealand but in three separate fields; Owen Jones, in large scale company afforestation in the Putaruru-Tokoroa district, the success of which can be measured in the large scale industrial development of New Zealand Forest Products Ltd. at Kinleith; Roderick Macrae, in the large scale state afforestation on the Kaingaroa Plains, the success of which can similarly be measured by large scale development of wood industries, those of the Tasman Pulp and Paper Company Ltd., at Kawerau; and Miss Sutherland, whose paramount interest in later years has been the less spectacular, more diverse, but equally important field of farm forestry, where results are not measured in terms of
large wood industries, but rather in terms of benefit to the individual farm through shelter, amenity, and the supply of farm wood requirements, and also to a quite considerable extent, the supply of sawlogs to small local conversion units engaged in district, in place of national, supply.

Today the ownership of New Zealand's total exotic forest resource of some 900,000 acres is approximately:

<table>
<thead>
<tr>
<th>Ownership Class</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>State forests</td>
<td>51%</td>
</tr>
<tr>
<td>Private company forests</td>
<td>38%</td>
</tr>
<tr>
<td>Small private and local body forests</td>
<td>11%</td>
</tr>
</tbody>
</table>

The unbalance of the three ownership classes is apparent, although the area of state exotic forest is closely comparable to the other two classes combined. It is thought, however, that the desirable objective in this country should be the close comparability of all three ownership classes—as is the case in Sweden, for example. If this be accepted, there is need then for greatly increased activity in the field of private and local body forestry. This field, fully and properly developed, could contribute substantially towards regional self-sufficiency in wood requirements with consequent advantage to the country's economy.

There is need, too, for expression both in debate and in print, of the results of small scale and large scale private forestry—as statistics covering the composition and condition of the crop, of age-class distribution, and as records of silvicultural regimes developed and practiced, and of the results of research. Some excuse can be accepted for the dearth of published accounts of the small private forests and woodlots. The number of forest consultants in this field is small and no one consultant is in a position to speak for the whole. In the case of company forestry there is no such excuse.

Through published reports, research findings, and the like, it is possible for the student of forestry to construct a reasonably complete representation of State afforestation and its results. But no comparable representation of private forestry can be obtained through lack of published record. And since company forestry amounts to 38 per cent. of the whole, and combined company and small private forests amount to 49 per cent. of the New Zealand exotic forest resource, no accurate representation of the over-all New Zealand position can be obtained. This is in no wise satisfactory.

Finally, it can be said that exotic forestry has passed through its simplest and easiest phase, the difficult times lie ahead. These difficulties can be countered more readily only through increased efficiency developed under the spur of mutual criticism and the pooling of knowledge.